



Smithsonian

National Museum of American History Kenneth E. Behring Center

Frank and Lillian Gilbreth Collection

NMAH.AC.0803

Alison Oswald

2011

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Collection Overview

Repository:	Archives Center, National Museum of American History
Title:	Frank and Lillian Gilbreth Collection
Date:	1907-2000 (bulk 1911-1924) 1907-2000 (bulk 1911-1924)
Identifier:	NMAH.AC.0803
Creator:	Perkins, James Secor Gilbreth, Frank Bunker, 1868-1924 Gilbreth, Lillian Moller, 1878-1972
Extent:	5 Cubic feet (19 boxes) 5 Cubic feet (19 boxes)
Language:	Collection text is in English.
Summary:	The collection consists primarily of glass plate slides (negative and positive), photo prints, and stereographs documenting the work undertaken by Frank and Lillian Gilbreth from 1910 to 1924 in the fields of motion study, shop efficiency, and factory organization. Also included are slides documenting the Gilbreth Family, their travels, residences, and friends. The collection also contains the film "The Original Films of Gilbreth The Quest for the One Best Way," 1968 by James S. Perkins.

Administrative Information

Acquisition Information

The collection materials were donated by several individuals: New Jersey Institute of Technology (1975); Frank B. Gilbreth, Jr., (1980); Ernestine Gilbreth Carey (1995); Daniel B. Gilbreth (1998); and James Secor Perkins in 2001.

Provenance

The glass stereo slides were transferred to the Archives Center from the Division of Work and Industry, National Museum of American History in 2007.

Related Materials

Material in Other Institutions

Purdue University, Archives and Special Collections

Frank and Lillian Gilbreth papers, 1869-2000

The Gilbreth Papers documents the professional and personal lives of Frank Gilbreth and Lillian Gilbreth. The collection consists of personal papers, letters, correspondence, photographs, and other memorabilia that Lillian Gilbreth collected during her life regarding her youth, marriage, family, and career.

Collection of materials related to Lillian Gilbreth, 1964-2006

One folder of items relating to the life of Lillian Gilbreth, and her family, collected by her granddaughter, Lillian (Jill) Barley and Nancy Weston. Materials include clippings relating to the Lillian Gilbreth postage stamp (1984); obituaries and memorial programs for Peter Barney, Ernestine Carey, Lillian Gilbreth, Anne Gilbreth Barney, Charles Carey, and Frank Gilbreth Jr.; programs and photographs relating to Lillian Gilbreth's visit to Athens in 1964; and biographical information on Lillian Gilbreth.

Cornell University, Kheel Center for Labor-Management Documentation and Archives

Frank Gilbreth Papers on Microfilm, Collection Number: 5424 mf

Selected papers pertaining to industrial engineering. Original materials are held by Purdue University. Microfilm copied purchased from Purdue University in April 1968.

Available Formats

Series 2: Glass Stereo Slides, boxes 3-9 were digitized in 2021. Contact the Archives Center for information at archivescenter@si.edu or 202-633-3270.

Processing Information

Processed by Theresa Worden (intern) and Alison Oswald, archivist, October 2010.

Preferred Citation

Frank and Lillian Gilbreth Collection, Archives Center, National Museum of American History

Restrictions

Collection is open for research but the films are stored off-site and special arrangements must be made to work with it. Series 2: Glass Stereo Slides, boxes 3-9 were digitized in 2021. Contact the Archives Center for information at archivescenter@si.edu or 202-633-3270.

Conditions Governing Use

Collection items available for reproduction, but the Archives Center makes no guarantees concerning copyright restrictions. Other intellectual property rights may apply. Archives Center cost-recovery and use fees may apply when requesting reproductions.

Biographical / Historical

Frank Gilbreth is best known for his work on the efficiency of motion. Working with his wife and professional partner Lillian Moller Gilbreth, he applied modern psychology to his work with management. His innovative motion studies were used on factory workers, typists and the disabled. Gilbreth established the link between psychology and education to be successful management.

Frank Gilbreth was born in Fairfield, Maine on July 7, 1868. His parents, John and Martha Bunker Gilbreth were New Englanders. John Gilbreth ran a hardware business, but died when Frank was only three. Bearing the responsibility of raising her children alone, Martha moved the family twice in search of quality education for her children. Ultimately she decided to school the children herself. In 1885, Frank graduated from English High School in Boston. Despite gaining admission into the Massachusetts Institute of Technology, Frank opted to enter the work world immediately as a bricklayer's apprentice with Whidden and Company, building contractors in Boston.

Smart and skilled, Gilbreth worked his way up in the company. He learned the trade quickly and soon was promoted to supervisor, foreman, and finally to the position of superintendent. To further his education, he went to night school to study mechanical drawing.

At the age of 27, Gilbreth embarked upon his first business venture. He started his own contracting firm. His firm developed a fine reputation for quality work at a very rapid pace. He invented tools, scaffolding, and other contraptions to make the job easier. His company goals included the elimination of waste, the conservation of energy, and the reduction of cost. His work included canals, factories, houses, and dams. His clients came from all parts of the United States, and he performed some work in England.

In 1903, Frank Gilbreth met Lillian Moller (1903-1972) and married her on October 19, 1904. Lillian graduated from the University of California, Berkeley with a BA (1900) and MA (1902). She later earned a Ph.D from Brown University (1915), earning a dissertation titled *The Psychology of Management*. Lillian's academic work, large family and integral role in Frank's consulting business kept her busy. Her contributions to the business led to a greater understanding of an individual's welfare in the work world. This became a key idea to increasing productivity through scientific management techniques.

Working together, the couple became leaders in the new field of scientific management. They published books, gave lectures, and raised twelve children together: Anne, Mary (1906--1912), Ernestine, Martha, Frank Jr., William, Lillian, Frederick, Daniel, John, Robert and Jane. Some of Gilbreth's books include *Fields System* (1908); *Concrete System* (1908); *Bricklaying System* (1909); *Motion Study* (1911); and *Primer of Scientific Management* (1911). Gilbreth co-authored with Lillian: *Time Study* (1916); *Fatigue Study* (1916); *Applied Motion Study* (1917); and *Motion Study for the Handicapped* (1919).

It wasn't long before Gilbreth moved away from construction. Together with his wife, they focused on the link between psychology and motion. With her strong psychological background, and his interest in efficiency, the Gilbreth's opened the School of Scientific Management in 1913. The school was in session for four years. Numerous professional attended the school, and soon the Gilbreth's had established a reputation as consultant's to the new field of scientific management.

In 1912, Frank won a contract with the New England Butt Company in Providence, Rhode Island. There he installed his system of scientific management in a factory setting for the first time. Contracts with the Hermann-Aukam handkerchief manufacturing company in New Jersey and the Auergeressellschaft Company in Germany followed. Using motion study, Gilbreth studied and reorganized the factories, attempting to find "the one best way" to do work.

Gilbreth traveled to Germany to continue his work as a scientific manager. He visited factories and hospitals, working to improve procedures and eliminate waste. Using micro-motion study and the chronocyclegraph procedure, he analyzed and dissected motion, discovering therblings, the seventeen fundamental units of any motion. World War I slowed Gilbreth's progress abroad, so he focused his consulting business on firms in the United States.

After World War I, Gilbreth's business thrived. In 1920, the American Society of Mechanical Engineers instituted its Management Division, something Gilbreth had been demanding for years. He was now a famous American engineer, gaining financial rewards as well as professional honors.

Frank Gilbreth died suddenly of a heart attack on June 14, 1924, still in the middle of three contracts. He was honored after his death in 1944 by the American Society of Engineers and the American Management Association with the Gantt Gold Medal. After Frank's death, Lillian moved the family to California where she continued to work on efficiency and health in industry issues. She was a respected business woman and was hired by several companies to train employees, study working conditions, and reduce fatigue. She lectured at several universities (Newark College of Engineering and the University of Wisconsin), and joined the faculty at Purdue University in 1935 as the first woman professor in the engineering school.

Frank and Lillian Gilbreth often used their large family (and Frank himself) as guinea pigs in experiments. Their family exploits are lovingly detailed in the 1948 book Cheaper by the Dozen, written by Frank Jr. and Ernestine Gilbreth Carey.

Scope and Contents

The collection consists primarily of glass plate slides (negative and positive), photo prints, and stereographs documenting the work undertaken by Frank and Lillian Gilbreth from 1910 to 1924 in the fields of motion study, shop efficiency, and factory organization. As scientific managers, the Gilbreth's introduced new techniques to analyze work, the workplace, and work practices with the goal of eliminating waste to maximize productivity. The collection illustrates these new techniques and their application to a wide variety of studies. The collection is diverse and provides insight into understanding how Gilbreth approached his studies. Also included are slides documenting the Gilbreth Family, their travels, residences, and friends. The collection also contains the film "The Original Films of Gilbreth The Quest for the One Best Way," 1968 by James S. Perkins.

Series 1, Background Information, 1892-1997, includes biographical materials about Frank B. Gilbreth; copies of some of Frank Gilbreth's patents, 1892-1916; and printed materials, 1907-1997, that contain articles, newspaper and magazine clippings about Frank and Lillian Gilbreth and time and motion study generally. Black-and-white photo prints of Gilbreth or work Gilbreth documented from collections held at Purdue University and Ohio State University are included.

Series 2, Glass plate stereo slides, 1910-1924, consists of approximately 2,250 glass stereo slides photographed by Frank B. Gilbreth and others and intended for viewing through an optical viewing machine. Some are positive black and white, positive color, and negative black and white. The subject matter of the slides covers the work undertaken by Frank Gilbreth from 1910 to 1924 in the fields of motion study, shop efficiency, and factory organization. Many of the images serve as documentation for the studies the couple performed as they were hired by firms in an attempt to provide solutions to the problems of inefficiency. Also included are the Gilbreth Family, their travels, residences, and friends.

The slides are numbered sequentially. For example, a glass plate slide numbered 318949.001 will have a corresponding photoprint 318949.001 in Series 3, Photoprints of glass plate slides. Note: not all glass plate slides have corresponding photoprints. Additionally, there are Office of Photographic Services, Smithsonian Institution negative numbers assigned to many of the photo prints.

Some subject categories include:

Frank B. Gilbreth: working in motion laboratories, on factory inspections, seated in offices, with family and friends, in World War I uniform, watching and monitoring shop operations.

Lillian M. Gilbreth: with family, during university graduation ceremonies, traveling and working with Frank and observing office workers.

Gilbreth Family: family on the road in an automobile, at home seated around the dinner table, in the parlor, in the garden, and with friends and relatives.

Gilbreth ship travel: contains views on steamer voyages to Europe, deck scenes, arrivals, departures, ship officers and crew, and other passengers.

Automobile assembly study: internal and external views of a warehouse/factory, including large piles or rows of metal car frames and other parts.

Benchwork study: images of a male worker standing or sitting in a chair while filing an object secured in a vice at a workbench.

Betterment: images of efforts which contributed to industrial betterment (the Gilbreth chair, employee library, and the home reading box).

Bricklaying study: view of men wearing overalls and caps, shoveling, and men laying bricks.

Business and apparatus of motion study: views of lectures, meetings, film showings, demonstrations, charts, drawings, motion models, charts and some equipment.

Disabled study: views of partially blind World War I veterans, amputees using special typewriter, assembling machinery, use of crutches, and a one armed dentist.

Factory bench work: table-top machines assembly operations, hand tools, orderly arrangement of parts prior to and during assembly and a variety of bench vises.

Factory documentation: various images of the interior and exterior of factories including heavy machinery.

Golfing study: various cyclegraphs of a man swinging a golf club.

Grid boards: back drops used by Gilbreth to isolate and measure worker motions. This includes walls, floors, desktops, and drop cloths divided into grids of various densities and scales.

Handwriting and cyclegraphs: finger lights moving in patterns of script.

Ladders: include step ladders and painters' ladders shown in use near shelving.

Light assembly study: wide variety of images ranging from cyclegraphs of women working, to the factory floor as well as tools and machinery.

Materials handling study: different angles of an empty cart, a cart oiled high with boxes, and a man pushing a cart illustrating different body positions.

Military study: illustrate work on the Army foot measuring machine, gun parts, men holding a rifle.

Motion models: images of simple wire motion models.

Needle trade study: views of textile machinery and workers.

Office study: various shots inside of an office with tables, desks, drawers, files, and typewriters. Some of the images are cyclegraphs of female and male workers performing tasks, such as writing, both in the context of an office as well as in front of a gridded background. There are several close-ups of an organizer containing pencils, paperclips, pins and rubberbands.

Packing: methods of placing and arranging goods in boxes, such as soap packing.

Panama-Pacific Exposition 1915: contains views of statuary, fountains, and architecture of the exposition held in San Francisco.

Pure light cyclegraphs: no workers or grids visible only finger lights in motion.

Rubber stamping study: hand movements and access to ink pads and stamps.

Scenic views: views of buildings, landscapes, street scenes, and fountains from around the world documenting Gilbreth's travels.

Shoe making study: laboratory studies of shoe assembly operations with an emphasis on workers access to component pieces.

Shop machinery: various shots of machines and workers working with machines.

Signage: include organizational flow charts, shop floor plans, route maps, office layouts, numbering systems, exhibit display boards illustrating Frank Gilbreth's efficiency studies and techniques.

Stacking: views of the art and science of stacking boxes, clothing, equipment, containers, and vertical storage without shelves.

Stock bins: consists of storage bins, paper, other raw materials, shelves, and corridor shots.

Storage: images illustrate contrast between old techniques and new.

Surgical and dental studies: thester views of surgeons, assistants, nurses, hand motions in grasping, placing surgical instruments, dental work and self inspection of teeth.

Tool cribs: storage of hand tools in shops with an emphasis on easy access and easy inventorying.

Typing study: various views of female s under observation using Remington typewriters.

Series 3, Photoprints of glass plate slides, 1910-1924, consist of black and white photoprints of the glass plate slides depicting the fields of motion study, shop efficiency, and factory organization. Also included are the Gilbreth Family, their travels, residences, and friends.

Series 5, Stereographs, 1911-1914,

Series 6, Audio Visual Materials, 1968, 2000, and undated, is divided into three subseries: Subseries 1, Audio visual documentation, 1968 and undated; Subseries 2, Moving Images, 1968 and undated; and Subseries 3, Audio Recordings, 1980, 1990,. 2000 and undated. The series contains several formats: 7" open reel-to-reel audio tape, 1/2" VHS, Beta Cam SP, DVD, audio cassette, one inch audio tape, and 16 mm film.

Subseries 1, Audio visual documentation, 1967-1968 and undated, consists of supplemental documentation for the film, "The Original Films of Gilbreth The Quest for the One Best Way." Specifically, there are brochures and other printed materials detailing what the film is about and how copies may be obtained. This subseries also contains a copy of the book Cheaper by the Dozen, 1948. The book was written by Frank Bunker Gilbreth, Jr. and Ernestine Gilbreth Carey and tells the biographical story of Frank Bunker Gilbreth and Lillian Moller Gilbreth, and their twelve children. The book was adapted to film by Twentieth Century Fox in 1950.

Subseries 2, Moving Images, 1967, consists of one title, "The Original Films of Gilbreth The Quest for the One Best Way." The film materials consist of the film's production elements: 16 mm black and white negative A-roll; 16mm black-and-white negative B-roll; and the optical track negative. Each is 800 feet in length.

The film presents a summary of work analysis films which were taken by Frank B. Gilbreth between 1919 and 1924 showing a number of industrial operations from which the motion study was developed. Demonstrates motion and fatigue study, skill study, plant layout and material handling, inventory control, production control, business procedures, safety methods, developing occupations for the handicapped, athletic training and skills, military training, and surgical operations as researched and developed by Gilbreth. Points out that Gilbreth created entirely new techniques on how to improve industrial efficiency, while at the same time significantly improving conditions for the workers. The film was produced by James S. Perkins in collaboration with Dr. Ralph M. Barnes and with commentary by Lillian M. Gilbreth and James S. Perkins. The film was presented on December 3, 1968 at the American Society of Mechanical Engineers Annual Meeting in New York. The formats for this title include: 16 mm, Beta Cam SP, and DVD. Additionally, there is a one inch audio tape recording for the film.

Subseries 3, Audio Recordings, 1980, 1990, 2000 and undated consist of a Smithsonian radio program titled "Inside the Smithsonian, Cheaper by The Dozen," from 1980 and an recording of Ernestine Gilbreth Casey discussing Gilbreth Family photographs from 2000. Hosted by [Ann Carroll?], "Inside the Smithsonian, Cheaper by The Dozen," featured Fred and Bill Gilbreth discussing their parents Frank and Lillian, Gilbreth, and the book Cheaper by the Dozen. The radio program coincided with the 100th Anniversary of the American Society of Mechanical Engineers (founded 1880) of which Lillian Gilbreth was the Society's first female member and showcased a single case exhibition at the Museum of History and Technology (now the National Museum of American History) titled "Frank and Lillian Gilbreth: Motion Engineers." Inside Smithsonian Radio was a weekly program produced by the Office of Telecommunications. The recording of Ernestine Gilbreth Carey was recorded on July 9, 2000 and documents Ms. Carey's identification and discussion of Gilbreth Family photographs. David Ferguson assisted in the discussion. A hard copy index to the photographs Ms. Carey discusses is available.

Arrangement

The collection is arranged into six series.

Series 1: Background Materials, 1892-1997

Subseries 1.1: Frank B. Gilbreth, undated

Subseries 1.2: Frank B. Gilbreth patents, 1892-1916

Subseries 1.3: Printed Materials, 1907-1997

Series 2: Glass Stereo Slides (Positive), 1910-1924 and undated

Series 3: Photo prints of glass stereo slides, 1910-1924 and undated

Subseries 3.1: Photo Print Books, 1-9, undated

Subseries 3.2: Photo prints (duplicates), undated

Series 4: Stereo Autochromes, undated

Series 5: Stereograph Cards, 1911-1914

Series 6: Audio Visual Materials, 1968, 1990, 2000 and undated

Subseries 6.1, Audio visual documentation, 1968 and undated

Subseries 6.2: Moving images, 1968 and undated

Subseries 6.3: Audio recordings, 1980, 1990, 2000, and undated

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Industrial engineering
- Industrial films
- Industrial management
- Machine shops
- Machinery industry
- Motion study

Types of Materials:

- BetaCam SP (videotape format)
- Motion pictures (visual works) -- 1930-1950
- Videotapes

Container Listing

Series 1: Background Information, 1892-1997

Box 1, Folder 1	Frank Gilbreth biographical materials, undated
Box 1, Folder 2	Frank Gilbreth patents, 1892-1916
Box 1, Folder 3-5	Printed materials, 1907-1997
Box 1, Folder 6C	Photo prints from Ohio State University documenting Gilbreth, undated
Box 1, Folder 6	Photo prints from Purdue University documenting Gilbreth, undated

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Series 2: Glass Stereo Slides (Positive), 1910-1924

Restrictions: Series 2: Glass Stereo Slides are restricted. The glass stereo slides in boxes 3-9 were digitized in 2021. Contact the Archives Center for information at archivescenter@si.edu or 202-633-3270.

Subseries 2.1: **318949.0001 to 318949.0180**

Box 3	318949.0001 seated male in room with three long tables and a line of sinks, 3/21/1919 Notes: Card Number: 387 Category: Misc. Copy negative: 92-14232 Information in photo: 1093 Information on photo: 1093
Box 3	318949.0002 Seated males and females working in large office. Male in foreground has an adding machine on his desk., undated Notes: Card Number: 62 Category: office study Copy negative: 92-14233 Information on photo: 219.48
	318949.0003 Cyclegraph of woman doing light assembly work (staking buttons, 8/23/1917 ?) Three motion clocks are visible in image., undated Notes: Card Number: 77 Category: assembly study Information on photo: 17655.A
Box 3	318949.0004 Cyclegraph of female at gridded table and gridded background. Table height is adjustable and her feet are on a box., undated Notes: Card Number: 1 Category: assembly study
	318949.0005 Cyclegraph of woman at gridded table and gridded background., undated Notes: Card Number: 679 Category: assembly study Copy negative: 90-16320 Information on photo: 18184
	318949.0006 Cyclegraph of man doing office work with another man watching., undated Notes: Card Number: 223 Category: office study Copy negative: 90-16321 Information on photo: 18184

318949.0007 Cyclegraph of man using lathe with two or three others watching., undated

Notes: Card Number: 59
Category: machine shop study
Copy negative: 90-16322

318949.0008 Cyclegraph of woman doing light assembly work. She sits behind a Gilbreth penetrating screen and in front of a gridded background. Two motion clocks are in image., undated

Notes: Card Number: 76
Category: assembly study
Information on photo: 17747

318949.0009 Cyclegraph of man doing office work., undated

Notes: Card Number: 225
Category: office study
Copy negative: 90-16324

318949.0010 cyclegraph of shop work. Stereo camera visible in background., undated

Notes: Card Number: 61
Category: misc./pure cyclegraphs or unidentified study
Copy negative: 90-16325

318949.0011 Cyclegraph of man using a office stamps. Cyclegraph equipment visible in the background., undated

Notes: Card Number: 227
Category: office study
Copy negative: 90-16326

318949.0012 Cyclegraph of worker using a small table top lathe., undated

Notes: Card Number: 63
Category: machine shop study
Copy negative: 90-16327

318949.0013 Cyclegraph of man using lathe (?) with three men watching, undated

Notes: Card Number: 64
Category: machine shop study
Copy negative: 90-16328

318949.0014 Hortense Stollnitz typing with cyclegraph lights on head and hands. Note what looks like a gold medal around her neck?, 1916

Notes: Card Number: 230
Category: typing study
Collection: NMAH
Copy negative: 90-16329

Gilbreth image: 1686A

Information in photo: 1686A

Information on photo: 26

Job name: Remington Typewriter, Ilion NY

Related captions: GL-1683A Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1684 Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1685 Miss Stollnitz, Remington Champion, with cyclegraph lights on head, right elbow and both forefingers. Demonstrates small amount of scope of...

Location of subject: Gilbreth Motion Study Laboratories, Providence RI

Subject names: Hortense Stollnitz

318949.0015 cyclegraph of man using office stamps. Cyclegraph equipment visible in background., undated

Notes: Card Number: 231

Category: office study

Copy negative: 90-16330

318949.0016 cyclegraph of man using office stamps, undated

Notes: Card Number: 232

Category: office study

Copy negative: 90-16331

Information on photo: 623 (?)

318949.0017 cyclegraph of man working at desk turning papers (?), undated

Notes: Card Number: 233

Category: office study

Copy negative: 90-16332

Information on photo: 17588

318949.0018 cyclegraph of man turning papers., undated

Notes: Card Number: 234

Category: office study

Copy negative: 90-16333

Information on photo: 17583

318949.0019 cyclegraph of man working with textiles., undated

Notes: Card Number: 70

Category: needle trade study

Copy negative: 90-16334

Information in photo: 23

Information on photo: 18231

318949.0020 cyclegraph of person using machine on gridded table in front of gridded background., undated

Notes: Card Number: 71

Category: misc./pure cyclegraphs or unidentified study

Copy negative: 90-16335

Information on photo: 17789

318949.0021 cyclegraph of man using an adding machine with two men watching., undated

Notes: Card Number: 237

Category: office study

Copy negative: 90-16336

318949.0022 cyclegraph of man using multispindle drill press with another man watching., undated

Notes: Card Number: 19

Category: machine shop study

Copy negative: 90-16337

318949.0023 Cyclegraph of woman at gridded and numbered table., undated

Notes: Card Number: 74

Category: misc./pure cyclegraphs or unidentified study

Copy negative: 90-16339

Information on photo: T.314

318949.0024 Cyclegraph of woman at gridded and numbered table., undated

Notes: Card Number: 700

Category: misc./pure cyclegraphs or unidentified study

Copy negative: 90-16338

318949.0025 Cyclegraph on gridded table., undated

Notes: Card Number: 79

Category: misc./pure cyclegraphs or unidentified study

Copy negative: 90-16340

Information in photo: 19164?

Information on photo: 1700.125

318949.0026 chronocyclograph of a person using a milling (?) machine., undated

Notes: Card Number: 80

Category: machine shop study

Copy negative: 90-16341

318949.0027 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 812
Category: office study
Copy negative: 90-14468
Information in photo: 177 649

318949.0028 Part of a series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 813
Category: office study
Copy negative: 90-14457
Information in photo: 174 649

318949.0029 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 814
Category: office study
Copy negative: 90-14455
Gilbreth image: 176 649
Information in photo: 176 649

318949.0030 Gridded desk top with stamps in the fore ground and a mans arm in the background., undated

Notes: Card Number: 249
Category: office study
Copy negative: 90-14456
Information on photo: 200026

318949.0031 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 816
Category: office study
Copy negative: 90-14446
Information in photo: 170 649
Information on photo: 1700.112

318949.0032 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 817
Category: office study
Copy negative: 90-14458
Information in photo: 173 649

318949.0033 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 818
Category: office study
Copy negative: 90-14454
Information in photo: 165 649

318949.0034 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 819
Category: office study
Copy negative: 90-14464
Information in photo: 168 649

318949.0035 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 820
Category: office study
Copy negative: 90-14450
Information in photo: 167 649

318949.0036 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 821
Category: office study
Copy negative: 90-14443
Information in photo: 162 649
Information on photo: 1700.98

318949.0037 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image., undated

Notes: Card Number: 822
Category: office study
Copy negative: 90-14453
Information in photo: 172 649

318949.0038 series of ten photographs of woman in large polka dot dress sitting at gridded desk using a stamp and pad. Gilbreth motion clock in image. (double exposure), undated

Notes: Card Number: 257
Category: office study
Copy negative: 90-14467

Information in photo: 164 649163 649

Information on photo: 1700.118

318949.0039 gridded desk top filled with specialized tools - brayer, punch, key, scissors, pencil and pens in rack, stamps, ink., undated

Notes: Card Number: 258

Category: office study

Copy negative: 90-14469

Information on photo: 17000.71

318949.0040 woman next to Remington typewriter, undated

Notes: Card Number: 259

Category: typing study

Copy negative: 90-14463

Job name: Remington Typewriter, Ilion New York

318949.0041 woman next to Remington typewriter., undated

Notes: Card Number: 260

Category: typing study

Copy negative: 90-14448

Information on photo: 16132

Job name: Remington Typewriter, Ilion New York

318949.0042 woman next to Remington typewriter, undated

Notes: Card Number: 261

Category: typing study

Copy negative: 90-14466

Job name: Remington Typewriter, Ilion New York

318949.0043 two women next to Remington typewriter: Anna Gold is on the left, and Hortense Stollnitz is on the right., 1916

Notes: Card Number: 262

Category: typing study

Collection: NMAH

Copy negative: 90-14465

Gilbreth image: 16173

Information on photo: 16173

Job name: Remington Typewriter, Ilion, NY

Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson: 16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart

operators who cannot get over the 125 mark because they learn the wrong motions first of moving the elbow forward and back instead of the fingers.16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.16180.N. Micromotion studies of champion of the world typists. This work was done in our laboratory in 1916.16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures were taken. Her gold medal can be seen in her left hand in #16245.16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross.16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.16249A Miss Stollnitz and her gold medal, as Champion Amateur of the world.16249K Miss Stollnitz and her gold medal, for becoming International Champion of the World. [in 1916.]Miss Anna Gold with her gold medal which she received fro becoming International Champion in September 1916.GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916,- and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Location of subject: Gilbreth motion study laboratory, Providence, RI

Subject names: Anna Gold; Hortense Stollnitz

318949.0044 woman next to Remington typewriter., undated

Notes: Card Number: 263
Category: typing study
Collection: NMAH
Copy negative: 90-14462
Information on photo: 16168
Job name: Remington Typewriter, Ilion New York

318949.0045 woman next to Remington typewriter, undated

Notes: Card Number: 264
Category: typing study
Copy negative: 90-14461
Job name: Remington Typewriter, Ilion New York

318949.0046 woman next to Remington typewriter., undated

Notes: Card Number: 265
Category: typing study
Copy negative: 90-14452
Information on photo: 16132
Job name: Remington Typewriter, Ilion New York

318949.0047 Woman (Hortense Stollnitz) next to Remington typewriter., 1916

Notes: Card Number: 266
Category: typing study
Collection: NMAH
Copy negative: 90-14451
Gilbreth image: 16167
Information on photo: 16167
Job name: Remington Typewriter, Ilion New York
Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson: The subject is Hortense Stollnitz.

16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart operators who cannot get over the 125 mark because they learn the wrong motions first of moving the elbow forward and back instead of the fingers.

16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.

16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures

were taken. Her gold medal can be seen in her left hand in #16245.

16213 Mr. P.L. Waters teaching the World's Champion Amateur Typist in Gilbreth Laboratory, 1916. Gross number of words per minute from strange copy, 147. Net number of words per minute (after penalizing, 5 words for each and every mistake, 137 words per minute. This gross is 5 words more than ever known before and the net is equal to the best professional record.

16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross.

16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16249A Miss Stollnitz and her gold medal, as Champion Amateur of the world.

16249K Miss Stollnitz and her gold medal, for becoming International Champion of the World. [in 1916.] Miss Anna Gold with her gold medal which she received fro becoming International Champion in September 1916.

GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916, and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Location of subject: Gilbreth motion study laboratory, Providence RI

Subject names: Hortense Stollnitz

318949.0048 Cyclegraph of woman (Anna Gold) changing paper in a typewriter., 1916

Notes: Card Number: 267
Category: typing study
Collection: NMAH
Copy negative: 90-14459
Gilbreth image: 1703
Information on photo: 1703
Job name: Remington Typewriter, Ilion New York
Original caption: 1703 Miss Gold changes paper. [NB: this documents the "old way" of changing paper.]
Related captions: The following courtesy of Dave Ferguson, via Purdue :1703 Miss Gold changes paper.1704 Miss Gold changes paper.1705 Miss Gold changes paper.1706 Miss Gold changes paper.1707 Miss Gold changes paper.1708 Miss Gold changes paper. She is to continue writing until Mr. Gilbreth says stop.1709 Miss Gold changes paper. Uses her own way. In this picture the light is on the thumb of the right hand. In others it is on the forefinger of the right hand.1710 Miss Gold changes paper. Does it her own way.1711 Miss Gold changes paper. Does it new way.1712 Miss Gold changes paper. Does it new way.
Location of subject: Gilbreth Motion Study Laboratory, Providence, RI
Subject names: Anna Gold

318949.0049 unidentified machinery, undated

Notes: Card Number: 84
Category: misc./pure cyclegraphs or unidentified study
Copy negative: 90-14449
Information on photo: 230.106

318949.0050 Two sewing machines (handkerchief factory?), undated

Notes: Card Number: 167
Category: needle trade study
Copy negative: 92-7940
Information on photo: 1700.157

318949.0051 Peerless belt lacing machine, undated

Notes: Card Number: 672
Category: misc./pure cyclegraphs or unidentified study
Copy negative: 90-14447

318949.0052 Seated female at time stamp (?). Two motion clocks visible in foreground, undated

Notes: Card Number: 270

Category: Unidentified study
Copy negative: 92-7927
Information on photo: 5.XII.14T313

318949.0053 Table with drill bits and unidentified tools in a machine shop. Three motion clocks visible., 5/7/2021
Notes: Card Number: 11
Category: machine shop study
Copy negative: 92-7937
Information in photo: 5/7/2021
Information on photo: 210.29

318949.0054 Metal parts on gridded table with hammer, vise, and wrenches. Three motion clocks visible, 24-Jun-19
Notes: Card Number: 21
Category: Unidentified study
Copy negative: 92-7945
Information on photo: 14967-1-19

318949.0055 Male setting up unidentified objects on cart. Motion clock visible., undated
Notes: Card Number: 587
Category: Unidentified study
Copy negative: 92-7932
Information in photo: 1809
Information on photo: EF677

318949.0056 Female worker seated on Gilbreth chair at inclined table in front of gridded walls., undated
Notes: Card Number: 12
Category: Unidentified study
Copy negative: 92-7935
Information on photo: 200549

318949.0057 Male worker sits at gridded desk in front of gridded background and selects pen from Gilbreth pen holder. Motion clock visible., undated
Notes: Card Number: 205
Category: office study
Copy negative: 92-7941
Information in photo: 16064

318949.0058 Unidentified device and motion clocks sitting on gridded table in front of gridded wall., undated
Notes: Card Number: 157
Category: Unidentified study
Copy negative: 92-7947
Information in photo: 106

Information on photo: 17904 (?)

318949.0059 Female worker seated at table with time stamp (?). Two motion clocks visible., undated

Notes: Card Number: 242
Category: Unidentified study
Copy negative: 92-7933

318949.0060 Specialized scissor on gridded table in front of gridded background., undated

Notes: Card Number: 511
Category: Unidentified study
Copy negative: 92-7924
Information on photo: 17993

318949.0061 One armed male typist seated at small desk in front of gridded background and motion clock. Typewriter is fitted with roll paper feed., 1916

Notes: Card Number: 900
Category: Disabled study; typing study
Collection: NMAH
Copy negative: 92-7936
Gilbreth image: 16268

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine

show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0062 One armed male typist seated at gridded table in front of gridded background and motion clock. Typewriter is fitted with roll paper feed. Frank Gilbreth watches., 1916

Notes:

Card Number: 596

Category: Disabled study; typing study

Collection: NMAH

Copy negative: 92-7938

Gilbreth image: 16265

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and

putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0063 Female worker seated at gridded table in front of gridded walls. Motion clock visible and penetrating screen leaning against wall., undated

Notes: Card Number: 743

Category: Light assembly study

Copy negative: 92-7923

Information in photo: 15??23 ?649

Information on photo: 1700.88

318949.0064 One armed male typist seated at small desk in front of gridded background and motion clock. Typewriter is fitted with roll paper feed., 1916

Notes: Card Number: 800

Category: Disabled study; typing study

Collection: NMAH

Copy negative: 92-7943

Gilbreth image: 16266

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and

putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0065 One armed male typist seated at small desk in front of gridded background and motion clock. Typewriter is fitted with roll paper feed., 1916

Notes: Card Number: 217

Category: Disabled study

Collection: NMAH

Copy negative: 92-7930

Gilbreth image: 16267

Original caption: "16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0066 Female worker with lights for cyclegraph photograph seated at gridded table (adjustable height) in front of gridded background engaged in unidentified work., undated

Notes: Card Number: 44
Category: Light assembly study
Copy negative: 92-7944

318949.0067 Man with crutches kneeling on floor next to a chair in front of a gridded background. Two motion clocks visible, March 1916-December 1917 (dates of Remington contract)

Notes: Card Number: 37
Category: Disabled study--crutches
Collection: NMAH
Copy negative: 92-7939
Gilbreth image: not numbered but almost identical to 17961
Information on photo: 17961
Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).
Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).
See caption for closely related image 17960 (not in NMAH collection): "To pick up anything from the floor he must kneel like this." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98).
see related caption for Gilbreth image (17966), as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally; EHB 10.24.98).
see caption for two images in this series, which are not--so far as I know--in the NMAH collection, but clearly concerning this man and his use of self-designed hooks for dressing. The

images are numbers 17975 and 17973; MAY refer as well to NMAH image accession number 318949.0070 (this NMAH image, depicting the tongs, does not have a Gilbreth number on the image). The caption is as follows: "These [images 17975 and 17973] show the man who has no joints from his neck to his knees except in his arms, and it shows that special tools can be made to accomplish anything, and if this man has become one of the highest paid men in a typewriter factory, then we should use his example in the design of all tools in order to permit the worker to do his work in the One Best Way. I wish particularly to call attention to these two pictures for the reason that some people think that we intend to have all workers use the very same motions. Obviously, this is impossible. Men do no "average" in the plant. There is no such animal as "the average man." Therefore, it is out of the question to consider for a moment the possibility of making all men use the same motions. However, the cost of intensive investigation is so great that it is better to concentrate it on the One Best Way for the typical "average man", and then we will consider individual deviations according to the individual characteristics of the given man at any particular instance. In standardizing the method of putting on one's clothes, we would suppose that the "average man" would not be expected to use tongs for pulling on his trousers and for pulling on his stockings or long hooks for reaching his shoes and pulling them on. Nevertheless, the laws of dependent sequence and such as putting on one's stockings before one puts on one's shoes would apply quite the same to an unusual cripple in the operation of his dressing as it would the case of Beau Brummel. These pictures stand out for all time as being the best example that we know of expecting standard derivations from the One Best Way which has been determined for the average man." (FBG to Professor Frank Watts, October 21, 1921, pg. 5, NF1/0019, vol. II, via Elspeth Brown 10.24.98).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, *Motion Study for the Handicapped*, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. One of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his informities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model

maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0068 One armed male typist seated at small desk in front of gridded background and motion clock. Typewriter is fitted with roll paper feed., 1916

Notes:

Card Number: 232

Category: Disabled study; typing study

Collection: NMAH

Copy negative: 92-7925

Gilbreth image: 16269

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0069 Man with crutches in front of a gridded background. Two motion clocks visible, March 1916-December 1917 (dates of Remington contract)

Notes:

Card Number: 38

Category: Disabled study--crutches

Collection: NMAH

Copy negative: 92-7931

Gilbreth image: 17951?

Information on photo: 17961

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).

See caption for closely related image 17960 (not in NMAH collection): "To pick up anything from the floor he must kneel like this." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98).

see related caption for Gilbreth image (17966), as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally; EHB 10.24.98).

see caption for two images in this series, which are not--so far as I know--in the NMAH collection, but clearly concerning this man and his use of self-designed hooks for dressing. The images are numbers 17975 and 17973; MAY refer as well to NMAH image accession number 318949.0070 (this NMAH image, depicting the tongs, does not have a Gilbreth number on the image). The caption is as follows: "These [images 17975 and 17973] show the man who has no joints from his neck to his knees except in his arms, and it shows that special tools can be made to accomplish anything, and if this man has become one of the highest paid men in a typewriter factory, then we

should use his example in the design of all tools in order to permit the worker to do his work in the One Best Way. I wish particularly to call attention to these two pictures for the reason that some people think that we intend to have all workers use the very same motions. Obviously, this is impossible. Men do no "average" in the plant. There is no such animal as "the average man." Therefore, it is out of the question to consider for a moment the possibility of making all men use the same motions. However, the cost of intensive investigation is so great that it is better to concentrate it on the One Best Way for the typical "average man", and then we will consider individual deviations according to the individual characteristics of the given man at any particular instance. In standardizing the method of putting on one's clothes, we would suppose that the "average man" would not be expected to use tongs for pulling on his trousers and for pulling on his stockings or long hooks for reaching his shoes and pulling them on. Nevertheless, the laws of dependent sequence and such as putting on one's stockings before one puts on one's shoes would apply quite the same to an unusual cripple in the operation of his dressing as it would the case of Beau Brummel. These pictures stand out for all time as being the best example that we know of expecting standard derivations from the One Best Way which has been determined for the average man." (FBG to Professor Frank Watts, October 21, 1921, pg. 5, NF1/0019, vol. II, via Elspeth Brown 10.24.98).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. One of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his informities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0070 Man with crutches in front of a gridded background. Unidentified objects in his hands. Two motion clocks visible.[note: I think these objects

are tongs used for undressing--ehb, 10.24.98]., March 1916-December 1917
(dates of Remington contract)

Notes:

Card Number: 494

Category: Disabled study--crutches

Collection: NMAH

Copy negative: 92-7942

Gilbreth image: 17973--not numbered on image, but caption suggests this

Information on photo: 17961

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).

See caption for closely related image 17960 (not in NMAH collection): "To pick up anything from the floor he must kneel like this." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98).

see related caption for Gilbreth image (17966), as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally; EHB 10.24.98).

see caption for two images in this series, which are not--so far as I know--in the NMAH collection, but clearly concerning this man and his use of self-designed hooks for dressing. The images are numbers 17975 and 17973; MAY refer as well to NMAH image accession number 318949.0070 (this NMAH image, depicting the tongs, does not have a Gilbreth number on the image). The caption is as follows: "These [images 17975 and 17973] show the man who has no joints from his neck to his knees except in his arms, and it shows that special tools can be made to accomplish anything, and if this man has become one of the highest paid men in a typewriter factory, then we

should use his example in the design of all tools in order to permit the worker to do his work in the One Best Way. I wish particularly to call attention to these two pictures for the reason that some people think that we intend to have all workers use the very same motions. Obviously, this is impossible. Men do no "average" in the plant. There is no such animal as "the average man." Therefore, it is out of the question to consider for a moment the possibility of making all men use the same motions. However, the cost of intensive investigation is so great that it is better to concentrate it on the One Best Way for the typical "average man", and then we will consider individual deviations according to the individual characteristics of the given man at any particular instance. In standardizing the method of putting on one's clothes, we would suppose that the "average man" would not be expected to use tongs for pulling on his trousers and for pulling on his stockings or long hooks for reaching his shoes and pulling them on. Nevertheless, the laws of dependent sequence and such as putting on one's stockings before one puts on one's shoes would apply quite the same to an unusual cripple in the operation of his dressing as it would the case of Beau Brummel. These pictures stand out for all time as being the best example that we know of expecting standard derivations from the One Best Way which has been determined for the average man." (FBG to Professor Frank Watts, October 21, 1921, pg. 5, NF1/0019, vol. II, via Elspeth Brown 10.24.98).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. One of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his informities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0071 Metal parts on gridded table with hammer, vise, and wrenches. Three motion clocks visible. Sign reads ?? on card 4th operation, 24-Jun-19
Notes: Card Number: 20

Category: Unidentified study
Copy negative: 92-7934
Information on photo: 14917-1-19

318949.0072 Metal parts on gridded table with hammer, tap, and wrenches.
Two motion clocks visible. Sign reads 2 ton card., 5/21/2019

Notes: Card Number: 22
Category: Unidentified study
Copy negative: 92-7928
Information in photo: 5-21-191357
Information on photo: 13575-21-19

318949.0073 Female shoe worker at gridded table in front of gridded background. Male scientific manager (?) watches. Two motion clocks visible., undated

Notes: Card Number: 458
Category: Shoe making study
Copy negative: 92-7929
Information in photo: 121
Information on photo: 17356

318949.0074 women at gridded table in front of gridded screen, surrounded by motion picture lights. Two Gilbreth motion clocks visible. Women is gluing shoe soles (?) or some type of light assemble work., undated

Notes: Card Number: 472
Category: Shoe making study
Copy negative: 92-13401
Information on photo: 17352

318949.0075 Female shoe worker at gridded table in front of gridded screen, surrounded by motion picture lights and scientific manager watching. Two Gilbreth motion clocks visible. Women is a shoe working, gluing soles (?) or lasting (?), undated

Notes: Card Number: 55
Category: Shoe making study
Copy negative: 92-13412
Information in photo: 121
Information on photo: 17340

318949.0076 Metal parts on gridded table with hammer, vise, and wrenches., 24-Jun-19

Notes: Card Number: 19
Category: Unidentified study
Copy negative: 92-13413
Information on photo: 14967-1-19

318949.0077 Cyclegraph of male drill press operator at New England Butt Co. Motion clocks visible, undated

Notes: Card Number: 656
Category: machine shop study
Copy negative: 92-13400
Information on photo: 610-C-226
Job name: New England Butt Company
Job number: 610

318949.0078 A print of a section of motion picture film. In three parallel tracks a male worker preforms some type of office (?) work. Two motion clocks visible., undated

Notes: Card Number: 652
Category: office study
Copy negative: 92-13415

318949.0079 Cyclegraph equipment sitting on table., 1915

Notes: Card Number: 29
Category: Motion study equipment
Copy negative: 92-13408
Information in photo: 3734.II
Information on photo: T3734.II.15

318949.0080 Female worker doing unidentified job seated at a table with two males watching. Woman is behind penetrating screen, two motion clocks are visible. Motion picture camera (?) mounted on high table., undated

Notes: Card Number: 27
Category: Unidentified study
Copy negative: 92-13411
Information on photo: 17652A

318949.0081 Female shoe worker at gridded table in front of gridded screen, surrounded by motion picture lights. A motion picture camera is in the foreground and a scienitific manager is standing next to her. The woman is gluing shoe soles (?) or some type of lasting work., undated

Notes: Card Number: 474
Category: Shoe making study
Copy negative: 92-13410
Information in photo: 123
Information on photo: 17355

318949.0082 Cyclegraph equipment sitting on a table., 1915

Notes: Card Number: 28
Category: Motion study equipment
Copy negative: 92-13414
Information in photo: 3724.II
Information on photo: 4.11.15T372

318949.0083 Two males sit in office filled with motion study clocks and other equipment, undated

Notes: Card Number: 196
Category: business and apparatus of motion study
Copy negative: 92-13409
Information on photo: GL139Dup

318949.0084 A print of a section of motion picture film. In three parallel tracks a male worker preforms some type of office (?) work. Two motion clocks visible., undated

Notes: Card Number: 651
Category: office study
Copy negative: 92-13405

318949.0085 Female worker seated at table with time stamp (?). Two motion clocks visible., undated

Notes: Card Number: 241
Category: Unidentified study
Copy negative: 92-13403

318949.0086 Male worker seated at inclined table. Motion clocks visible, 4/5/2021

Notes: Card Number: 26
Category: unidentified study
Copy negative: 92-13402
Information on photo: 210.242

318949.0087 Female worker seated at table with time stamp (?). Two motion clocks visible., undated

Notes: Card Number: 248
Category: unidentified study
Copy negative: 92-13416
Information on photo: 5. XII. 14T312

318949.0088 Female office worker at grided and numbered stand-up desk. Back of desk has row of files, motion clocks off to one side., undated

Notes: Card Number: 316
Category: office study
Copy negative: 92-13404
Information on photo: EF142

318949.0089 Cyclegraph on gridded table top. Frank Gilbreth looks on from side. Stereo camera (?) visible in front of table, motion clocks off to one side., undated

Notes: Card Number: 468
Category: Unidentified study
Copy negative: 92-13407

318949.0090 Cyclegraph of female worker doing unidentified work on a gridded desk. Male manager type watching in background. Cyclegraph machinery visible on desk., undated

Notes: Card Number: 314
Category: office study
Copy negative: 92-13417
Information on photo: T168

318949.0091 cyclegraph of a machine shop, undated

Notes: Card Number: 464
Category: machine shop study
Copy negative: 92-1341983-2447
Information on photo: 210.255

318949.0092 cyclegraph of female worker turning pages or interleaving (?) the pages of a book., undated

Notes: Card Number: 313
Category: Office study
Copy negative: 92-13406
Information on photo: GL123

318949.0093 Motion study room (?). Attic space filled with equipment including motion picture camera, gridded wall/doors in background., undated

Notes: Card Number: 768
Category: Motion study equipment
Copy negative: 92-1392492-13424 reversed
Information on photo: 610 G29

318949.0094 Motion study set-up. Female seated at table behind penetrating screen. One male is operating a motion picture camera (?). Lights and other equipment visible. Two motion clocks visible, undated

Notes: Card Number: 11
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 92-14213
Information on photo: 17653.A

318949.0095 Motion study set-up. Female seated at table behind penetrating screen. One male is standing next to her point to something. Another male watches. Visible are a motion picture camera (?), two motion clocks, and other equipment., undated

Notes: Card Number: 105
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 92-14215
Gilbreth image: 17652A
Information on photo: 17652A

318949.0096 Female seated at table in front of gridded background and behind penetrating screen. She is surrounded by five males and a female in a polka dot dress. Motion picture camera (?) is visible on studio tripod., undated

Notes: Card Number: 38
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 92-14221
Gilbreth image: 17000-14
Information on photo: 17000-14

318949.0097 Motion study set-up. Female seated at table behind penetrating screen. Two males watch on. Two motion clocks, lights, motion picture camera, and other equipment visible., undated

Notes: Card Number: 3
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 92-14212
Gilbreth image: 17658
Information on photo: 17658

318949.0098 Gridded table with two motion clocks and an unidentified pieces of apparatus in front of a gridded background., undated

Notes: Card Number: 4
Category: business and apparatus of motion study
Copy negative: 92-14211
Gilbreth image: 17304
Information on photo: 17304

318949.0099 Chronocyclegraph of female seated at gridded table in front of gridded background doing unidentified assembly. Her feet rest on a curved Gilbreth foot rest. Three motion clocks are visible., undated

Notes: Card Number: 36
Category: light assembly study
Copy negative: 92-14210
Information in photo: 7

318949.0100, Man with crutches kneeling on floor next to a chair in front of a gridded background. Two motion clocks visible, March 1916-December 1917 (dates of Remington contract)

Notes: Card Number: 36
Category: Disabled study--crutches
Copy negative: 92-13421
Gilbreth image: 17961
Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).
Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As

the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).

See caption for closely related image 17960 (not in NMAH collection): "To pick up anything from the floor he must kneel like this." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98).

see related caption for Gilbreth image (17966), as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally; EHB 10.24.98).

see caption for two images in this series, which are not--so far as I know--in the NMAH collection, but clearly concerning this man and his use of self-designed hooks for dressing. The images are numbers 17975 and 17973; MAY refer as well to NMAH image accession number 318949.0070 (this NMAH image, depicting the tongs, does not have a Gilbreth number on the image). The caption is as follows: "These [images 17975 and 17973] show the man who has no joints from his neck to his knees except in his arms, and it shows that special tools can be made to accomplish anything, and if this man has become one of the highest paid men in a typewriter factory, then we should use his example in the design of all tools in order to permit the worker to do his work in the One Best Way. I wish particularly to call attention to these two pictures for the reason that some people think that we intend to have all workers use the very same motions. Obviously, this is impossible. Men do no "average" in the plant. There is no such animal as "the average man." Therefore, it is out of the question to consider for a moment the possibility of making all men use the same motions. However, the cost of intensive investigation is so great that it is better to concentrate it on the One Best Way for the typical "average man", and then we will consider individual deviations according to the individual characteristics of the given man at any particular instance. In standardizing the method of putting on one's clothes, we would suppose that the "average man" would not be expected to use tongs for pulling on his trousers and for pulling on his stockings or long hooks for

reaching his shoes and pulling them on. Nevertheless, the laws of dependent sequence and such as putting on one's stockings before one puts on one's shoes would apply quite the same to an unusual cripple in the operation of his dressing as it would the case of Beau Brummel. These pictures stand out for all time as being the best example that we know of expecting standard derivations from the One Best Way which has been determined for the average man." (FBG to Professor Frank Watts, October 21, 1921, pg. 5, NF1/0019, vol. II, via Elspeth Brown 10.24.98).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. One of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his infirmities, he is to-day one of the most highly waged mechanics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0101 Man on crutches in front of gridded background doing light assembly work at bench in back of penetrating screen. Two motion clocks and a motion picture camera are visible., March 1916-December 1917 (dates of Remington contract)

Notes:

Card Number: 34

Category: Disabled study--crutches

Collection: NMAH

Copy negative: 92-13420

Gilbreth image: 17962

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to

his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).

Caption for 17956, closely related image: "Working either sitting or standing at his work bench." (FBG; from Purdue, NFile 1/0019 vol. III, via EHB). see caption for two images in this series, which are not--so far as I know--in the NMAH collection, but clearly concerning this man and his use of self-designed hooks for dressing (not visible in this specific image). The images are numbers 17975 and 17973; MAY refer as well to NMAH image accession number 318949.0070 (this NMAH image, depicting the tongs, does not have a Gilbreth number on the image). The caption is as follows: "These [images 17975 and 17973] show the man who has no joints from his neck to his knees except in his arms, and it shows that special tools can be made to accomplish anything, and if this man has become one of the highest paid men in a typewriter factory, then we should use his example in the design of all tools in order to permit the worker to do his work in the One Best Way. I wish particularly to call attention to these two pictures for the reason that some people think that we intend to have all workers use the very same motions. Obviously, this is impossible. Men do no "average" in the plant. There is no such animal as "the average man." Therefore, it is out of the question to consider for a moment the possibility of making all men use the same motions. However, the cost of intensive investigation is so great that it is better to concentrate it on the One Best Way for the typical "average man", and then we will consider individual deviations according to the individual characteristics of the given man at any particular instsnace. In standardizing the method of putting on one's clothes, we would suppose that the "average man" would not be expected to use tongs for pulling on his trousers and for pulling on his stockings or long hooks for reaching his shoes and pulling them on. Nevertheless, the laws of dependent sequence and such as putting on one's stockings before one puts on one's shoes would apply quite the same to an unusual cripple in the operation of his dressing as it would the case of Beau Brummel. These pictures stand out for all time as being the best example that we know of expecting standard derivations from the One Best Way which has been determined for the average man." (FBG to Professor Frank Watts, October 21, 1921, pg. 5, NF1/0019, vol. II, via Elspeth Brown 10.24.98).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A

Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. One of the latter, when reversed, is used to push off his boots, stockings, etc. In spite of his infirmities, he is to-day one of the most highly waged mechanics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pulling on his shoes, and tongs for pulling on his trousers, etc. He has learned two trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0102 Man (Mr. Case) on crutches in front of gridded background. Two motion clocks visible., March 1916-December 1917 (dates of Remington contract)

Notes:

Card Number: 33

Category: disabled study

Collection: NMAH

Copy negative: 92-13423

Gilbreth image: 17954

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See also caption for 17972 (not in NMAH collection) but quite relevant here: "This picture shows Mr. Case's usual walking attitude. Note that the crutch of the right arm does not come up under the shoulder but terminates in a ring mounted on trunnions

which enables him to do his work in a standing position and carry his crutch to whatever place his arm reaches. Otherwise an ordinary crutch would fall to the floor when he made free use of his arm. The other, held in the left hand, is pointed at its upper end and he uses it for pushing off his shoes and stockings." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See caption for a related image (17968): "Remarkable crutches for walking. None needed for standing. Using the arms does not necessitate dropping the crutches." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98). The caption for a related image of this subject (17966) is as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." Also, a related caption for the same subject, (17973), is as follows: Dressing comes under the Motion Study laws of assembling. This man has designed and built for himself long handle tongs for putting on his underclothes, stockings, and trousers. He has also designed and built for himself special long handled hooks for putting on his shoes. He had to consider the motions of undressing and dressing. If you will see the motions that you take to undress yourself, you will be much surprised at what you can do to reduce the time of dressing and undressing. You should at first dress as usual, and see how long it takes you. You should then see what can be done by merely arranging all of your clothes, 1, in an obvious sequence, 2, within easy reach, 3, pre-positioned for easiest grasp, 4, arranged for ease [sic] positioning. Count every motion, and make each motion count. With a little practice you can cut your time in halves without any speeding up." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally). see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, *Motion Study for the Handicapped*, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. ne of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his infirmities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model

maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0103 Female worker seated at gridded table doing unidentified light assembly work. Two males watch., undated

Notes: Card Number: 25
Category: Light assembly study
Copy negative: 92-13422
Information in photo: 153
Information on photo: 1900.86

318949.0104 Gridded talbe with vise and assorted parts and tools. Gridded wall in background, undated

Notes: Card Number: 754
Category: Unidentified study
Copy negative: 92-13418
Information in photo: 22330 649
Information on photo: 1709.31

318949.0105 Seated female at gridded table in front of gridded background. On the table are three motion clocks, a hammer, a board, a block, and unidentified small parts., undated

Notes: Card Number: 417
Category: light assembly study
Copy negative: 92-14219
Information in photo: 22649

318949.0106 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 491
Category: rubber stamping study
Copy negative: 92-14218
Gilbreth image: see 1700.98
Information in photo: 172649

318949.0107 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 490
Category: rubber stamping study
Copy negative: 92-14217
Gilbreth image: 1700.98
Information in photo: 162649
Information on photo: 1700.98

Box 3

318949.0108, Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible.

318949.0109 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 488
Category: rubber stamping study
Copy negative: 92-14223
Gilbreth image: see 1700.112
Information in photo: 167649

318949.0110 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 487
Category: rubber stamping study
Copy negative: 92-14222
Gilbreth image: 1700.112
Information in photo: 170649
Information on photo: 1700.112

318949.0111 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 486
Category: rubber stamping study
Copy negative: 92-14214
Information in photo: 175649

318949.0112 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 484
Category: rubber stamping study
Copy negative: 92-14225
Information in photo: 169649

318949.0113 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 485
Category: rubber stamping study
Copy negative: 92-14224
Information in photo: 168649

318949.0114 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 483
Category: rubber stamping study
Copy negative: 92-14220

Information in photo: 173649

318949.0115 Desk with in/out boxes (Germany), undated

Notes: Card Number: 270
Category: office study
Copy negative: 89-11399

318949.0116 Cyclegraph of woman doing light assembly work (staking buttons). Three motion clocks visible., 8/23/1917

Notes: Card Number: 728
Category: Light assembly study
Copy negative: 89-1425283-3180
Information in photo: 8/23/2017
Information on photo: A.17643

318949.0117 Cyclegraph of woman doing light assembly work (staking buttons). Three motion clocks visible she sits in front of a Gilbreth penetrating screen., 8/23/1917

Notes: Card Number: 186
Category: Light assembly study
Copy negative: 89-14251
Information in photo: 8/23/17staking ??key
Information on photo: 17644.A

318949.0118 office storeroom (?) Germany, 11/9/1914

Notes: Card Number: 273
Category: office study
Copy negative: 89-11398
Information in photo: Gilbreth day mon 1914 9x11 260
Job name: Auer?

318949.0119 office storeroom (?). Germany., 9/11/1914

Notes: Card Number: 274
Category: office study
Copy negative: 89-11387
Information in photo: 9XII T264
Job name: Auer?

318949.0120, room with long tables and sinks along one wall., 2/7/1919

Notes: Card Number: 265
Category: factories - interiors & exteriors & machinery
Copy negative: 89-11397
Information in photo: 512-7-19

318949.0121 room with production control (?) board, undated

Notes: Card Number: 530
Category: office study

Copy negative: 89-11400
Information on photo: 200.012

318949.0122 office, Germany, undated
Notes: Card Number: 277
Category: office study
Copy negative: 89-11388
Information in photo: office of Herrn Waegner
Information on photo: T69

318949.0123 gridded desk, (Germany?), undated
Notes: Card Number: 376
Category: office study
Copy negative: 89-11393
Information on photo: T61

318949.0124 office with long paper list hanging from wall, undated
Notes: Card Number: 377
Category: office study
Copy negative: 89-11395
Information on photo: 210.396

318949.0125 Desk and chair in large office. Photograph is taken from a low angle and is of poor quality. Germany, undated
Notes: Card Number: 280
Category: office study
Copy negative: 89-11394
Information on photo: T124

318949.0126 gridded desk, same as 89-11389, (Germany?), undated
Notes: Card Number: 379
Category: office study
Copy negative: 89-11390

318949.0127 office with gridded desk, undated
Notes: Card Number: 282
Category: office study
Copy negative: 89-11379
Information on photo: T251

318949.0128 office storeroom (?). Chalk board that appears in many of the photos says on top Gilbreth Day Mon 1914 Germany, 11/9/1914
Notes: Card Number: 283
Category: office study
Copy negative: 89-11396
Information in photo: 9XII 264

318949.0129 pen and ink holder, 12 colors noted., undated
Notes: Card Number: 284
Category: office study
Copy negative: 89-11380
Information on photo: 240,004

318949.0130 drafting table with rack and rollers behind., undated
Notes: Card Number: 538
Category: office study
Copy negative: 89-11402
Information in photo: 641-18
Information on photo: 17022

318949.0131 office/workroom (?), Germany, 3/9/1915
Notes: Card Number: 539
Category: office study
Copy negative: 89-11401
Information in photo: 411.9.III
Information on photo: T4119.III.15

318949.0132 office with long paper lists hanging from wall, table has typewriter, dictaphone, and many chairs, undated
Notes: Card Number: 482
Category: office study
Copy negative: 89-11392 xxxxxxxxxxxx93-7919
Information on photo: 210,411

318949.0133 Gridded desk. Time card rack visible in background, undated
Notes: Card Number: 127
Category: office study
Copy negative: 89-11381

318949.0134 gridded desk, undated
Notes: Card Number: 289
Category: office study
Copy negative: 89-11389
Information on photo: 13.XI.14T125

318949.0135 office with a gridded desk. Stop watch hangs from calendar on desk., Jun-14
Notes: Card Number: 290
Category: office study
Copy negative: 89-11382

318949.0136 man working at large upright drafting table. Frank Gilbreth (?) and another man sitting at a desk., undated
Notes: Card Number: 545

Category: office study

Copy negative: 89-11386

318949.0137, Six Women at desks typing, man in background watching,
undated

Notes:

Card Number: 292

Category: office study

Copy negative: 89-11378

Information on photo: EF730 (?)

318949.0138 large office with gridded desks and cubby holes for papers.,
undated

Notes:

Card Number: 293

Category: office study

Copy negative: 89-11385

318949.0139 large office with many gridded desks. Taylor card filer (flying
machine) visible in upper left., undated

Notes:

Card Number: 548

Category: office study

Copy negative: 89-11384

Information on photo: Frank B Gilbreth

318949.0140 Desk study, detail of grided desk top with pencil, pen, and paper
clip holder, undated

Notes:

Card Number: 288

Category: office study

Copy negative: 89-11383

Information on photo: 1700016

318949.0141 routing (?) office, desk with time stamp and production control
board on wall, undated

Notes:

Card Number: 394

Category: office study

Copy negative: 89-11392

318949.0142 Male worker at gridded table using calculator. Two Gilbreth
motion clocks visible. Gridded background., undated

Notes:

Card Number: 848

Category: office study

Copy negative: 89-1272

Information in photo: 16076

318949.0143 woman, Miss Margaret Owen, typing in front of gridded
background, three motion clocks visible., April 1916, est.

Notes:

Card Number: 849

Category: typing study

Collection: NMAH

Copy negative: 89-1270

Gilbreth image: GL425

Information on photo: GL425

Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3:

GL-426 "This picture and many that will follow it will show the trend in America to-day toward the discovery of the one best way to do work. This picture is a motion study laboratory where there is special investigation going on to find information regarding key-stroke and finger-stroke machines, such as monotype adding machine, typewriter, stenotype and other similar machines. In some of the cases the lights are very close to the worker as in GL-426 because a very large number of pictures per second are being photographed."

GL-427 "Path of left hand returning the carriage of a typewriter, carriage-return hook of which is on the left end of the carriage."

GL-428 "Testing the tests for the scientific selection of workers. After making tests which were supposed to be of value for selecting candidates for intensive training to become champions in typing, we submitted the tests to the people who had been champions. The woman in this picture was the champion of the world. Note that the clock shows the time of exposure of the picture, in that the blur on the hands records the time that the shutter was opened, or in other words, the shutter was open in this picture about thirty nine two thousandths of a minute, each division on the clock being half a thousandth of a minute."

"This is a picture of a former champion typist of the world showing her position on a typewriter. At least her idea of her position on a typewriter and here is a remarkable fact that of the many thousand motion pictures taken of this young lady, not a single solitary frame shows any picture anything like the one that she has posed thinking that it was the way that she actually held her hands during her typewriting. In other words this is another fine illustration of the fact that even the expert demonstrator does not know what motion he or she uses and that the methods and motions taught to the beginner at demonstration are actually used by the expert himself during his regular practice. Therefore the entire method of teaching in our trades is wrong and that the only way to teach at demonstration speed the real motions and real methods of the expert is to take the picture very fast and project them very slow, thus slowing down the expert operator with his real motions to a speed that can be seen by the learner."

"A world champion demonstrating slowly the position which she thinks her hands are in when operating at full speed. Thousands of micromotion pictures of her at full speed show no position like this. This is one more proof that fast motions and slow motions

are not alike and that no one can correctly demonstrate slowly the motions that they make at the full speed of actual practice."

Location of subject: Gilbreth Motion Study Laboratory, Providence RI

Subject names: Miss Margaret Owen, champion professional typist for Underwood

318949.0144 one armed man typing. Typewriter fitted with roll feed paper. Motion clock and grid in background., 1916

Notes:

Card Number: 397

Category: Disabled study; typing study

Collection: NMAH

Copy negative: 89-1257

Gilbreth image: 16269

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a weeks supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0145 Woman, Miss Maragaret Owen of Underwood Typewriter, seated at typewriter surrounded by movie lights. Frank Gilbreth on right, motion clock on left., 1916, April c.

Notes:

Card Number: 649

Category: typing study

Collection: NMAH

Copy negative: 89-1275

Gilbreth image: GL 413

Information on photo: GL 413

Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. Note that some of the captions reference a cyclegraph; this image, GL413, is not a cyclegraph.

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"The use of micromotion and chronocyclegraph in machine design. This shows the path of the left hand returning the carriage of a well known make of typewriter. The operator being a world champion."

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Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Miss Maragaret Owen of Underwood Typewriter; Frank Gilbreth

318949.0146 Man smoking a pipe seated at a desk measuring a large planer chip, woman in front of typewriter in background. Dictaphone to his right and Gilbreth pencil and pen organizer in foreground., undated

Notes: Card Number: 852

Category: machine shop study

Copy negative: 81-13991

Information on photo: 210.221

318949.0147 soldier in battle dress walking down a plank with a civilian watching., undated

Notes: Card Number: 264
Category: Military study
Copy negative: 89-1267
Information on photo: 18136

318949.0148 five men in an office, four in military garb. Gilbreth (?) in military dress visible in one frame., undated

Notes: Card Number: 556
Category: military study
Copy negative: 89-1258
Information on photo: 17000.46

318949.0149 machine gun disassembled on gridded table, undated

Notes: Card Number: 557
Category: military study
Copy negative: 89-1259
Information on photo: 18004

318949.0150 three men in back of gridded table with machine gun., undated

Notes: Card Number: 558
Category: military study
Copy negative: 89-1260
Information on photo: 18001

318949.0151 eight men in a life boat, taken from overhead, undated

Notes: Card Number: 559
Category: military study
Copy negative: 89-1263

318949.0152 Seven Gilbreth children lined up with hands on shoulders of each other. Taken in Moller summer cottage Inverness Wildwood., Jul-17

Notes: Card Number: 561
Category: Gilbreth Family
Copy negative: 88-1794988-17949A
Location of subject: Inverness, CA
Right to left; Winnifred Brown, Anne Gilbreth, Ernestine Gilbreth, Martha Gilbreth, Everett Brown, Frank Gilbreth Jr., Jean Brown. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: (and this might conflict with the above): "Photo taken in Inverness, CA, at Moller grandparents' summerhouse. Probably in 1917 when Lillian took the children to California. From left: Lill (who was three in 1917); Bill (4 1/2); Frank (6); Martha (7 1/2); Ernestine (9); ???; and at the end, Anne, age 12.

[see below for Ernestine's conflicting ID]. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: [and these remarks conflict with Jane's ID, above]: Taken at Inverness, Marin County CA, Gilbreth and Brown children (cousins on Moller side of family. Left to right: Jean Brown [whom Dave Ferguson has met]; Bill G.; Frank G.; Martha G.; Ernestine G.; Anne G.; and Winnie Brown.

318949.0153 Frank Gilbreth seated at gridded table. Stereo camera set up to photograph him., undated

Notes: Card Number: 616
Category: Frank B. Gilbreth
Copy negative: 88-1795088-17950A

318949.0154 Lillian Gilbreth with three children seated on grass. Left to right Ernestine, Lillian Sr., Frank Jr., Anne In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: taken after Mary dies [1912?]-left to right Ernestine, LMG; Frank Jr., Anne. Taken at seashore in RI--possibly Buttonwoods., undated

Notes: Card Number: 766
Category: Gilbreth Family
Copy negative: 88-1795188-17951A
Location of subject: Buttonwoods, RI

318949.0155 Three children seated at dinner table. Left to right Carol Cross, Frank Jr., Ernestine. Small table set up in playroom on second floor while kids had the measles. People in photo identified by Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: to the left, Carol Cross (cousin); small child in middle, Martha Gilbreth (Lancaster thinks); child at right, Ernestine Gilbreth. Lancaster reports that Ernestine Gilbreth told her that the young woman was her cousin Carol Cross. For further comment, see acc. # 318949.9224. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: "Providence playroom 2nd floor. Carol Cross (Anne's daughter); Frank Jr. in middle; Ernestine at right.", undated

Notes: Card Number: 653
Category: Gilbreth Family
Copy negative: 88-1795288-17952A
Location of subject: Providence, RI 77 Brown St.

318949.0156 Two children on a swing Nantucket at the Shoe. Left to right hired man Tom, Bill and Frank on swing. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Tom Greaves, at far left, and Nan, c. 1919. Dave elaborates with Ernestine: "At 'The Shoe' on Nantucket. c. 1919. On left is Tom Grieves, their hired man (handyman?) [one of the few shots of Tom, mentioned often in

Belles on their Toes.] Lighthouse (tower) smaller of the two (Mic and Cyc)--this one is Mic [pronounced "Mike"]., 1919

Notes:

Card Number: 567

Category: Gilbreth Family

Copy negative: 88-1795388-17953A

Gilbreth image: 19713

Information on photo: 19713

Related captions: This caption is for an image of 19737, an image that I have not seen but which sounds like it may have been taken on this trip to Nantucket?? given the image number. Experiments of picking blue berries, huckleberries and cranberries with children of various ages and with professional cranberry pickers. The results of these experiments showed that it would certainly be easy to enable them to pick five times as many berries with the same effort in the same length of time. Now, berry picking is one of the first things that man has ever done, and yet the One Best Way has not yet been discovered by the drifting process, showing that if the bricklayer, the cotton picker and the berry picker have not found the One Best Way in the last 500, 000 years it is fair to presume that the work must be done by the methods of the laboratory and by the drifting process. The scale cage here is for the purpose of the directions and locations and speed of motions, because with the clock and the scale cage, which permits the cross sectioned back ground to be put in at any time, all the information necessary regarding the path and speed of motions can be determined.

318949.0157 automobiles being assembled., 2/20/1919

Notes:

Card Number: 717

Category: Automobile assembly study

Copy negative: 89-1276 (?)

Information in photo: 386

Information on photo: 3952/20/19

318949.0158 automobiles being assembled (same as 318949.0157)., 2/20/1919

Notes:

Card Number: 718

Category: automobile assembly study

Copy negative: 89-1276 (?)

Information on photo: 3952/20/19

318949.0159 Automobile frames stacked up in factory., 3/14/1919

Notes:

Card Number: 719

Category: Automobile assembly study

Copy negative: 89-1261

Information on photo: 9353/14/19

318949.0160 Automobiles being assembled, 3/6/1919

Notes:

Card Number: 720

Category: Automobile assembly study

Copy negative: 89-1268

Information in photo: 783

Information on photo: 6/19/7833

318949.0161 Car with thirteen people in it (Foolish carriage?), undated

Notes: Card Number: 775

Category: Gilbreth Family

Copy negative: 89-12396

Information on photo: 220.157

318949.0162 Entire Gilbreth family in a car Foolish Carriage., 1922 -1923

Notes: Card Number: 776

Category: Gilbreth Family

Copy negative: 89-12395

Information on photo: 220.154

Location of subject: Montclair, NJ

318949.0163 Workers assembling automobile frames., 3/15/1919

Notes: Card Number: 777

Category: Automobile assembly study

Copy negative: 89-126589-12392

Information on photo: 9463/15/19

318949.0164 Automobile factory junk (?) heap., 3/19/1919

Notes: Card Number: 778

Category: Automobile assembly study

Copy negative: 89-12394

Information in photo: 1043

Information on photo: 10433/19/19

318949.0165 Workers assembling automobile frames., 3/15/1919

Notes: Card Number: 779

Category: Automobile assembly study

Copy negative: 89-1239389-1264

Information on photo: 9453/15/19

318949.0166 pile of automobile frames, 3/14/1919

Notes: Card Number: 780

Category: Automobile assembly study

Copy negative: 89-126689-12391

Information on photo: 9343/14/19

318949.0167 Cyclegraph of a person drilling latchhandles on a drill press.

Similar set up to 610-G37--same arm, possibly same subject. One cycle. Note latch handle boxes are at the same height, and looks like both are on the left side, not yet sloped (a later innovation)., 1913

Notes:

Card Number: 238

Category: machine shop study

Collection: NMAH

Copy negative: 80-20583

Gilbreth image: c. 610-G37

Job name: New England Butt Company

Job number: 610

Related captions: "This series started in 1912 [1913?] and continued from time to time until 1915. The original conditions required a fast workman nine and one-half seconds for all the motions necessary to countersink a hole on a latch handle for a braider, and more often the time was fifteen seconds than nine and a half, the best times that we found, being nine and one half seconds, which was eventually reduced to four and one half seconds. The toteboxes were supported by any means whatever without any attempt at standard location, and the piece was usually picked up in the left hand and countersunk, and then passed to the right hand, which threw it on the right hand side, while the left hand proceeded to pick up another piece." Drill Press captions, NFile 1/0019, vol. 1 part 1 of 2, p. 1.

"The adaptation of these cyclegraphs to the work has resulted in some of the most unexpected economies, not the least of which are the direct results of invention, which is suggested as a direct result and also as a byproduct of this method of visualization, analysis, and measurement. In 1913 I took a number of records of different kinds of workmen operating a drill press. The operation consisted of drilling cast iron latch handles for braiders manufactured by the New England Butt Company. The usual thought in connection with such work is that the material should go into one side of the machine and come out the other end. The investigation proved this a mistake, and that instead of having the thought of a continuous straight line moving the thought should be the functionalization of the hands.

"610-G148 is a cyclegraph of an operation on these latch handles. The man is one of the most expert workmen in the entire factory, and his function is that of a teacher. He is also a man who sees that the various machines run at the speed called for by the planning department. BNote in this picture that the portion of the cyclegraph that jumps up in the air is coincident with the dropping of the finished latch handle into the box the line is very wavy, and after it is dropped, the line is quite as straight. The man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, and he has had but one short practice in making decisions, and you will, therefore, notice that the light at the bottom of the cyclegraph, where he picks up the latch handle, shows a mental process similar to the traditional animal between the two bales of hay, and starved to death because he could not decide upon the sequence in which he should eat the bales of hay. Here is apparently great

indecision, although there is no reason whatever for choice. This same indecision is shown in all the pictures of this man taken at this time, but was afterwards completely removed, as is shown in photographs taken of the same man on the same operation a few hours, a few days, and also a year later. Examination of these cycles immediately suggested that the length of motions should be reduced by having a higher table, and such a table was temporarily secured by bolstering up the totebox as shown in 610-G37. Still further examination of these cyclegraphs showed that the orbit could be very much reduced by having the incoming latch handles in a box that tilted about thirty degrees toward the operator, this, because the latch handles should always slide to the lower end of the box so that they can be found in a constant location without calling for the eye as well as than hand of the worker to find them. Immediately after the hole was countersunk the fingers opened, and it catapulted sideways down the inclined table in use, and into a box on the floor. This cut the time of the operation from approximately nine seconds to four and three quarters seconds with much less fatigue to the workman. The arc of light running in the direction of the upper left hand corner from the visor of the worker's cap shows the light on the finger of the right hand which operates the lever of the drill press. This is shown in 610-G146."

Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Photographs sent to Mr. Robert Moulton; typescript MG 1/30/15.

"610-G131. This picture is a double cycle of the speed boss at the New England Butt Company. This picture is interesting for several reasons. One is as follows: The cycles are almost exactly alike. The dropping of the latch handle makes the same upward wave in each one, and the upward course of the motion shows the extreme evenness of great skill and practice, and the downward course shows the unevenness that attends mental operations, such as attention and decision. It will be seen that up to the time that he drops this into the box the line is very wavy, and, after they are dropped, the line is quite as straight as the upward curve. This man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, but he has had short practice in making decisions.....[repeats above anecdote about hay]" Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Pictures sent to Mr. Lewis Ellison; typescript MG 12/9/15

Location of subject: New England Butt Company, Providence, RI.

Subject names: Tommy Perrotti?

318949.0168 Cyclegraph of person with lift truck. Motion clock visible on left.,
undated

Notes:

Card Number: 325

Category: materials handling study

Copy negative: 80-20582

Information on photo: T.108

318949.0169 Cyclegraph of woman working at a gridded table. Gridded background also visible., undated

Notes: Card Number: 295
Category: Light assembly study
Copy negative: 80-20584

318949.0170 Cyclegraph of a person using a lathe., undated

Notes: Card Number: 197
Category: machine shop study
Copy negative: 80-20586
Job name: New England Butt Company?
Job number: 610?

318949.0171 Cyclegraph of a woman using a time stamp on a gridded table., undated

Notes: Card Number: 887
Category: office study
Copy negative: 83-2449
Information on photo: T182

318949.0172 Cyclegraph of male doing light assembly work. Gridded background and gridded table visible., undated

Notes: Card Number: 593
Category: Light assembly study
Copy negative: 80-20585

318949.0173 Man with movie camera and elaborate set up (shoe lasting?), undated

Notes: Card Number: 689
Category: Shoe making study
Copy negative: 80-20581
Information on photo: 17351

318949.0174 Motion picture motion study step-up (shoe lasting?). Motion picture camera central with man standing on table to one side (camerman?). Motion clock, gridded tables, and gridded background visible., undated

Notes: Card Number: 595
Category: Shoe making study
Copy negative: 83-2441
Information on photo: 17243

318949.0175 Four men watching time study film., undated

Notes: Card Number: 351
Category: business and apparatus of motion study
Copy negative: 85-132

Information on photo: GL252

318949.0176 Cyclegraph of person at gridded table filing small parts. Motion clocks and gridded background visible. Penetrating screen visible to one side., undated

Notes: Card Number: 903
Category: Benchwork study
Copy negative: 80-20587
Information in photo: 16117
Information on photo: 17828(?)16117

318949.0177 Woman, Miss Maragaret Owen, standing in front of typewriter with grid and Gilbreth clocks in background, 1916, April c.

Notes: Card Number: 607
Category: typing study
Collection: NMAH
Copy negative: 83-2450
Gilbreth image: ?
Job name: Remington Typewriter, Ilion New York
Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. Note that some of the captions reference a cyclegraph; this image, GL413, is not a cyclegraph.
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GL-424 [Cyclegraph of simplified spelling 'through' vs. 'thoro'.]
GL-424 "Chronocyclegraph of determining machine design. The carriage return hook is on the left hand end of the carriage, and the motion is much longer than the models with the return on the right."
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Location of subject: Gilbreth Motion Study Laboratory, Providence RI

Subject names: Miss Margaret Owen

318949.0178 One armed male clerk at cash register wrapping package. Male with eye patch in background, undated

Notes: Card Number: 210
Category: Disabled study
Collection: NMAH
Copy negative: 85-135
Gilbreth image: 17283.A
Information on photo: 17283.A
Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

318949.0179 Female next to Remington typewriter with hands oddly outstretched., undated

Notes: Card Number: 355
Category: typing study
Copy negative: 85-127
Gilbreth image: 200.048
Information on photo: 200.048
Job name: Remington Typewriter, Ilion New York

Box 3

318949.0180 Female, Miss Maragaret Owen, typing (in motion picture set-up). Grid and motion time clock visible on left, 1916, April c.

Notes: Card Number: 356
Category: typing study
Collection: NMAH
Copy negative: 85-125
Gilbreth image: 413B
Information on photo: 413B
Job name: Remington Typewriter, Ilion New York
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Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Miss Margaret Owen

Subseries 2.2: **318949.0181 to 318949.0380**

318949.0181 Man holding stopwatch (in motion picture set-up). He stands in front of gridded background with mirrors on either side of his face and Frank Gilbreth (?) peers through a motion picture camera at him., undated

Notes: Card Number: 946

Category: Misc. or Unidentified study

Copy negative: 83-3177

318949.0182 Dinner place setting on a gridded table., undated

Notes: Card Number: 699

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 83-3175

Information on photo: 19195

318949.0183 Person using an adding machine., undated

Notes: Card Number: 359

Category: office study

Copy negative: 89-1274

Information on photo: T53

318949.0184 woman typing in an office with another woman watching. Does not look like the 1916 Remington typing study work., undated

Notes: Card Number: 360

Category: office study

Copy negative: 89-1271

Information on photo: T122

318949.0185 woman --Miss Margaret Owen--typing (in motion picture set up) grid in background, two motion clocks are visible., c. April 1916

Notes: Card Number: 459

Category: typing study

Collection: NMAH

Copy negative: 89-1269

Gilbreth image: GL 413

Information on photo: GL 413

Job name: Remington Typewriter

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GL-424 [Cyclegraph of simplified spelling 'through' vs. 'thoro'.]

GL-424 "Chronocyclegraph of determining machine design. The carriage return hook is on the left hand end of the carriage, and the motion is much longer than the models with the return on the right."

"The use of micromotion and chronocyclegraph in machine design. This shows the path of the left hand returning the carriage of a well known make of typewriter. The operator being a world champion."

"This shows the path of a champion on the Underwood typewriter and the path is very much longer than on those machines where the carriage return hook is on the right hand end of the carriage."

GL-426 "This picture and many that will follow it will show the trend in America to-day toward the discovery of the one best way to do work. This picture is a motion study laboratory where there is special investigation going on to find information regarding key-stroke and finger-stroke machines, such as monotype adding machine, typewriter, stenotype and other similar machines. In some of the cases the lights are very close to the worker as in GL-426 because a very large number of pictures per second are being photographed."

GL-427 "Path of left hand returning the carriage of a typewriter, carriage-return hook of which is on the left end of the carriage."

GL-428 "Testing the tests for the scientific selection of workers. After making tests which were supposed to be of value for selecting candidates for intensive training to become champions in typing, we submitted the tests to the people who had been champions. The woman in this picture was the champion of the world. Note that the clock shows the time of exposure of the picture, in that the blur on the hands records the time that the shutter was opened, or in other words, the shutter was open in this picture about thirty nine two thousandths of a minute, each division on the clock being half a thousandth of a minute."

"This is a picture of a former champion typist of the world showing her position on a typewriter. At least her idea of her position on a typewriter and here is a remarkable fact that of the many thousand motion pictures taken of this young lady, not a single solitary frame shows any picture anything like the one that she has posed thinking that it was the way that she actually held her hands during her typewriting. In other words this is another fine illustration of the fact that even the expert demonstrator does not know what motion he or she uses and that the methods and motions taught to the beginner at demonstration are actually used by the expert himself during his regular practice. Therefore the entire method of teaching in our trades is wrong and that the only way to teach at demonstration speed the real motions and real methods of the expert is to take the picture very fast and project them very slow, thus slowing down the expert operator with his real motions to a speed that can be seen by the learner."

"A world champion demonstrating slowly the position which she thinks her hands are in when operating at full speed. Thousands of micromotion pictures of her at full speed show no position like this. This is one more proof that fast motions and slow motions are not alike and that no one can correctly demonstrate slowly the motions that they make at the full speed of actual practice."

Location of subject: Gilbreth Motion Study Laboratory, Providence RI

Subject names: Miss Margaret Owen

318949.0186 Male and female sitting at a crude desk. Woman's chair is sitting on blocks and she is typing. Basket in the background is lettered Auer., 4/26/1917 thursday

Notes: Card Number: 460
Category: office study
Copy negative: 89-1273 (89-1278)
Information in photo: Mr. Allen's desk.
Information on photo: 17395
Location of subject: Auergesellschaft Berlin, Germany

318949.0187 two women typing, undated

Notes: Card Number: 755

Category: typing study
Copy negative: 89-1262
Gilbreth image: CL1638
Information on photo: CL1638

318949.0188 Wire models and stereo views on a gridded table, undated
Notes: Card Number: 672
Category: motion models
Copy negative: 78-9080
Information on photo: GL230

318949.0189 man seated at gridded table studying stereo views and painting wire motion models, undated
Notes: Card Number: 926
Category: motion models
Copy negative: 80-20596
Information on photo: GL216

318949.0190 cyclegraph of a golf swing. Image taken inside a tennis barn. Equipment used to make the the lights operate visible with man watching., undated
Notes: Card Number: 833
Category: Golfing study
Copy negative: 80-20589
Information on photo: ??? printed backwards

318949.0191 cyclegraph of golf swing. Man with cyclegraph equipment visible in the background, 31-Jan-16
Notes: Card Number: 631
Category: Golfing study
Copy negative: 80-20588
Information in photo: CLEEK SHOTMr. R. H. HoveyJanuary 31, 1916?
Information on photo: EF74

318949.0192 Cyclegraph of a golfer, undated
Notes: Card Number: 274
Category: golfing study
Copy negative: 90-16816
Information on photo: EF83

318949.0193 Cyclegraph of a golf swing taken in a tennis barn. Also visible is a man attending the electrical equipment to make the lights work., Jan. 31, 1916
Notes: Card Number: 275
Category: golfing study
Copy negative: 90-16823

Information in photo: Jan. 31, 1916 CLEEK SHOT Mr. R H Hover
Information on photo: EF95

318949.0194 Cyclegraph of a golf swing, undated
Notes: Card Number: 281
Category: golfing study
Copy negative: 90-16822
Information on photo: EF94

318949.0195 Cyclegraph of golf swing taken inside of a tennis barn., undated
Notes: Card Number: 488
Category: golfing study
Copy negative: 90-16821
Information on photo: EF87

318949.0196 Cyclegraph of golf swing. Taken inside a tennis barn. Electrical equipment to operate the lights is visible., undated
Notes: Card Number: 641
Category: golfing study
Copy negative: 90-16820
Information on photo: EF7730

318949.0197 cyclegraph of golfer take inside a tennis barn. Electrical equipment visible., undated
Notes: Card Number: 490
Category: golfing study
Copy negative: 90-16919
Information on photo: EF82

318949.0198 cyclegraph of a golfer and another man visible (inside tennis barn)., undated
Notes: Card Number: 491
Category: golfing study
Copy negative: 90-16817

318949.0199 cyclegraph of golf swing. Golfer and two other people visible. Also visible is the electrical equipment to make the lights work., undated
Notes: Card Number: 492
Category: golfing study
Copy negative: 90-16818
Information on photo: EF77

318949.0200 cyclegraph of golf swing, undated
Notes: Card Number: 493
Category: golfing study
Copy negative: 90-16815
Information on photo: EF76 ???

318949.0201 Six females seated at desks in large office. Wall in background has stenciled plate rail., undated

Notes: Card Number: 641
Category: office study
Copy negative: 92-14231
Information on photo: packing

318949.0202 Large office with male and female workers seated at desks. Office is in Germany. Stenciled plate rail on wall., Jan. 18, 1915

Notes: Card Number: 642
Category: office study
Copy negative: 92-14230
Information in photo: 357.18.1
Information on photo: 18.1.15T357

Box 4

318949.0203 Many office workers are seated in rows in front of tall floor to ceiling windows; a series of lamps are suspended from the ceiling.

Notes: See 318949.1156. Many office workers are seated in rows in front of tall floor to ceiling windows; a series of lamps are suspended from the ceiling. Almost identical to 99-30245, which is dated January 18, 1915. (These lights,,NE Butt?)

318949.0204 Large office with male and female workers seated at desks. Photograph taken in Germany. Stenciled plate rail on wall., undated

Notes: Card Number: 644
Category: office study
Copy negative: 92-14228
Information on photo: T359
Location of subject: Germany

318949.0205 Three males seated at desks (two wearing hats) in a large office. Water cooler in back corner, 17-Apr-14

Notes: Card Number: 149
Category: office study
Copy negative: 92-14227
Information in photo: 4-17-141325
Information on photo: 4-17-141325

318949.0206 Large office, one male barely visible. Office has a variety of filing cabinets, water cooler in back left corner., undated

Notes: Card Number: 35
Category: office study
Copy negative: 92-14226

318949.0207 Large office with two seated females typing., Oct.?19, 1921

Notes: Card Number: 36
Category: office study

Copy negative: 92-14234

Information in photo: 1 PMMo. 10, Day 19, Yr. 21

Information on photo: 210.473

318949.0208 Frank and Lillian Gilbreth seated at a desk.(80-20573 is one half of stereo view and 80-20574 is the other half which is scratched.), undated

Notes: Card Number: 840

Category: Gilbreth Family

Copy negative: 80-2057380-20574

318949.0209 Frank Gilbreth and unidentified male standing outside Marey Institute., undated

Notes: Card Number: 839

Category: business and apparatus of motion study

Copy negative: 80-20577

318949.0210 Frank Gilbreth standing in front of floral wallpapered wall., undated

Notes: Card Number: 358

Category: Frank B. Gilbreth

Copy negative: 80-20576

318949.0211 Frank and Lillian with two of the children. Clockwise Frank Sr. Lillian, Frank Jr., Bill In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: confirms the above, 1915., undated

Notes: Card Number: 656

Category: Gilbreth Family

Copy negative: 81-13992

318949.0212 Frank Gilbreth hugging Frank Jr..In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: confirms ID above. 1915., undated

Notes: Card Number: 657

Category: Gilbreth Family

Copy negative: 81-13993

Location of subject: Buttonwoods, RI

318949.0213 Frank Gilbreth at planning board (?), undated

Notes: Card Number: 375

Category: business and apparatus of motion study

Copy negative: 85-114

Information on photo: 19204

318949.0214 Frank Gilbreth standing behind bobbin winding machine and on gridded floor., undated

Notes: Card Number: 564
Category: Misc. or Unidentified study
Copy negative: 85-115

318949.0215 Frank Gilbreth seated at a table holding a stereo viewer surrounded by wire motion models., undated

Notes: Card Number: 838
Category: business and apparatus of motion study
Copy negative: 85-118

318949.0216 Frank Gilbreth standing in front of a group of seven females and three males. One woman is seated at a gridded desk and appears to be the subject for a motion study of office work., 1915

Notes: Card Number: 802
Category: office study
Copy negative: 85-138
Information in photo: 447.14.IV

318949.0217 Frank Gilbreth and six other males and three females seated with coffee and dessert in the Gilbreth home. Anne Gilbreth Cross at extreme left, Frank Gilbreth rear extreme right, and at his left, his nephew John Gilbreth Cross (Anne's son.) The location is the Studio at 26 Cabot Street where the Gilbreth Summer School sessions were held with visiting students. In the front row may be two visitors from the Boston Psychopathic Hospital: Myrtelle Canavan and her boss Dr. Southard (See Yost p.304), undated

Notes: Card Number: 640
Category: business and apparatus of motion study
Copy negative: 85-129
Information in photo: 16022
Location of subject: Providence, RI 77 Brown st.

318949.0218 Female worker stands at work table while five males (including Frank Gilbreth?) watch., undated

Notes: Card Number: 638
Category: Misc. or Unidentified study
Copy negative: 83-3176

318949.0219 Frank Gilbreth and two unidentified males, one standing and one seated looking in a stereo viewer., undated

Notes: Card Number: 357
Category: business and apparatus of motion study
Copy negative: 85-121

318949.0220, Frank Gilbreth looks at a piece of paper while an unidentified male looks in a stereo viewer. Both men sit at a gridded desk with Gilbreth pencil holder, undated

Notes: Card Number: 600
Category: business and apparatus of motion study

Copy negative: 85-137

318949.0221 Frank Gilbreth and unidentified male (WWI era colonel) in an office. Both men wear military uniforms. Motion clock visible., undated

Notes: Card Number: 376

Category: business and apparatus of motion study

Copy negative: 85-119

318949.0222 Female sitting on top of a table (Hortense Stollnitz) holding her hands out as if she is typing. Anna Gold, another typist, looks at the camera; Lillian Gilbreth, with triangle striped collar, looks at Stollnitz. P. L. Waters, Remington coach, adjusts Stollnitz' arm position. Motion clock visible., 1916

Notes: Card Number: 739

Category: typing study

Collection: NMAH

Copy negative: 80-20575

Gilbreth image: 16181

Information on photo: 16181

Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson: 16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart operators who cannot get over the 125 mark because they learn the wrong motions first of moving the elbow forward and back instead of the fingers.

16166 Mr. P.L. Waters teaching Remington typists in Gilbreth Laboratory. The Remington Typewriter has produced the fastest records ever known.

16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.

16180.N. Micromotion studies of champion of the world typists. This work was done in our laboratory in 1916.

16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures were taken. Her gold medal can be seen in her left hand in #16245.

16208 Mr. P.L. Waters teaching the National Champion Amateur Typist in Gilbreth Laboratory (1916). The Remington machine shown herein holds the world's record for the greatest number of words per minute gross.

16213 Mr. P.L. Waters teaching the World's Champion Amateur Typist in Gilbreth Laboratory, 1916. Gross number of words per

minute from strange copy, 147. Net number of words per minute (after penalizing, 5 words for each and every mistake, 137 words per minute. This gross is 5 words more than ever known before and the net is equal to the best professional record.

16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross. 16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16249A Miss Stollnitz and her gold medal, as Champion Amateur of the world.

16249K Miss Stollnitz and her gold medal, for becoming International Champion of the World. [in 1916.] Miss Anna Gold with her gold medal which she received for becoming International Champion in September 1916.

GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916, and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Subject names: Hortense Stollnitz; Anna Gold; P. L. Waters; Lillian Gilbreth

318949.0223 Frank Gilbreth and another male (WWI era colonel) examine a chart while seated in a office. Both men wear military uniforms. Motion clock visible., undated

Notes: Card Number: 634
 Category: business and apparatus of motion study
 Copy negative: 85-128

318949.0224 Family picture of Frank, Lillian, Frank's mother, an unidentified woman, and four children standing on grass near a large body of water. Clockwise Frank Sr., Anne, Lillian Sr., Bill, Carrol Cross, Grandma Gilbreth, Martha, Ernestine, Frank Jr. taken at Buttonwoods, RI. [Ernestine Carey via Peter Liebhold?] People in photo identified by Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From left, back row: Frank B. Gilbreth, Anne Gilbreth (child), Lillian M. Gilbreth, Bill Gilbreth (baby), Carol Cross (cousin) (holding baby), Martha Bunker Gilbreth. Front Row, from left: Frank B. Gilbreth Jr. (in front of his dad), Ernestine Gilbreth, Martha Gilbreth (with beads). Jane Lancaster writes: 'Ernestine told me this was Carol Cross--she seemed v. sure--but also about the next image [318949.0155] which is only a year or two earlier--and Carol Cross must have grown up fast.' Also Jane Lancaster reports this image taken somewhere in Rhode Island, Summer 1915, probably August since Frank and Lillian were in Germany in June and July, 1915. Also, Bill was born in Dec. 1912, and Frank born March 1911. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: the IDs she gives are the same except she identifies the woman holding Bill as Anne Cross, not Carol Cross., undated

Notes: Card Number: 678
 Category: Gilbreth Family
 Copy negative: 85-123
 Location of subject: Buttonwoods, RI

318949.0225 The Gilbreth family, Frank, Lillian and (9 kids) in an automobile (foolish carriage) taken in front of family house (the Shoe). Clockwise Frank Sr., Frank Jr., Martha, Lillian, Dan, Fred, Anne, Ernestine, Bill, Lillian Sr., Jack. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From front row, left to right: Frank, Lillian; baby Jack [born June 29, 1919]; 2nd row, left to right: Bill, Frank Jr. (b. 1911); 3rd row: Martha, Ernestine, Anne; back row, L to R: Lillian, Dan (b. 1917); Fred (b. August 1916). Photo taken on Nantucket, July 1919 (Jack was born June 29, 1919). [conflicts with Ernestine, below]. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Summer 1922 year Jane B. Nantucket shoe. This was the year Jane Gilbreth (last child) was born., Jul-19

Notes: Card Number: 805
 Category: Gilbreth Family
 Copy negative: 85-133
 Location of subject: Nantucket, MA

318949.0226 Seated female foundry worker in front of gridded background packing sand molds., undated

Notes: Card Number: 136
 Category: Unidentified study

Copy negative: 80-20580

318949.0227 Male worker seated on a Gilbreth modified chair. He is filing a part held in a bench mounted vice. In background in a cabinet covered with pin-ups., undated

Notes: Card Number: 433
Category: Benchwork study
Copy negative: 85-122
Information on photo: 610217

318949.0228 Young male (office boy) standing next to gridded desk carrying desk drawer refills., 1915

Notes: Card Number: 169
Category: office study
Copy negative: 80-20578
Information in photo: 406.9.III

318949.0229 Double exposure in a surgical theater. In the stronger image a doctor and two assistants stand around and unconscious patient. The assistants wear caps with numbers., undated

Notes: Card Number: 715
Category: surgical & dental study
Copy negative: 80-20601
Information in photo: 649

318949.0230, Double exposure in a surgical theater. Gridded wall in background. Surgical crew wear gowns, masks, and caps with identifying letters (A & B). The patient appears to be Frank Gilbreth undergoing mouth surgery., undated

Notes: Card Number: 404
Duplicate of 318949.0581
Category: surgical & dental study
Copy negative: 80-20602
Gilbreth image: 17218
Information on photo: 17218

318949.0231 Two male members of a surgical team dressed in gowns, masks, and numbered caps (1&2) stand in front of gridded wall., undated

Notes: Card Number: 443
Category: surgical & dental study
Copy negative: 80-20603
Gilbreth image: 17234
Information on photo: 17234

318949.0232, Members of a surgical team dressed in gowns, masks, and numbered caps (1&2) stand in front of gridded wall.

318949.0233 Six members of a surgical team wearing gowns, masks, and numbered caps (2, 3, & A). They work in front of a gridded wall. Much surgical equipment visible., undated

Notes: Card Number: 407
Category: surgical & dental study
Copy negative: 80-20604
Gilbreth image: 17242
Information on photo: 17242

318949.0234 Five members of a surgical team wearing gowns, masks, and numbered caps (2 & 3). They may be administering anesthesia. They work in front of a gridded wall., undated

Notes: Card Number: 154
Category: surgical & dental study
Copy negative: 80-20606
Gilbreth image: 17268
Information on photo: 17268

318949.0235 Double exposure. In one image six members of a surgical team wearing gowns, masks, and numbered caps (5 & 1) work on a patient. At least one member of the team is female. In the other image a patient, Frank Gilbreth, receives oral or dental surgery., undated

Notes: Card Number: 409
Category: surgical & dental study
Copy negative: 80-20607
Gilbreth image: see 17268

318949.0236 Double exposure. Three members of a surgical team wearing gowns stand at gridded table. Motion clock visible., undated

Notes: Card Number: 156
Category: surgical & dental study
Copy negative: 80-20608
Gilbreth image: see 17268
Information in photo: Dr. PoolLigature
Information on photo: 615.115

318949.0237 Three members of a surgical team wearing gowns stand at gridded table. Operating theater is inside a home. Two motion clocks are visible., undated

Notes: Card Number: 157
Category: surgical & dental study
Copy negative: 80-20609
Gilbreth image: see 17268
Information on photo: Dr. BancroftLigatmig (?)

318949.0238 Three members of a surgical team wearing gowns work at gridded table. Operating theatre is set up inside a home. Two motion clocks are visible., undated

Notes: Card Number: 158
Category: surgical & dental study
Copy negative: 80-20610
Gilbreth image: see 17268

318949.0239 Three members of a surgical team wearing gowns work at a gridded table. Operating theater is set up in a home. Two motion clocks are visible., undated

Notes: Card Number: 159
Category: surgical & dental study
Copy negative: 80-20611
Gilbreth image: see 17268
Information on photo: 615.119

318949.0240, Two members of a surgical team wearing gowns stand at a gridded table in an operating theater set up inside a home. One man smokes a pipe. Two motion clocks visible., undated

Notes: Card Number: 160
Category: surgical & dental study
Copy negative: 80-20612
Gilbreth image: see 17268
Information on photo: 615.117

318949.0241 Close-up of two people in surgical gowns handing off a piece of surgical equipment. One gown is numbered 22, undated

Notes: Card Number: 161
Category: surgical & dental study
Copy negative: 80-20613
Gilbreth image: see 17268
Information on photo: 616.134

318949.0242 Close-up of two people in surgical gowns handing off a piece of surgical equipment. One gown is numbered 21, undated

Notes: Card Number: 162
Category: surgical & dental study
Copy negative: 80-20614
Gilbreth image: see 17268

318949.0243 Double exposure. Close-up of two people in surgical gowns handing off a piece of surgical equipment. More surgical equipment on gridded cloth below., undated

Notes: Card Number: 163
Category: surgical & dental study
Copy negative: 80-20615

Gilbreth image: see 17268

Information on photo: 615.1 (??)

318949.0244 Close-up of two people in surgical gowns working with thread., undated

Notes: Card Number: 164
Category: surgical & dental study
Copy negative: 80-20616
Gilbreth image: see 17268

318949.0245 Close-up of a person doing surgical or dental work in a male patient's mouth., undated

Notes: Card Number: 165
Category: surgical & dental study
Copy negative: 80-20617

318949.0246 Close-up of female doing surgical or dental work on a young female patient. Gridded wall in background., undated

Notes: Card Number: 419
Category: surgical & dental study
Copy negative: 80-20618
Information on photo: 7035

318949.0247 Close-up of female doing surgical or dental work on a young female patient. Gridded wall in background., undated

Notes: Card Number: 167
Category: surgical & dental study
Copy negative: 80-20619

318949.0248 Female performing surgical or dental work on a male patient., undated

Notes: Card Number: 168
Category: surgical & dental study
Copy negative: 80-20620

318949.0249 Pencil and paper clip holder sitting on a gridded desk. Hand reaching for pencil., undated

Notes: Card Number: 453
Category: office study
Copy negative: 85-117

318949.0250 Male worker standing at a bench filing a part held in a vice. In background in a cabinet covered with pin-ups., undated

Notes: Card Number: 16
Category: Benchwork study
Copy negative: 85-116
Information on photo: 610214

318949.0251 Proper seating study. Photograph of female from knees down seated with shoes on specialized Gilbreth footrest., undated

Notes: Card Number: 603
Category: Unidentified study
Copy negative: 85-130
Information on photo: 1700.101

318949.0252 Female textile worker standing at bobbin winding machine. Two motion clocks are visible and the floor and back wall are gridded (image appears to be taken motion study studio)., 10/4/1916

Notes: Card Number: 699
Category: textile making study
Copy negative: 80-20579
Information in photo: 640.14 (?)

318949.0253 Female sewing machine operator seated at gridded sewing machine table, wall and floor., undated

Notes: Card Number: 758
Category: needle trade study
Copy negative: 85-124
Information in photo: 647(?) 6
Information on photo: 17015

318949.0254 Seated female (Lillian?) at gridded desk writing with a pen. Photograph taken through a penetrating scree (probably superimposed). The subject worker has cyclegraph light attached to her right forefinger., undated

Notes: Card Number: 598
Category: office study
Copy negative: 85-131

318949.0255 Male worker seated on a Gilbreth modified chair. He is filing a part held in a bench mounted vice. In background in a cabinet covered with pin-ups., undated

Notes: Card Number: 17
Category: Benchwork study
Copy negative: 85-126
Information on photo: 610216

318949.0256 Group of nine males (scientific managers?) standing in motion study set-up. Two motion picture cameras off to one side., undated

Notes: Card Number: 378
Category: business and apparatus of motion study
Copy negative: 83-3174

318949.0257 Cyclegraph of person moving blocks (?) from one table to another. gridded table, floor, and background., undated

Notes: Card Number: 720
Category: Cyclegraph study

Copy negative: 83-2451

Information in photo: 74

318949.0258 unidentified cyclegraph, undated

Notes: Card Number: 199

Category: Cyclegraph study

Copy negative: 80-20590

Information on photo: T.826

318949.0259 Unidentified cyclegraph, undated

Notes: Card Number: 200

Category: Cyclegraph study

Copy negative: 80-20591

318949.0260 Unidentified cyclegraph, undated

Notes: Card Number: 201

Category: Cyclegraph study

Copy negative: 80-20592

318949.0261 Unidentified cyclegraph (bricklaying)., undated

Notes: Card Number: 216

Category: Cyclegraph study

Copy negative: 80-20593

Information on photo: GL371

318949.0262 Unidentified cyclegraph, undated

Notes: Card Number: 203

Category: Cyclegraph study

Copy negative: 80-20594

Box 4

318949.0263, unidentified cylcegraph

318949.0264 Unidentified cyclegraph, undated

Notes: Card Number: 432

Category: Cyclegraph study

Copy negative: 83-2444

318949.0265 Unidentified cyclegraph. Gridded table and gridded
background., undated

Notes: Card Number: 433

Category: Cyclegraph study

Copy negative: 83-2445

318949.0266 Unidentified cyclegraph in front of gridded background., undated

Notes: Card Number: 409

Category: Cyclegraph study

Copy negative: 83-2446

Box 4

318949.0267, cyclegraph of a machine shop

318949.0268 Unidentified cyclegraph. Gridded background and table.,
undated

Notes: Card Number: 15
Category: Cyclegraph study
Copy negative: 78-9083

318949.0269 Double exposure. Cyclegraph of light writing in german.,
undated

Notes: Card Number: 22
Category: Cyclegraph study
Copy negative: 78-9078

318949.0270, Cyclegraph of light writing. Gridded table and gridded
background. Two motion clocks and a camera visible., undated

Notes: Card Number: 237
Category: Cyclegraph study
Copy negative: 83-2442

318949.0271 Cyclegraph of light writing. Gridded background and gridded
table. Three men observing. Motion clocks, camera, and cyclegraph
equipment visible., 11/27/1914

Notes: Card Number: 238
Category: Cyclegraph study
Copy negative: 83-3179
Information in photo: chronocylce1670 per min.

Box 4

318949.0272, Cyclegraph of light writing.

318949.0273 Cyclegraph of light writing in german. Gridded table and
background. Herr Director Remaner Happy Birthday, undated

Notes: Card Number: 597
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 83-2443

318949.0274 Wire model sitting on gridded table in front of gridded
background. On the gridded table is printed the name "Burns"., undated

Notes: Card Number: 916
Category: motion models
Copy negative: 78-9082
Information in photo: Burns

318949.0275 Wire model sitting on gridded table in front of gridded
background.(see 80-20583), undated

Notes: Card Number: 674
Category: motion models
Copy negative: 83-2440

Information in photo: Burns

Information on photo: GL242

318949.0276 Wire model on gidded table with gridded background., undated

Notes: Card Number: 647
Category: motion models
Copy negative: 78-9081
Information in photo: Burns

318949.0277 Wire model sitting on gridded table with gridded background.
(Photograph printed backwards.), undated

Notes: Card Number: 851
Category: motion models
Copy negative: 78-9084
Information in photo: Burns
Information on photo: GL545

318949.0278, Wire model sitting on gridded table with gridded background.

318949.0279 Messy pile of boxes and equipment., undated

Notes: Card Number: 279
Category: Misc.
Copy negative: 85-134

318949.0280 Large piles of shirt collars (?), 3/16/1917

Notes: Card Number: 466
Category: Misc.
Copy negative: 83-2448
Information in photo: May 16, 1917Wednesday

318949.0281 15 boys working at benches in vocational (woodworking?)
classroom. Two motion clocks visible, undated

Notes: Card Number: 503
Category: Misc.
Copy negative: 85-136

318949.0282 Office with long lines of desks where men and women are
seated doing paper work. Three boys stand in rear of room. Photograph may
be taken in Germany, undated

Notes: Card Number: 676
Category: office study
Copy negative: 81-13994

318949.0283 Male sitting at large gridded drafting style table. F.W. Talyor card
filer (flying machine)., undated

Notes: Card Number: 128
Category: office study

Copy negative: 81-5450

Information in photo: 4109 III

318949.0284 Office with male standing next to F.W. Taylor card filer (Flying Machine). Roll top desk in foreground and water cooler in background., undated

Notes: Card Number: 283
Category: office study
Copy negative: 81-5451

318949.0285 Photograph taken in an office looking up into the ceiling at a F.W. Taylor (flying machine) card filer., undated

Notes: Card Number: 324
Category: office study
Copy negative: 81-5452

318949.0286 Gilbreth motion study exhibit, undated

Notes: Card Number: 9
Category: Misc.
Copy negative: 80-20597

318949.0287 Gilbreth motion study exhibit. Showing typewriters for the handicapped braiding machines., undated

Notes: Card Number: 474
Category: Misc.
Copy negative: 80-20598

318949.0288 Gilbreth motion study exhibit, undated

Notes: Card Number: 20
Category: Misc.
Copy negative: 80-20599

Box 4

318949.0289, Gilbreth motion study exhibit

318949.0290, Barth's belt slide rule, undated

Notes: Card Number: 681
Category: Misc.
Copy negative: 81-5447

318949.0291 Copy photograph of six letters from Herrmann, Aukam & Co. Lebanon, PA, 1913

Notes: Card Number: 22
Category: Misc.
Copy negative: 81-5448

318949.0292 Copy photograph of letter from Herrmann, Aukam & Co., Lebanon, PA, 191(3?)

Notes: Card Number: 23

Category: Misc.

Copy negative: 81-5449

318949.0293 Diagrammatic chart of functional foremanship, undated

Notes: Card Number: 25

Category: Misc.

Copy negative: 85-120

318949.0294 Gridded desk with drawer pulled out to show arrangement of organizing bins., undated

Notes: Card Number: 63

Category: office study

Copy negative: 92-14994

318949.0295 Gridded desk with drawer pulled out to show arrangement of organizing bins, undated

Notes: Card Number: 48

Category: office study

Copy negative: 92-15002

318949.0296 Gridded desk with drawer pulled out to show arrangement of organizing bins (one removable tray is pulled out., undated

Notes: Card Number: 317

Category: office study

Copy negative: 92-15000

318949.0297 Gridded desk with drawer pulled out to show arrangement of organizing bins. Dictaphone on the top of the desk., undated

Notes: Card Number: 65

Category: office study

Copy negative: 92-15012

Information in photo: 17098

318949.0298 Gridded desk with drawer pulled out to show arrangement of organizing bins., undated

Notes: Card Number: 66

Category: office study

Copy negative: 92-15010

Information in photo: 17094

Information on photo: 7

318949.0299 Office with gridded and numbered desk. Two drawers are pulled out of desk to show arrangement of organizing bins. Top of desk has time stamp and several specilized bins., undated

Notes: Card Number: 128

Category: office study

Copy negative: 92-14995

318949.0300 Young male (office boy) standing next to gridded desk carrying tray of desk refills. Stenciled plate rail on wall., 9-Mar-15

Notes: Card Number: 645
Category: office study
Copy negative: 92-14993
Information in photo: 406.9.111
Information on photo: 9.111.15T406

318949.0301 Young male (office boy) standing next to gridded desk carrying a tray of desk refills. Stenciled plate rail on wall., 9-Mar-15

Notes: Card Number: 646
Category: office study
Copy negative: 92-15008
Information in photo: 406.9.111
Information on photo: 778 (?)

318949.0302 Gridded desk with drawer pulled out to show arrangement of organizing bins. Dictaphone on top of desk., undated

Notes: Card Number: 161
Category: office study
Copy negative: 92-14992
Information in photo: 17098

318949.0303 (NOT IN BOX 4) Large office with male and female workers seated at desks. Stenciled plate rail on wall., Jan. 1, 1915

Notes: Card Number: 643
Category: office study
Copy negative: 92-14229
Information on photo: 18.1.15T364

318949.0303 Gridded desk with drawer pulled out to show arrangement of organizing bins., undated

Notes: Card Number: 47
Category: office study
Copy negative: 92-14997
Information in photo: 17095

318949.0304 Detail of gridded desk with drawer pulled out to show arrangement of organizing bins. Dictaphone on top of desk., undated

Notes: Card Number: 8
Category: office study
Copy negative: 92-15001
Gilbreth image: 17095
Information in photo: 17095

318949.0305 Detail of gridded desk with drawer pulled out to show arrangement of organizing bins. Dictaphone on top of desk., undated

Notes: Card Number: 7
Category: office study
Copy negative: 92-15009
Gilbreth image: 17090
Information in photo: 17090

318949.0306 Office with desk with two side by side chairs. In the background long lists hang from the walls., undated

Notes: Card Number: 177
Category: office study
Copy negative: 92-15018
Information on photo: 210.405

318949.0307 Large office showing several desks., Oct. 10, 1921

Notes: Card Number: 49
Category: office study
Copy negative: 92-14998
Information in photo: 1 PMlocation - office
Information on photo: 210.474

318949.0308 Large office showing several desks and a bank of file cabinets. Blurred image of person at desk between two file drawers which are pulled out, undated

Notes: Card Number: 50
Category: office study
Copy negative: 92-15007
Information on photo: 210.486

Box 4

318949.0309, Gridded desk with drawer pulled out to show arrangement of organizing bins.

318949.0310 Gridded desk with drawer pulled out to show arrangement of organizing bins., undated

Notes: Card Number: 52
Category: office study
Copy negative: 92-15011

318949.0311 Gridded desk with drawer pulled out to show arrangement of organizing bins. Dictaphone on top of desk., undated

Notes: Card Number: 53
Category: office study
Copy negative: 92-15013
Information in photo: 17098

318949.0312 Gridded desk with drawer pulled out to show arrangement of organizing bins., Jan. 19, 1915 (?)

Notes: Card Number: 54

Category: office study
Copy negative: 92-14999
Information on photo: 19.1.15T368

318949.0313 Seated male at high desk. Chair has been extended by placing it on a booster. Overhead is a Taylor card filer (flying machine)., March 9, 19??

Notes: Card Number: 511
Category: office study
Copy negative: 92-15005
Information in photo: 410.9.111

318949.0314 Looking up into the ceiling at the counterweight mechanism for a Taylor card filer (flying machine.), undated

Notes: Card Number: 512
Category: office study
Copy negative: 92-15003

318949.0315 Route map of factory, Bldg C, 1st floor. In background sinks lining a wall are visible., 4-Apr-19

Notes: Card Number: 448
Category: business and apparatus of motion study
Copy negative: 92-14996
Information in photo: Bldg C, 1st Floor12534-4-19
Information on photo: 1253

318949.0316 Factory route map, Bldgs I & J, 1st floor. Sinks visible in background., 4-Apr-19

Notes: Card Number: 292
Category: business and apparatus of motion study
Copy negative: 92-15004
Information in photo: Bldgs I & J1st Floor12584-4-19
Information on photo: 12584-4-19

318949.0317 Route model of factory, Bldg D, 1st floor. Model is laid out on a board with what appears to be two more behind it. Photograph is taken in a room that has sinks lining the walls., 4-Apr-19

Notes: Card Number: 176
Category: business and apparatus of motion study
Copy negative: 92-15014
Information in photo: Bldg D1st Floor4-4-19
Information on photo: 12614-4-19

318949.0318 Standing male in a room with large tables that have factory route models being built. Sinks line two walls. A door leads off the room which says women only. Another sign reads place all waste refuse in receptacle provided for this purpose., 21-Mar-19

Notes: Card Number: 59

Category: business and apparatus of motion study

Copy negative: 92-15017

Information in photo: 1095

Information on photo: 10953-21-19

318949.0319 Interior of room with a thermometer, a telephone, and an open case visible., undated

Notes: Card Number: 6

Category: Misc.

Copy negative: 92-15015

Information on photo: notification

318949.0320 Male lettering a chart, Frank B. Gilbreth Inc., Process Chart, Raw Materials. What appear to be simultaneous motion charts are visible in the background., undated

Notes: Card Number: 321

Category: business and apparatus of motion study

Copy negative: 92-15016

Information on photo: 210497

318949.0321 Three males sitting at desks (two wearing hats) in large office. Water cooler in back corner., 17-Apr-14

Notes: Card Number: 148

Category: office study

Copy negative: 93-4679

Information in photo: 4-17-141325

Information on photo: 13254-17-19

318949.0322 Lift truck in front of gridded background, 1915

Notes: Card Number: 366

Category: materials handling study

Copy negative: 92-15432

Information in photo: 492.21.41915

318949.0323 Male elevating lift truck. Gridded background and route map (?) visible., 1-Mar-15

Notes: Card Number: 363

Category: materials handling study

Copy negative: 92-15416

Information in photo: 399.1.III1915

318949.0324 lug boxes on a rolling conveyor., undated

Notes: Card Number: 372

Category: materials handling study

Copy negative: 92-15415

Information on photo: 200.524

318949.0325 Lift truck partially inserted underneath pallet with 16 boxes., November 11, 1915

Notes: Card Number: 364
Category: materials handling study
Copy negative: 92-15423
Information in photo: 382.11.II

318949.0326 Metal bench with drawers stacked on top. Piles of dirt (?) underneath., undated

Notes: Card Number: 373
Category: Misc.
Copy negative: 92-15431
Information on photo: 230.107

318949.0327 Male wearing hat pushing a lift truck. Lift truck has 16 boxes piled on it. Gridded background off to one side., November 11, 1915

Notes: Card Number: 362
Category: materials handling study
Copy negative: 92-15426
Information in photo: 384.11.II

318949.0328 Lift truck in front of blank background., 1915

Notes: Card Number: 369
Category: materials handling study
Copy negative: 92-15430
Information in photo: 402.1.III
Information on photo: 1.III.15T402

318949.0329 Messy storeroom with reams of paper stacked on two carts. Two motion clocks visible., undated

Notes: Card Number: 529
Category: Misc.
Copy negative: 92-15437
Information in photo: 1-27-21EX. 5 min.
Information on photo: 210.117

318949.0330 Outside of factory building. An inclined plane with wheels on it is rolled up to a cellar door., 27-Mar-15

Notes: Card Number: 9
Category: materials handling study
Copy negative: 92-15428
Location of subject: Germany

318949.0331 Lift truck in front of gridded background., 1915

Notes: Card Number: 367
Category: materials handling study
Copy negative: 92-15414

Information in photo: 486.20.4

Information on photo: 20.4.15T486

318949.0332 Outside of factory building. An inclined plane with wheels on it is rolled up to a cellar door., 27-Mar-15

Notes: Card Number: 265

Category: materials handling study

Copy negative: 92-15429

Location of subject: Germany

318949.0333 Small table with wheels that crank down., 3/28/1919

Notes: Card Number: 627

Category: materials handling study

Copy negative: 92-15433

Information in photo: 3/28/191199

Information on photo: 11993-28-19

318949.0334 Male wearing hat pumping handle on lift truck. 16 boxes are pile atop lift truck. White backdrop with gridded backdrop to one side and desk on other side., 11-Nov-15

Notes: Card Number: 361

Category: materials handling study

Copy negative: 92-15424

Information in photo: 383.11.II

318949.0335 Outside of factory building. A boy is moving a portable inclined plane., 27-Mar-15

Notes: Card Number: 10

Category: materials handling study

Copy negative: 92-15420

Information in photo: 437 27.111

Location of subject: Germany

318949.0336 Lift truck in front of blank wall., 15-Jan-15

Notes: Card Number: 368

Category: materials handling study

Copy negative: 92-15419

Information in photo: 353.15.I

Information on photo: 15.I.15T353

318949.0337 Lift truck on factory floor carrying large box of metal parts. Work bench visible in background., undated

Notes: Card Number: 371

Category: materials handling study

Copy negative: 92-15418

318949.0338 Small table with wheels that crank down, 3/28/1919

Notes: Card Number: 626
Category: materials handling study
Copy negative: 92-15425
Information in photo: 3/28/191197
Information on photo: 11973-28-19

318949.0339 Lift truck on factory floor carrying large box of metal parts.,
undated

Notes: Card Number: 370
Category: materials handling study
Copy negative: 92-15435

318949.0340 Large pile of shirt collars (?) and man leaning into wheeled
storage bin., 1917

Notes: Card Number: 623
Category: Misc.
Copy negative: 92-15436
Information in photo: Wed. May 16
Information on photo: 17460

318949.0341 Small table with wheels that crank down laying on its side.,
3/28/1919

Notes: Card Number: 627
Category: materials handling study
Copy negative: 92-15421
Information in photo: 3/28/191204
Information on photo: 2043-28-19

318949.0342 Male elevating lift truck. Gridded background and route map (?)
visible., March 1, 1915

Notes: Card Number: 365
Category: materials handling study
Copy negative: 92-15413
Information in photo: 400.1.III

318949.0343 Storeroom, undated

Notes: Card Number: 624
Category: Misc.
Copy negative: 92-15417
Information on photo: 200.005

318949.0344 Two wheeled cart paper transport wagon loaded with large
reams of paper., Dec. 11, 1914

Notes: Card Number: 463
Category: materials handling study
Copy negative: 92-15434
Information in photo: Paper transport wagon 12/11/14

Information on photo: 12. X1. 14T76

Location of subject: Germay

318949.0345 Two males standing in a storeroom with a lift truck ., undated

Notes: Card Number: 625

Category: materials handling study

Copy negative: 92-15422

Information on photo: 440.27.III

318949.0346 Two males and a female are setting up cyclegraph (?) equipment. One motion clock is visible., undated

Notes: Card Number: 85

Category: business and apparatus of motion study

Copy negative: 92-16554

Information on photo: L136

318949.0347 Female seated at an inclined table in a room with two gridded walls and a gridded floor. She is surrounded by movie lights. Two motion clocks are visible. The table has a chute that comes out the bottom., undated

Notes: Card Number: 335

Category: stacking & packing study

Copy negative: 92-16551

Information on photo: 200.547

318949.0348 Cyclegraph equipment, Feb. 4, 1915

Notes: Card Number: 83

Category: business and apparatus of motion study

Copy negative: 92-16555

Information in photo: 373 4.II

Information on photo: T.373

318949.0349 Cyclegraph apparatus, undated

Notes: Card Number: 249

Category: business and apparatus of motion study

Copy negative: 92-16556

Information on photo: GL27419

318949.0350 Male (in military uniform?) standing on gridded table in front of gridded background. He is having his foot measured (?) by another male. Motion picture camera is aimed at his foot., undated

Notes: Card Number: 204

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 92-16553

Gilbreth image: 18315

Information on photo: 18315

318949.0351 Two seated females and a motion picture projector. Gridded wall off to one side and one woman is sitting at an inclined gridded desk., 4-Apr-15

Notes: Card Number: 74
Category: business and apparatus of motion study
Copy negative: 92-16552
Information in photo: 483.20.4

318949.0352 Electrical equipment for generating pulsed signal for chronocyclegraphs., Nov. 4, 1915

Notes: Card Number: 6
Category: Motion study equipment
Copy negative: 92-16550
Information in photo: 374/4/11
Information on photo: 4.II.15T374

318949.0353 Cyclegraph of male working multispindle drill press with gravity slide parts feed. Second male (with tie) watches. Camera on tripod in foreground., undated

Notes: Card Number: 7
Category: machine shop study
Copy negative: 92-16548
Information on photo: 610 G254

318949.0354 Room with unidentified equipment (Germany? room has stenciled chair rail)., Nov. 11, 19??

Notes: Card Number: 330
Category: Factory documentation
Copy negative: 92-16546
Information in photo: 7.x11.246
Information on photo: T2467.X11.4

318949.0355 Unidentified office with dictaphone. Double exposure., undated

Notes: Card Number: 78
Category: office study
Copy negative: 92-16547

318949.0356 Motion study filming studio set-up. Two males one seated on a crate, motion picture camera on tripod, gridded background. Chart of functional foremen (?) of to one side., undated

Notes: Card Number: 79
Category: Misc. or Unidentified study
Copy negative: 92-16545
Information on photo: GL 390

318949.0357 Male seated in front of device for generating pulsed signal for chronocyclegraphs., undated

Notes: Card Number: 11

Category: Motion study equipment

Copy negative: 92-16542

318949.0358 Two seated females watch a motion picture. Gridded background off to one side., 20-Apr-15

Notes: Card Number: 39

Category: business and apparatus of motion study

Copy negative: 92-16543

Information in photo: 483.20.4

Information on photo: T48320.4.15

318949.0359 Room with motion study equipment including mechanism for generating pulsed signal for chronocyclegraphs., Nov. 7, 1914(?)

Notes: Card Number: 12

Category: Motion study equipment

Copy negative: 92-16544

Information in photo: 7.11249

Information on photo: 7x11.14T249

318949.0360 Detail of mechanical device, sitting on a gridded table in front of a gridded background. Ruler include in photograph to give vertical and horizontal dimensions., undated

Notes: Card Number: 86

Category: business and apparatus of motion study

Copy negative: 92-16557

318949.0361 Room with standing male and female. Room has chalk boards on walls with writing (VI, apron, hem, backstitch, hemming, baste, knot, basting, needle, outline-stitch, overcasting, raw, seam, etc.). Motion clock(?) visible on table in middle., undated

Notes: Card Number: 82

Category: Misc. or Unidentified study

Copy negative: 92-16541

Information on photo: GL 452

318949.0362 Male seated at gridded table looking through motion picture film. Table is piled with boxes and motion picture reels and stock. Simultaneous motion chart pinned to back wall. Photograph made with double exposed penetrating screen., undated

Notes: Card Number: 83

Category: business and apparatus of motion study

Copy negative: 92-16540

318949.0363 Equipment for generating pulsed signal for chronocyclegraphs., Nov. 4, 1915

Notes: Card Number: 337

Category: Motion study equipment

Copy negative: 92-16538

Information in photo: 374.4.11

Information on photo: T. 374

318949.0364 Motion study set-up. Female seated at table behind penetrating screen. Two males watch on. Lights and other equipment visible. Two motion clocks visible, undated

Notes: Card Number: 54

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 92-16537

Information on photo: 17658C8

318949.0365 Male setting up for filming a motion study. Gridded background and motion clock visible., undated

Notes: Card Number: 16

Category: Misc. or Unidentified study

Copy negative: 92-16536

Information in photo: 1809

Information on photo: EF 677

318949.0366 Motion study set-up. Female seated at table behind penetrating screen. One male is operating a motion picture camera (?). Lights and other equipment visible. Two motion clocks visible, undated

Notes: Card Number: 10

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 92-16539

Information on photo: 17653.A

318949.0367 device for generating the pulsing current (that makes the lights blink) for chronocyclegraphs, undated

Notes: Card Number: 78

Category: Motion study equipment

Copy negative: 92-16535

Information on photo: gl274

318949.0368 Three males and one female standing in a room that is filled with motion study equipment. Visible is: a stereo camera on a tripod, the equipment for generating the pulsed light for chronocyclegraphs, a motion clock in its case, and a stereo viewer(?). Also visible are" chairs lining one wall, an oriental carpet, and a piano., undated

Notes: Card Number: 3

Category: Motion study equipment

Copy negative: 92-16533

Information on photo: GL89

318949.0369 Unidentified parts ready for assembly in motion study room. Parts on a platform on a gridded table with a gridded wall in background. On a lower shelf of the table are fourteen braces (for drilling) and a gage (?), 21-Apr-19

Notes: Card Number: 72
Category: Misc. or Unidentified study
Copy negative: 92-16534
Information in photo: 13294/21/19

318949.0370 Work bench with vise, hammer and air hose. On top of bench are some parts on a board (packet?). Below bench are assebled parts., 28-Mar-15

Notes: Card Number: 326
Category: Factory documentation
Copy negative: 92-16532
Information in photo: 12474/2/19
Information on photo: 121719112A3/28/19

318949.0371 Warehouse with open door, visible is a cart filled with cylinders (perhaps artillery shells.) Partially visible on the outside is a sign warning of pickpockets., 10-Mar-19

Notes: Card Number: 428
Category: materials handling study
Copy negative: 92-15427
Information in photo: 836
Information on photo: 10/19/8363

318949.0372 Female seated at gridded table in front of gridded background. She is wearing cyclegraph lights on her hands. On her right is a large metal pot with a brush in it and on her left an unidentifide machine and a pile of parts., undated

Notes: Card Number: 7
Category: Light assembly study
Copy negative: 93-549
Information in photo: 18188

318949.0373 Female seated at a gridded table in front of a gridded background. She is wearing cyclegraph lights on her hands. On her right is a large metal pot with a brush in it and on her left is an unidentified machine and a pile of parts., undated

Notes: Card Number: 8
Category: Light assembly study
Copy negative: 93-539

318949.0374 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 482
Category: rubber stamping study
Copy negative: 93-535
Information in photo: 169649

318949.0375 Four males and one female in an office looking at a projected image (Image they are looking at is 318949.0369.), April 21, 1919 (or after)

Notes: Card Number: 430
Category: business and apparatus of motion study
Copy negative: 93-546
Information on photo: 210.447

318949.0376 Standing male hunched over a drafting table. He appears to be holding a planimeter. Visible in the background is calendar illustration of a woman., Feb. 5, 1919

Notes: Card Number: 412
Category: office study
Copy negative: 93-545
Information on photo: 2/5/1948

318949.0377 Seated female in polka dot dress stamping paper. She sits at a gridded table in front of a gridded background. One motion clock is visible., undated

Notes: Card Number: 588
Category: Rubber stamping study
Copy negative: 93-533
Information in photo: 171649

318949.0378 Female in motion picture set-up with another female leaning over. Frank Gilbreth (?) off to one side talking to another female. Gridded background, motion picture camera and lights all visible., 1916, April c.

Notes: Card Number: 267
Category: typing study
Collection: NMAH
Copy negative: 93-542
Gilbreth image: GL 473
Information on photo: GL 473
Job name: Remington Typewriter, Ilion New York
Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3.
GL-474 "Typewriter arranged for alternating periods of sitting and standing, permitting the typist to do much more work with less fatigue."
GL-475 "Typewriter desks arranged so that the work can be done alternately sitting and standing,-changing every twenty minutes seems to have least fatigue"

318949.0379 Standing female at a high table. Motion picture camera and lights are visible. Gridded background off to one side., undated

Notes: Card Number: 12
Category: typing study

Copy negative: 93-544
Information on photo: ?????
Job name: Remington Typewriter, Ilion New York

318949.0380 Female seated at gridded desk. Stenciled plate rail on wall in background., Jan. 19, 1915

Notes: Card Number: 616
Category: office study
Copy negative: 93-536
Information in photo: 367 19.1
Information on photo: 19.1.15T367

318949.0381 to 318949.0620

318949.0381 Male standing next to a lift cart with a pallet of boxes stacked on it. Gridded background and large route map (?) visible., 1-Mar-15

Notes: Card Number: 424
Category: materials handling study
Copy negative: 93-537
Information in photo: 401.1.111

318949.0382-1, Male cranking handle on lift cart on which is a pallet stacked with crates. Gridded background and route map (?) visible., 1-Mar-15

Notes: Card Number: 425
Category: materials handling study
Copy negative: 93-540
Information in photo: 399.1.111

318949.0382-2, Three males working at large tables building factory route models (?). Sinks line one wall., 21-Mar-19

Notes: Card Number: 175
Category: business and apparatus of motion study
Copy negative: 93-555
Information in photo: 1094
Information on photo: 10943-21-19

318949.0383 Male seated at desk, behind is a wall of different size cubby holes which are all tagged., undated

Notes: Card Number: 122
Category: office study
Copy negative: 93-538
Information on photo: 20.X1.14T 136

318949.0384 Female seated at table/desk. Her chair is raised up on a riser and her feet are resting on another riser. Stenciled plate rail on the wall behind her., Jan. 18, 1915

Notes: Card Number: 610

Category: office study
Copy negative: 93-556
Information in photo: 355 18.1

318949.0385 Male standing reading a magazine. This photo may be intended to show a worker using a home reading box (it looks like one of the magazine titles may be Iron Age)., 1912 c.

Notes: Card Number: 19
Category: betterment
Collection: NMAH
Copy negative: 93-532
Job name: New England Butt Company
Job number: 610

Related captions: "This shows the 'Home Reading Box,' which is kept supplied with magazines, technical papers, and other forms of entertaining and instructive literature; and from which the workers can help themselves in such quantities as they may like." NF 1/0019 vol. III

"Shows the passing of magazines from the wagon into the plant. The plant box is placed directly below the window, where, if no one is inside waiting to take the magazines, they may easily be dropped from the outside of the plant without disturbing anyone inside." NF1/0019 vol. III.

Location of subject: New England Butt Company, Providence RI

318949.0386 Male in coat and tie standing in warehouse in front of a large pile of paper (?) which is on a pallet lifter., undated

Notes: Card Number: 484
Category: materials handling study
Copy negative: 93-541
Information in photo: 441.22.III

318949.0387 Female in polka dot dress, seated at gridded desk in front of gridded background, stamping papers. One motion clock visible., undated

Notes: Card Number: 594
Category: Rubber stamping study
Copy negative: 93-548
Gilbreth image: 1700-114
Information in photo: 166649
Information on photo: 1700-114

318949.0388 Two young males with dirty hands, one seated at desk with wire baskets, both wearing shop coats, looking at paperwork. Gridded background and two motion clocks visible., undated

Notes: Card Number: 487
Category: office study
Copy negative: 93-554

Information on photo: EF 698

318949.0389 Female seated at bench organizing (?) bobbins of yarn (?) which are being gravity fed from a crate. Gridded floor, undated

Notes: Card Number: 7
Category: Benchwork study
Copy negative: 93-534
Information on photo: 640

318949.0390 Female standing next to gridded table., undated

Notes: Card Number: 7
Category: Light assembly study
Copy negative: 93-550

318949.0391 Female seated at gridded desk with telephone and rack of paper compartments. Overhead round ductwork visible., April 19, 1915

Notes: Card Number: 314
Category: office study
Copy negative: 93-547
Information in photo: 477.19.4
Information on photo: 19.4.15T477

318949.0392 Three seated females and one seated male working at desks., undated

Notes: Card Number: 574
Category: office study
Copy negative: 93-543

318949.0393 Seated male with large book in his lap. Standing male watches as do two other people behind a glass partition. Stenciled plate rail on wall in background., 23-Mar-15

Notes: Card Number: 626
Category: office study
Copy negative: 93-530
Information in photo: 425.23.11
Information on photo: 23.111.15T469

318949.0394 Two seated female watching a motion picture. Gridded panel off to one side., 20-Apr-15

Notes: Card Number: 279
Category: business and apparatus of motion study
Copy negative: 93-552
Information in photo: 483.20.4

318949.0395 Female seated at table doing unidentified work. Time stamp (?) off to her left. Two motion clocks and a gridded background visible., undated

Notes: Card Number: 91
Category: Light assembly study

Copy negative: 93-551

318949.0396 Two young males with dirty hands, one seated at desk with wire baskets, both wearing shop coats, looking at paperwork. Gridded background and two motion clocks visible., undated

Notes: Card Number: 488

Category: office study

Copy negative: 93-553

Information on photo: EF 698

318949.0397 Male standing reading a magazine. [This photo may be intended to show a worker using a home reading box (it looks like one of the magazine titles may be Iron Age)], 1912 c.

Notes: Card Number: 18

Category: betterment

Collection: NMAH

Copy negative: 93-531

Information on photo: 610 x

Job name: New England Butt Company

Job number: 610

Related captions: "This shows the 'Home Reading Box,' which is kept supplied with magazines, technical papers, and other forms of entertaining and instructive literature; and from which the workers can help themselves in such quantities as they may like." NF 1/0019 vol. III

"Shows the passing of magazines from the wagon into the plant. The plant box is placed directly below the window, where, if no one is inside waiting to take the magazines, they may easily be dropped from the outside of the plant without disturbing anyone inside." NF1/0019 vol. III.

Location of subject: New England Butt Company, Providence RI

Subject names: unknown

318949.0398 Gridded table with gridded background with four motion models on it. Each model has a name by it (the first one is Burns the second one is Allen). Off to the right side is visible a chalk board (with ruled staff (?) lines) and a routing board., undated

Notes: Card Number: 112

Category: motion models

Copy negative: 93-2019

Gilbreth image: GL227

Information on photo: GL227

318949.0399 Gridded table with gridded background displaying eleven motion models, stereo photographs, and some metal parts. Behind the table is a chalk board, mounted on the wall are gas jet lights and visible is an ornate vent grill., undated

Notes: Card Number: 407

Category: motion models
Copy negative: 93-2566
Gilbreth image: GL230
Information on photo: GL230

318949.0400 Wire motion model labeled Lothrop., undated
Notes: Card Number: 248
Category: motion models
Copy negative: 93-2020
Information in photo: Lothrop
Information on photo: GL237

318949.0401 wire motion model, undated
Notes: Card Number: 247
Category: motion models
Copy negative: 93-2021
Information on photo: GL217

318949.0402 Cyclegraph in gridded surround., undated
Notes: Card Number: 90
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-2022
Information on photo: GL251

318949.0403 wire motion model labeled Lothrop., undated
Notes: Card Number: 245
Category: motion models
Copy negative: 93-2023
Information in photo: Lothrop
Information on photo: GL237

318949.0404 Room piled high with old benches and crates., Nov. 12, 1914
Notes: Card Number: 88
Category: storage old and new
Copy negative: 93-2024
Information in photo: Fixture and storage ???
Information on photo: 12.XI.14T71

318949.0405 Room with a messy pile of wooden forms., Jan. 11, 1914 (?)
Notes: Card Number: 449
Category: storage old and new
Copy negative: 93-204293-2027
Information in photo: pile of wooden forms
Information on photo: 11. x1. 14T68

318949.0406 Shelves and floor piled messily with boxes and barrels., undated

Notes: Card Number: 4
Category: storage old and new
Copy negative: 93-2043
Information on photo: 230.115

318949.0407 Room stacked to the ceiling with boxes, tables, and chairs.,
November 12, 1914

Notes: Card Number: 11
Category: storage old and new
Copy negative: 93-2560
Information on photo: 12.XI.14T74
Subject names: HA

318949.0408 Fuzzy photograph of messy storage., undated

Notes: Card Number: 87
Category: storage old and new
Copy negative: 93-2025
Information on photo: 200.088

318949.0409 Male standing on pile of material in messy storeroom., 6-Mar-19

Notes: Card Number: 392
Category: storage old and new
Copy negative: 93-2026
Information in photo: 772
Information on photo: 6/19/7723

318949.0410, miscellaneous rubbish under stairway Crate in foreground
marked R.F. & Co., Zebbrechlic?, undated

Notes: Card Number: 8
Category: storage old and new
Copy negative: 93-2041
Information on photo: T63

318949.0411 unidentified factory interior, undated

Notes: Card Number: 7
Category: factory documentation - interiors & exteriors &
machinery
Copy negative: 93-2040
Information on photo: 230.112

318949.0412 Detail of messy storage area. Pipe with broken sifter behind it,
further back a stack of foundry (?) frames., undated

Notes: Card Number: 6
Category: storage old and new
Copy negative: 93-2039
Information on photo: 230.11

318949.0413 Messy room with clothing hanging on a wall, a locker with various tools piled on top, a pitchfork leaning against a wall, and foundry patterns hanging on the wall., undated

Notes: Card Number: 5
Category: storage old and new
Copy negative: 93-2038
Information on photo: 230.104

318949.0414 Large room with material piled carelessly including two gears in the foreground., undated

Notes: Card Number: 4
Category: storage old and new
Copy negative: 93-2037
Information on photo: 230.111

318949.0415 Messy workroom with many barrels, a power control, and a pile of debris., undated

Notes: Card Number: 3
Category: storage old and new
Copy negative: 93-2036
Information in photo: Box factorycloc breeb
Information on photo: T64

318949.0416 Factory storage area with materials neatly stacked in numbered bins., 3-Mar-19

Notes: Card Number: 285
Category: storage old and new
Copy negative: 93-2035
Information in photo: 614
Information on photo: 3/19/6143
Job number: 614

318949.0417 Foundry equipment lined up against a wall. Visible are ladles, screens, a fire extinguisher, and a stack of sand mold frames., undated

Notes: Card Number: 5
Category: storage old and new
Copy negative: 93-2034
Information on photo: 230.108

318949.0418 Records room with some of the records on the floor. Two motion clocks visible. Several Lifeboy boxes visible., 27-Jan-21

Notes: Card Number: 99
Category: storage old and new
Copy negative: 93-23033
Information in photo: records room1-27-214 min ex.

318949.0419 Messy interior, undated

Notes: Card Number: 100
Category: factory documentation - interiors & exteriors & machinery
Copy negative: Mar-32
Information on photo: 230.113

318949.0420 Room messily piled high with stuff. National adding machine visible., undated

Notes: Card Number: 94
Category: storage old and new
Copy negative: 93-2031
Information on photo: ?00.023

318949.0421 storage room with bins filled with rolls of tape(?) . Sign reads box factory paper racks., undated

Notes: Card Number: 454
Category: storage old and new
Copy negative: 93-2030
Information in photo: box factory paper racks
Information on photo: T59

318949.0422 Room jammed full of assorted stuff. Several Lifeboy soap crates visible., undated

Notes: Card Number: 96
Category: storage old and new
Copy negative: 93-2029
Information on photo: 210.378

318949.0423 Storage room crammed full of assorted stuff., undated

Notes: Card Number: 97
Category: storage old and new
Copy negative: 93-2028
Information on photo: 210.381

318949.0424 Two women seated in wicker chairs being pushed by attendants. Photograph is taken outside with a rocky cliff in background. Lillian Gilbreth on far left; her mother, Annie Delger Moller, is on the right., undated

Notes: Card Number: 132
Category: Gilbreth Family
Copy negative: 93-2580

318949.0425 Gilbreth family dining room, 77 Brown St., Providence, RI. Lillian at foot of the table by screen with floral motif (wisteria) She is holding either daughter Anne or Martha. Aunt Anne Cross, FBG's sister is at her left. Midway at her left is Martha B. Gilbreth (FBG's mother). Frank is at table head opposite Lillian. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: screen with

background wisteris=77 Brown St. Providence RI. At far end: LMG. At near end: FBG. On left is Anne Cross and Fred Cross [Frank's sister and brother in law]., undated

Notes: Card Number: 169
Category: Gilbreth Family
Copy negative: 93-2577
Location of subject: 77 Brown St.Providence, RI

318949.0426 Adult male in suit and tie in play pen with child. Female sitting on table watching. Photograph taken on a porch. Man in crib probably William Moller and child is Bill Gilbreth. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: William Moller? with Bill, 2 yrs old, 1914., undated

Notes: Card Number: 124
Category: Gilbreth Family
Copy negative: 93-2582

318949.0427 William Moller home, Oakland California. This was the Moller home until the move to Sea View Ave., Piedmont, California in the early 1920s. Gilbreth family spent part of the summer of 1917 in this house. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'The Mollers' house, Prospect Avenue, Oakland CA. They lived here from 1890-1923.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Moller home Oakland 26th St. 1920s', undated

Notes: Card Number: 374
Category: Gilbreth Family
Copy negative: 93-2578
Location of subject: Oakland, CA

318949.0428 Male (James Dodge) seated at ornate desk. Office filled with photographs and a plaque which says Buick Dodge., undated

Notes: Card Number: 341
Category: business and apparatus of motion study
Copy negative: 93-2581

318949.0429 Class? Group of ten males and females seated in chairs. Behind the group is motion study apparatus., April 14, 1915

Notes: Card Number: 340
Category: business and apparatus of motion study
Copy negative: 93-2576
Information in photo: 447.14.?
Information on photo: 14.IV.15T467

318949.0430 Class? Standing male points to routing (?) board which sits atop pigeon hole unit. Table and chair visible to the left., undated

Notes: Card Number: 120

Category: business and apparatus of motion study

Copy negative: 93-2579

318949.0431 Two males in an office double exposed with image of men in bayonet drill., 1915--seems wrong. 1917

Notes: Card Number: 336

Category: business and apparatus of motion study

Copy negative: 93-2583

Information on photo: Acting mayor Gio Coleman, Boston?

318949.0432 Six males in suit and tie or uniform in an office. Sign on wall read Maj. (?), undated

Notes: Card Number: 333

Category: betterment

Copy negative: 93-2564

Gilbreth image: 17000.46

Information on photo: 17000.46

318949.0433 Five males in suit and tie watch a machinist at work., undated

Notes: Card Number: 24

Category: machine shop study

Copy negative: 93-2559

Information on photo: 83

318949.0434 Class? Group of ten males and females seated and taking notes as they watch seated female perform some type of work seated at table on raised dais. One standing male and female watch or direct. Some type of display board visible to the right., undated

Notes: Card Number: 119

Category: business and apparatus of motion study

Copy negative: 93-2575

318949.0435 Seven males seated and standing in office. Conference table filled with papers and simultaneous motion chart (?) in background., undated

Notes: Card Number: 329

Category: business and apparatus of motion study

Copy negative: 93-2568

Information on photo: 62281

318949.0436 Two seated females and two standing males in a room. Projector (?) sitting on a table. Women are the Columbia teacher college professors Emma Gunther and other. In the Gilbreth office in Providence, RI. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'I don't know who these people are. Nor did Ernestine or Jack and Dan.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Jane Bunker [Frank's cousin]; Dr. Canavan. She says 'about 1915,' but the neg. no. suggests 1917., 1917

Notes: Card Number: 473
 Category: misc.views
 Copy negative: 93-2562
 Gilbreth image: 17069
 Information on photo: 1700988
 Location of subject: Providence, RI

318949.0437 Three males in suit and tie standing in front of automobile in countryside. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'I don't know who these are but it looks like California and could be Lil's brothers. Is this a Packard? That was the car the Mollers had.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Moller men, Fred and Bill., 1917

Notes: Card Number: 197
 Category: misc.views
 Copy negative: 93-2574
 Gilbreth image: 17595
 Information on photo: 17595

318949.0438 Crowd of twelve males in suit and tie (two workers) in room. In front of the men is a table with some type of set up., May-14

Notes: Card Number: 22
 Category: business and apparatus of motion study
 Copy negative: 93-2561
 Information on photo: May 1914623-P

318949.0439 Five males in suit and tie standing on walk in a garden. Left to right Bill Moller, Jay Van Horn (married to Joesephine Moller), Fred Moller, Frank Moller. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: "These are Lillian's father William Moller (center) and her three brothers, but I don't know which is which though the one at the extreme right is probably Frank, the youngest, born in 1897 and the plumper one (second from left) is Jay Van Horn, Josie's husband. Brothers: Frederick b. 1891; William b. 1894; Frank b. 1897. Probably in California; some guesswork here.] In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Bill Moller men. left to right: Bill, Jay Van Horn, William Moller (father), Fred, Frank., undated

Notes: Card Number: 334
 Category: misc.views
 Copy negative: 93-2563
 Location of subject: Piedmont, CA (?)

318949.0440, Four seated males and one seated female watch a projected image of parts on a work bench., undated

Notes: Card Number: 40

Category: business and apparatus of motion study

Copy negative: 93-2567

Information on photo: 210.447

318949.0441 Group of eight males(in suit and tie) standing in factory assembly area, one worker (in duster) perched on table. Visible on left are boards for arranging parts and on right two motion picture cameras. In background is a motion study set-up., undated

Notes:

Card Number: 123

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-2570

Information on photo: 61?? look at original

Location of subject: New England Butt ?

318949.0442 Lillian Gilbreth's sisters and mother standing in the side yard of the Moller Oakland house. Left to right are: Ernestine, Josephine, Gertrude, Annie Delger Moller (Mrs. Wm) Mabel, Elinor. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: (might conflict with the above): 'I don't really know which is which. Lillian Gilbreth Johnson probably does. It was probably taken in 1917 in the yard of the Moller's house, Prospect Ave., Oakland. Sister's names are: Gertrude (b. 1880); Ernestine (b. 1882); Eleanor (b. 1884); Josephine (b. 1886); and Mabel (b. 1888). In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Moller house, 26th or 29th St. Oakland. Moller daughters and their mother. Left to right: Ernestine, Josephine, Gertrude, Annie Moller [mother], Mabel, and Eleanor c. 1917., 1917?

Notes:

Card Number: 172

Category: Gilbreth Family

Copy negative: 93-2573

Location of subject: Oakland, CA

318949.0443 Male in suit and tie in office in front of painting and vases. Of to either side are friezes. On the left is a series of gridded lights. This was taken at the same time they were doing the Remington typing studies; could this person be a Remington guy?, 1916

Notes:

Card Number: 171

Category: typing study

Copy negative: 93-2571

Gilbreth image: 16139

Information on photo: 16139

318949.0444 Crowd of twelve males in suit and tie (two workers) in room. In front of the men is a table with some type of set up., May 1914

Notes:

Card Number: 116

Category: business and apparatus of motion study

Copy negative: 93-2565

318949.0445 Crowd of 16 males in suit and tie (two or three in white dusters) standing in a belt driven machine shop. In front of the men is a work station with a lathe (?) and two tables holding packets(?)., undated

Notes: Card Number: 194
Category: machine shop study
Copy negative: 93-2569
Information on photo: 82

318949.0446 One male and female standing outside in a garden. William Moller and Annie Moller in backyard of their home., undated

Notes: Card Number: 129
Category: misc.views
Copy negative: 93-2572
Location of subject: Oakland, CA

318949.0447 Concrete home with steps probably belonging to one of LMG's married brothers. Each received a home of this type as did their sister Josephine Van Horn as a wedding gift from their parents. (Oakland or Piedmont California area.) Most likely Josephine's house. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Aunt Jo's house, LMG's sister', undated

Notes: Card Number: 170
Category: Gilbreth Family
Copy negative: 93-2558
Location of subject: Oakland or Piedmont, CA

318949.0448 Door with telephone (?) and thermometer mounted alongside it., undated

Notes: Card Number: 36
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-4439

318949.0449 Male drafting process chart, undated

Notes: Card Number: 60
Category: business and apparatus of motion study
Copy negative: 93-4414
Information on photo: 210497

318949.0450 Male drafting a process chart., undated

Notes: Card Number: 61
Category: business and apparatus of motion study
Copy negative: 93-4413
Information on photo: 210.494

318949.0451 Seated male drafting process chart., undated

Notes: Card Number: 43

Category: business and apparatus of motion study
Copy negative: 93-4412
Gilbreth image: 210.489
Information on photo: 210.489

318949.0452 Seated male drafting process chart., undated
Notes: Card Number: 59
Category: business and apparatus of motion study
Copy negative: 93-4415
Information on photo: 210,493

318949.0453 Display of routing and order forms labor cost card, requisition envelope, tissue copy of rez, etc., 22-Apr-19
Notes: Card Number: 360
Category: business and apparatus of motion study
Copy negative: 93-4417
Information on photo: 13504-22-19

318949.0454 Factory route map, 4-Apr-19
Notes: Card Number: 359
Category: business and apparatus of motion study
Copy negative: 93-4416
Information in photo: Bldg D1st Floor1261 4-4-19
Information on photo: 12614-4-19

318949.0455 Factory route map, 4-Apr-19
Notes: Card Number: 358
Category: business and apparatus of motion study
Copy negative: 93-4418
Information in photo: Bldg C2nd Floor12544-4-19
Information on photo: 12544-4-19

318949.0456 Factory route map, 4-Apr-19
Notes: Card Number: 357
Category: business and apparatus of motion study
Copy negative: 93-4419
Information in photo: Bldgs I&J3rd floor4-4-191256
Information on photo: 1256

318949.0457 Male standing at wall hung desk next to time card rack (?), undated
Notes: Card Number: 79
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-4420

318949.0458 simultaneous motion (simo) chart, undated

Notes: Card Number: 53
Category: business and apparatus of motion study
Copy negative: 93-4421
Gilbreth image: 17426
Information on photo: 17426

318949.0459 Simultaneous motion cycle (simo) chart, GL2, undated

Notes: Card Number: 52
Category: business and apparatus of motion study
Copy negative: 93-4422
Gilbreth image: 16070
Information on photo: 16070

318949.0460 Female seated at desk with scrolls of paper attached to wall behind her., undated

Notes: Card Number: 418
Category: office study
Copy negative: 93-4423
Gilbreth image: 210.399
Information on photo: 210.399

318949.0461 bar chart, undated

Notes: Card Number: 50
Category: business and apparatus of motion study
Copy negative: 93-44245

318949.0462 simultaneous motion cycle (simo) chart, GL2, undated

Notes: Card Number: 49
Category: business and apparatus of motion study
Copy negative: 93-4425
Gilbreth image: 17417
Information on photo: 17417

318949.0463 Bar charts, Dec. 7, 1914

Notes: Card Number: 47
Category: business and apparatus of motion study
Copy negative: 93-4427
Information in photo: 7.XII250

318949.0464 Large board with notes clipped to it. Labeling in German., Dec. (?) 8, 19??

Notes: Card Number: 210
Category: business and apparatus of motion study
Copy negative: 93-4428
Information in photo: 257
Information on photo: 8XII.527

Location of subject: Germany

318949.0465 Route map (?) standing up in large room lined with sinks., 28-Mar-19

Notes: Card Number: 350
Category: business and apparatus of motion study
Copy negative: 93-4426
Information in photo: Bldg. C1st floor
Information on photo: 12103-28=19

318949.0466 Bar charts, Dec. 7, 1914

Notes: Card Number: 45
Category: business and apparatus of motion study
Copy negative: 93-4429
Information on photo: 7.XII250

318949.0467 Large drafting room with factory layout (?) mounted on a board and sitting in foreground. Calendar with image of women off to the right., undated

Notes: Card Number: 44
Category: business and apparatus of motion study
Copy negative: 93-4430

318949.0468 Detail of chart showing factory operation., 1-Jul-19

Notes: Card Number: 276
Category: business and apparatus of motion study
Copy negative: 93-4441
Information on photo: 13687-1-19

318949.0469 Large panel with plan of factory. In background a line of sinks is visible., 14-Mar-19

Notes: Card Number: 275
Category: business and apparatus of motion study
Copy negative: 93-4442
Information in photo: Bldg A9123-14-19
Information on photo: 9123-14-19

318949.0470 Detail of chart showing flow of factory operation., 1-Jul-19

Notes: Card Number: 274
Category: business and apparatus of motion study
Copy negative: 93-4443
Information on photo: 13687-1-19

318949.0471 Office chron filing system? Shelves filled with numbered boxes. Tops of shelving units are marked with the months of the year., undated

Notes: Card Number: 32
Category: office study

Copy negative: 93-4444
 Gilbreth image: 210.153
 Information on photo: 210.153

318949.0472 Interior corridor of a factory (New England Butt Company) with a display case of books. Sign reads Public Library Branch, for use of all employees, apply at information bureau. The image depicts the Providence Public Library branch which the Gilbreths had established in the Fall of 1912., 1912 c.

Notes:

Card Number: 134

Category: betterment

Collection: NMAH

Copy negative: 93-4440

Information on photo: Frank B. Gilbreth

Job name: New England Butt Company, Providence, RI

Job number: 610

Related captions: "P59 Public Library Branch in an industrial plant--a method of providing recuperation from fatigue." (courtesy of Dave Ferguson via GPP).

"LLI. Cooperating with the Public Librarian for the education of the workman. This window showing various books supplied by the libraries is located right adjoining the window where the men come to get thier new work tickets from the Planning Department and they can thus utilize their periods of "unavoidable delay" [a therblig] by looking over the books and deciding which one they want." GPP NF1/0019 vol. III.

"A plant library is becoming a regular institution. It is usually one of the first things introduced by the welfare or betterment department...In a typical New England plant [i.e, New England Butt] the librarian of the city was more than willing to cooperate. He asked the plant to supply a list of the books which he should send. His letter was discussed in the foremen's meeting, and every ember present helped by submitting a list of books that he had read and enjoyed most in his life. From these lists a list of fifty books was made up and sent to the librarian, who pronounced it the best list that he had ever seen. The books were promptly brought to the plant, and put ina convenient place where every member of the organizationcould see the titles and borrow them...." for a fuller discussion, see the material from which this quote (pp. 73-74) is drawn: Frank B Gilbreth and Lillian M. Gilbreth Fatigue Study: the Elimination of Humanity's Greatest Unnecessary Waste; A First Step in Motion Study (NY: Sturgis and Walton, 1916; reprint NY: The MacMillan Company, 1919): 54-75.

Location of subject: New England Butt Company, Providence, RI

318949.0473 Standing male at wall mounted desk next to time card (?) rack., undated

Notes:

Card Number: 67

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-4436

318949.0474 Six pages of hand written manuscript pinned to a wall covered in floral wallpaper., undated

Notes: Card Number: 41

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-4437

318949.0475 Interior corridor of a factory (New England Butt Company) with a display case of books. Sign reads Public Library Branch, for use of all employees, apply at information bureau. The image depicts the Providence Public Library branch which the Gilbreths had established in the Fall of 1912., 1912 c.

Notes: Card Number: 140

Category: betterment

Collection: NMAH

Copy negative: 93-4438

Information on photo: Frank B. Gilbreth

Job name: New England Butt Company, Providence, RI

Job number: 610

Related captions: "P59 Public Library Branch in an industrial plant--a method of providing recuperation from fatigue." (courtesy of Dave Ferguson via GPP).

"LLI. Cooperating with the Public Librarian for the education of the workman. This window showing various books supplied by the libraries is located right adjoining the window where the men come to get thier new work tickets from the Planning Department and they can thus utilize their periods of "unavoidable delay" [a therblig] by looking over the books and deciding which one they want." GPP NF1/0019 vol. III.

"A plant library is becoming a regular institution. It is usually one of the first things introduced by the welfare or betterment department...In a typical New England plant [i.e, New England Butt] the librarian of the city was more than willing to cooperate. He asked the plant to supply a list of the books which he should send. His letter was discussed in the foremen's meeting, and every member present helped by submitting a list of books that he had read and enjoyed most in his life. From these lists a list of fifty books was made up and sent to the librarian, who pronounced it the best list that he had ever seen. The books were promptly brought to the plant, and put in a convenient place where every member of the organization could see the titles and borrow them...." for a fuller discussion, see the material from which this quote (pp. 73-74) is drawn: Frank B Gilbreth and Lillian M. Gilbreth *Fatigue Study: the Elimination of Humanity's Greatest Unnecessary Waste; A First Step in Motion Study* (NY: Sturgis and Walton, 1916; reprint NY: The MacMillan Company, 1919): 54-75.

Location of subject: New England Butt Company, Providence, RI

Subject names: New England Butt Company, Providence, RI

318949.0476 Chronocyclegraph of male in room with much gridding., undated

Notes: Card Number: 82

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5056

Information in photo: 76

Information on photo: GL363

318949.0477 Chronocyclegraph of seated female doing unidentified work., undated

Notes: Card Number: 490

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5058

Gilbreth image: see 17673?

318949.0478 Cyclegraph of seated female doing unidentified work., undated

Notes: Card Number: 11

Category: light assembly study

Copy negative: 93-5057

Gilbreth image: 17673

Information on photo: 17673

318949.0479 Cyclegraph of female seated behind gridded table in front of gridded background doing unidentified work., undated

Notes: Card Number: 81

Category: light assembly study

Copy negative: 93-5079

Information on photo: 18182

318949.0480 Double exposed cyclegraph of female (?) seated at table in front of gridded background. Motion clock visible., undated

Notes: Card Number: 6

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5063

318949.0481 Chronocyclegraph of female staking (?) Photograph taken through penetrating screen. One motion clock is visible., August 23, 1917(?)

Notes: Card Number: 70

Category: light assembly study

Copy negative: 93-5071

Information in photo: 8-23-17(?)staking ?key ? Miss Ro??

Information on photo: 17648.A

318949.0482 Chronocyclegraph of seated female doing unidentified work.
One motion clock visible., undated

Notes: Card Number: 559
Category: light assembly study
Copy negative: 93-5061
Gilbreth image: 17654.A
Information on photo: 17654.A

318949.0483 Chronocyclegraph of female doing unidentified work., undated

Notes: Card Number: 558
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-5059
Gilbreth image: GL124
Information on photo: GL124

318949.0484 Chronocyclegraph of seated female doing unidentified work,
undated

Notes: Card Number: 488
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-5060
Gilbreth image: GL124
Information on photo: GL124

318949.0485 Chronocyclegraph of seated female doing unidentified work.
Two motion clocks are visible. Photograph taken through penetrating screen.,
undated

Notes: Card Number: 560
Category: light assembly study
Copy negative: 93-5062
Information on photo: 17638.A

318949.0486 Chronocyclegraph of female in front of gridded background. She
is doing unidentified work seated at a gridded table. Three motion clocks are
visible and her feet are supported by a curved foot rest., undated

Notes: Card Number: 483
Category: light assembly study
Copy negative: 93-5070
Information in photo: 7
Information on photo: 1774 (?)

318949.0487 Chronocyclegraph of female seated at a table doing unidentified
work. Two motion clocks visible. Photograph taken through a penetrating
screen., undated

Notes: Card Number: 162
Category: light assembly study
Copy negative: 93-5069
Gilbreth image: 17439

Information on photo: 17439

318949.0488 Cyclegraph of male operating a drill press while another male observes. Camera on tripod in foreground., undated

Notes: Card Number: 9
Category: machine shop study
Copy negative: 93-5068
Gilbreth image: 610 13
Information on photo: G10 13
Job name: New England Butt Company

318949.0489 Chronocyclegraph of female standing behind gridded table and in front of gridded background., undated

Notes: Card Number: 8
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-5067

318949.0490 Chronocyclegraph of female sitting behind a gridded table and in front of gridded background. She is doing unidentified work., undated

Notes: Card Number: 487
Category: light assembly study
Copy negative: 93-5066
Gilbreth image: 18186
Information on photo: 18186

318949.0491 Cyclegraph of female standing behind gridded table and in front of gridded background., undated

Notes: Card Number: 80
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-5065

318949.0492 Cyclegraph of male at drill press with another male watching., undated

Notes: Card Number: 62
Category: machine shop study
Copy negative: 93-5080
Information on photo: 610G258
Job name: New England Butt Company

318949.0493 Cyclegraph of male operating a drill press. Motion clock visible., undated

Notes: Card Number: 63
Category: machine shop study
Copy negative: 93-5078
Information in photo: N.E. Butt Co.
Job name: New England Butt Company
Location of subject: New England Butt Providence, RI

318949.0494 Cyclegraph of male workman operating a latehwill being observed by another male., undated

Notes: Card Number: 64
Category: machine shop study
Copy negative: 93-5077
Job name: New England Butt Company

318949.0495 Cyclegraph of female standing at gridded table operating a time stamp (?), undated

Notes: Card Number: 65
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-5076
Information on photo: T.182

318949.0496 Chronocyclgraph of female typing (Anna Gold)., 1916

Notes: Card Number: 66
Category: typing study
Collection: NMAH
Copy negative: 93-5075
Gilbreth image: GL1707
Information in photo: 1707
Job name: Remington Typewriter, Ilion New York
Original caption: "GL-1707 Chronocyclegraph of Miss Gold's motions inserting a new sheet of paper a in Remington Machine. In this work she has beaten all other contestants having taken out a finished sheet of paper and put in a new sheet in less than two seconds."

Related captions: GL-1699A These show two very interesting studies of putting the paper into the typewriter after the previous sheet has been completely written. We have standardized this now down to the point where it requires less than two seconds from the time the last key is struck on the previous sheet before the first key is struck on the first line of the following sheet. This work previously took about five seconds before we motion studied the conditions. GL-1715 Chronocyclegraph studies of Anna Gold, Champion of America, 1916. Note that the light is on her head, right elbow and each forefinger. Notice how little the head and the elbow move. GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916,- and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class

Location of subject: Gilbreth Motion Study Laboratory,
Providence RI

Subject names: Anna Gold

318949.0497 Chronocyclegraph of a female doing unidentified work., undated

Notes: Card Number: 556

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5074

318949.0498 Chronocyclegraph of female doing unidentified work., undated

Notes: Card Number: 557

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5073

318949.0499 Chronocyclegraph of female doing unidentified work., undated

Notes: Card Number: 69

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-5072

318949.0500 interior of house, undated

Notes: Card Number: 664

Category: misc.views

Copy negative: 93-5129

318949.0531 Peerless (?) belt lacing machine, undated

Notes: Card Number: 203

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-7028

Information on photo: T40

318949.0532 Stove (?) on outside of factory wall., 15-Jan-15

Notes: Card Number: 40

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-7027

Information in photo: 343.15.I

Information on photo: 15.I.15T343

318949.0533 Textile machinery in a large room with a gridded floor and a gridded wall in the background., undated

Notes: Card Number: 39

Category: needle trade study

Copy negative: 93-7026

Gilbreth image: 640-51

Information in photo: 640-51Tep. wet60 dry?barometer

318949.0534 Textile machinery in large room with gridded floor and a gridded wall in background, undated

Notes: Card Number: 38
Category: needle trade study
Copy negative: 93-7025
Gilbreth image: 640-50
Information in photo: 640-50Temp. wet60 dry65barometer

318949.0535 Work room with large metal discs, one mounted on a stand., undated

Notes: Card Number: 41
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7029
Gilbreth image: 210-384
Information on photo: 210-384

318949.0536 Machine in room with gridded floor., Thurs. April 26, 19?

Notes: Card Number: 42
Category: needle trade study
Copy negative: 93-7030
Gilbreth image: 1739?
Information in photo: Pressing machine not all here
Information on photo: 1739?

318949.0537 Peerless? belt lacing machine, undated

Notes: Card Number: 202
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7037
Information on photo: 1.x.14T40

318949.0538 Factory interior with conveyors., undated

Notes: Card Number: 4
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7033
Information on photo: 200.053

318949.0539 Special two level sewing table. Singer head on bottom level painted black and Singer head on top painted white. Both heads fitted with special mechanisms. Both plates partially broken., undated

Notes: Card Number: 402
Category: needle trade study
Copy negative: 93-7037
Information on photo: 1700.155

318949.0540 Interior of box factory, undated

Notes: Card Number: 3
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7032
Information in photo: box factory pasting machine to ...

318949.0541 A big pile of large drill bits stacked up in a machine shop (?), undated

Notes: Card Number: 4
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7035
Information on photo: 210.307

318949.0542 Storage for drill bits and other tooling. Each tool has its own cubbyhole and is labeled., undated

Notes: Card Number: 8
Category: storage old and new
Copy negative: 93-7039

318949.0543 Storeroom with neat cubbyholes for machine shop supplies. Sign on right appears to be in German., undated

Notes: Card Number: 5
Category: storage old and new
Copy negative: 93-7036

318949.0544 Floor to almost ceiling storage cabinet with specialized cubbyholes for forms., 2-Mar-15

Notes: Card Number: 7
Category: storage old and new
Copy negative: 93-7038
Information in photo: Slate reads: Gilbreth day month 1915403.2.III

318949.0545 Factory storage area with materials neatly stacked in numbered bins., 3-Mar-19

Notes: Card Number: 240
Category: storage old and new
Copy negative: 93-7031
Information in photo: 617
Information on photo: 3/19/6173
Job number: 617

318949.0546 Rack for cutting tools. Empty slots have employee tool checks hanging on a hook., undated

Notes: Card Number: 60

Category: storage old and new

Copy negative: 93-7041

Information on photo: 210.374

318949.0547, 10 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 201

Category: machine shop study

Copy negative: 93-7042

Information in photo: 1090

Information on photo: 10903-21-19

318949.0548 Work bench, barely visible, with soldering tools mounted on board on wall. Sign on wall says Important Notice...To protect you own health...(check original), undated

Notes: Card Number: 68

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-7043

318949.0549 Work bench, barely visible, with soldering tools mounted on board on wall. Sign on wall says Important Notice...To protect you own health...(check original), undated

Notes: Card Number: 69

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-7045

318949.0550, 16 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 200

Category: machine shop study

Copy negative: 93-7040

Information in photo: 1092

Information on photo: 10923-21-19

318949.0551, 10 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 203

Category: machine shop study

Copy negative: 93-7044

Information in photo: 1089

Information on photo: 10893-21-19

318949.0552, 10 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 204

Category: machine shop study

Copy negative: 93-7046

Information in photo: 1088

Information on photo: 10883-21-19

318949.0553 16 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 199
Category: machine shop study
Copy negative: 93-7047
Information in photo: 1092
Information on photo: 10923-21-19

318949.0554, 10 cutting tools laid out on a white cloth, 21-Mar-19

Notes: Card Number: 205
Category: machine shop study
Copy negative: 93-7048
Information in photo: 1088
Information on photo: 10883-21-19

318949.0555, 10 cutting tools laid out on a white cloth., 21-Mar-19

Notes: Card Number: 202
Category: machine shop study
Copy negative: 93-7049
Information in photo: 1089
Information on photo: 10893-21-19

318949.0556 View looking down on urban street with military men walking and galloping horses., undated

Notes: Card Number: 37
Category: scenic view
Copy negative: 93-7409

318949.0557 Buildings in an alpine valley., undated

Notes: Card Number: 78
Category: scenic view
Copy negative: 93-7390
Information on photo: ?rte de Schluderbach a Cortina. 1253

318949.0558 Stone steps and seats of an outdoor theater in Pompei, Italy., undated

Notes: Card Number: 26
Category: scenic view
Copy negative: 93-7393
Information on photo: Pompei -P.I Theatre. 1590
Location of subject: Pompei, Italy

318949.0559 Castle courtyard, Dec-14

Notes: Card Number: 25
Category: scenic view
Copy negative: 93-7395
Information on photo: The Casstle Milan Italy Dec 1914

Location of subject: Milan, Italy

318949.0560 Tropical garden, structure barely visible in background., undated

Notes: Card Number: 24

Category: scenic view

Copy negative: 93-7401

Information on photo: Fijucca - Jardins Exatioues 1785 ?

318949.0561 One male and two females in an unidentified interior. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Don't know. Ernestine doesn't know either.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'James M. Dodge and wife?' Dodge was manager of Link-Belt, one of Taylor's best know installations, and a friend of the Gilbreths., undated

Notes: Card Number: 74

Category: Gilbreth Family

Copy negative: 93-7394

318949.0562 Urban street scene. Visible are cars, elegantly dressed people, a bus, an equestrian statue, and buildings. Large sign on top of the bus reads Brikett Olse Brikett., undated

Notes: Card Number: 152

Category: scenic view

Copy negative: 93-7402

318949.0563 Blurry photo taken from a building looking down on a street with many people walking on sidewalk, in the background are more buildings., undated

Notes: Card Number: 21

Category: scenic view

Copy negative: 93-7397

318949.0564 People walking along tree line street with cathedral in background., undated

Notes: Card Number: 71

Category: scenic view

Copy negative: 93-7398

Information on photo: Cologne - Eglise Saint ?? check original

Location of subject: Germany

318949.0565 Five people standing on rocky plain with volcanic mountain in background., undated

Notes: Card Number: 19

Category: scenic view

Copy negative: 93-7392

Information on photo: Vesuve Et Champ de Lave 1582

318949.0566 An alpine valley, undated

Notes: Card Number: 42

Category: scenic view

Copy negative: 93-7399

Information on photo: Rte de Cortina a Schluderbach 1260

318949.0567 Water fall, undated

Notes: Card Number: 143

Category: scenic view

Copy negative: 93-7396

Information on photo: Chutes du Rhin. 1177

318949.0568 Snow covered mountain pass with a few buildings visible.,
undated

Notes: Card Number: 212

Category: scenic view

Copy negative: 93-7400

Information on photo: Entre Goeschener et le pont du diable
1172

318949.0569 People looking out on a lake and a city on the other shore.,
undated

Notes: Card Number: 39

Category: scenic view

Copy negative: 93-7391

Information on photo: Evant Pernambuco. 1787

318949.0570 Male and females in immediate foreground looking at large river
and walled city (or castle)., undated

Notes: Card Number: 36

Category: scenic view

Copy negative: 93-7412

Information on photo: Chateau de Rheinfels. 1412

318949.0571 Outdoor garden scene of agavee (century) plants, undated

Notes: Card Number: 35

Category: scenic view

Copy negative: 93-7411

318949.0572 Rushing river rapids or falls with stone arched bridge in
background., undated

Notes: Card Number: 379

Category: scenic view

Copy negative: 93-7403

Information on photo: Chutes du Rhin. 1179

318949.0573 Narrow urban street crowded with people walking. Policeman or military officer walking in center of street, sweeper (?) on sidewalk, many people visible in background ., undated

Notes: Card Number: 84
Category: scenic view
Copy negative: 93-7404
Information on photo: Cologne - la Hochstrasse. 1417
Location of subject: Cologne, Germany (?)

318949.0574 Street scene in alpine village., undated

Notes: Card Number: 83
Category: scenic view
Copy negative: 93-7405
Information on photo: Schluderbach - les hotels 1252

318949.0575 Street scene. Adult males and boys doing some type of work (canning ?). Caned carriage visible in background., undated

Notes: Card Number: 161
Category: scenic view
Copy negative: 93-7408
Information on photo: Naples Selliers en plein vent. 1581
Location of subject: Naples, Italy (?)

318949.0576 Motion study class or demonstration. 10 seated male and females watch seated female (worker) and standing male and female. Some type of display board visible on right., undated

Notes: Card Number: 81
Category: business and apparatus of motion study
Copy negative: 93-7406
Information on photo: 587 (?)

318949.0577 Male in shirt and tie seated at desk in front of filing cabinets. Andre pen organizer visible in left foreground., undated

Notes: Card Number: 80
Category: office study
Copy negative: 93-7410

318949.0578 Female seated at gridded table behind penetrating screen in front of gridded wall. Six men in coat and tie cluster around seated female. Two motion clocks barely visible., undated

Notes: Card Number: 437
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-7389
Gilbreth image: 17000.15
Information in photo: ???...dull ...ury...
Information on photo: 17000.15

318949.0579 One female seated at a table behind a penetrating screen and in front of a gridded wall. A camera on a tripod is visible in the foreground. Six males in coat and tie and one female in a large polka dot dress cluster around the seated female., 1917?

Notes: Card Number: 436
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-7388
Gilbreth image: 17000.13
Information on photo: 17000.13

318949.0580 Two males in coat and tie, one seated one standing, and two standing in background behind glazed partition. Seated male holds an open catalog on his lap. Visible in background is a stenciled plate rail and an ornate vent grill., March 22, 1915 (check year on orig)

Notes: Card Number: 424
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7407
Information in photo: 423.22.III
Information on photo: 22.III.15T468

318949.0581 Double exposure in a surgical theater. Gridded wall in background. Surgical crew wear gowns, masks, and caps with identifying letters (A & B). The patient appears to be Frank Gilbreth undergoing mouth surgery., undated

Notes: Card Number: 405
Duplicatae of 318949.0230
Category: surgical & dental study
Copy negative: 80-20602
Gilbreth image: 17218
Information on photo: 17218

318949.0582 Motion study class or demonstration. Female sits on raised platform at gridded table in front of eleven seated men and women. Frank Gilbreth stands off to the left. [Copy photograph printed backwards.], undated

Notes: Card Number: 207
Category: business and apparatus of motion study
Copy negative: 93-7896
Information in photo: 477.14.?

318949.0583 Two seated males in a domestic interior. Man on left holds an unidentified object. An open box of cigars is visible on the right. [Top right corner of plate is broken.], 1916?

Notes: Card Number: 50
Category: misc.views
Copy negative: 93-7897
Gilbreth image: 16255

Information on photo: 16255

318949.0584 Six males, three seated and three seated in an office. Some are dressed in military uniforms. Frank Gilbreth is seated on far right., undated

Notes: Card Number: 293
Category: military study
Copy negative: 93-7898
Information on photo: 17000.46

318949.0585 Six standing males. Frank Gilbreth is in the middle of the group., undated

Notes: Card Number: 52
Category: business and apparatus of motion study
Copy negative: 93-7899
Information on photo: 28.XJ.14T176

318949.0586 Male seated in unidentified front yard. [This image may be printed mirror image.], undated

Notes: Card Number: 283
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-7900

318949.0587 Three males standing in front of car . Possible Lillian Moller's brothers., undated

Notes: Card Number: 129
Category: business and apparatus of motion study
Copy negative: 93-7901
Information on photo: 17595

318949.0588 Standing male and seated female in motion study analysis room (?). Female is seated at typewriter. Male is wearing a suit and has cyclegraph lights attached to knees and forehead., undated

Notes: Card Number: 394
Category: business and apparatus of motion study
Copy negative: 93-7902
Gilbreth image: 1700.164
Information on photo: 1700.164

318949.0589 Two males (one in uniform) standing in room with stenciled plate rail., 1-Apr-15

Notes: Card Number: 393
Category: business and apparatus of motion study
Copy negative: 93-7903
Information on photo: 1.4.15T456

318949.0590, Seated male in unidentified front yard., undated

Notes: Card Number: 249

Category: misc.views

Copy negative: 93-7905

318949.0591 Sixteen males standing in machine shop., undated

Notes: Card Number: 279

Category: machine shop study

Copy negative: 93-7904

318949.0592 Female, Carrol Cross, in unidentified front yard., undated

Notes: Card Number: 248

Category: business and apparatus of motion study

Copy negative: 93-7906 (?)

318949.0593 Seated male (James Dodge) in unidentified front yard., undated

Notes: Card Number: 264

Category: business and apparatus of motion study

Copy negative: 93-7907

318949.0594 Three males stand amidst tropical vegetation. One tree in foreground has large ferns (?) growing on the trunk. A portion of a house is visible in the background., undated

Notes: Card Number: 38

Category: scenic view

Copy negative: 93-7910

Information on photo: fijuca - jardins exotiques 1786

318949.0595 Female standing on a porch with ornate columns. In the background is a palm tree. (Left top corner of plate broken.) Grandmother Moller in Piedmont home. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Annie Degler Moller, in California, by the palm trees on the porch of their Prospect Avenue, Oakland, house. 1917?' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Anne Moller, Oakland., undated

Notes: Card Number: 245

Category: Gilbreth Family

Copy negative: 93-7909

Location of subject: Piedmont, CA

318949.0596 Three males in an office. Frank Gilbreth is seated and staring out a window (?) Another man is seated and looks into a stereo viewer. The third man stands and looks on., undated

Notes: Card Number: 180

Category: business and apparatus of motion study

Copy negative: 93-7911

318949.0597 Female standing outside amidst small conifers. A portion of a trellis is visible., undated

Notes: Card Number: 246
Category: Gilbreth Family
Copy negative: 93-7908

318949.0598 Gilbreth family auto Foolish carriage with Frank, Lillian, and eleven children visible. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Montclair, NJ. SEE ALSO entry for acc. number 318949.0949, where the figures have been identified as follows: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'The famous Pierce Arrow (with right hand drive). Photo taken August 1920 probably on Nantucket. From back row left to right Jack; Dab; Fred; Bill - next row: Martha, Ernestine, Anne; Lil; Frank; parents Frank and Lillian, holding Bob (born July 1920). But Ernestine says 'Montclair NJ., undated

Notes: Card Number: 24
Category: Gilbreth Family
Copy negative: 94-3456
Information on photo: 220.156

318949.0599 Adult male, one adult female and four children sitting in the grass. Visible in the background are three houses. Back row left to right Frank and his niece Carrol Cross. Front row left to right possibly Martha and Frank and two neighborhood children. Photo taken in Buttonwoods, RI where the family lived. Part of the plate is broken, undated

Notes: Card Number: 303
Category: Gilbreth Family
Copy negative: 93-7912
Location of subject: Buttonwoods, RI

318949.0600, Frank Gilbreth, three adult females, and five children standing on a lawn. Left to right Grandmother Martha Bunker Gilbreth, Carrol Cross, Bill Gilbreth, Lillian Gilbreth, Frank Gilbreth Jr., Frank Gilbreth. Front row left to right Martha Gilbreth, Ernestine Gilbreth, Anne Gilbreth., 1915 ?

Notes: Card Number: 178
Category: Gilbreth Family
Copy negative: 93-7913
Information on photo: D
Location of subject: Buttonswood, RI

318949.0601 Two adult females sitting on chairs on a deck in the woods. Josephine Moller Van Horn and 1st cousin (a Brown) Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Two of Lillian's sisters, on the back deck of the Moller summer 'cottage', in Inverness, California. (I don't know which). In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Inverness. Aunt Jo. Brown cousin.', undated

Notes: Card Number: 224
Category: Gilbreth Family

Copy negative: 93-7914

Location of subject: Inverness, CA

318949.0602 Frank Gilbreth, three adult females and three children standing on a lawn. Back row left to right Carrol Cross, Anne Gilbreth Cross, Grandma Gilbreth, Frank Gilbreth. Front row left to right Anne Gilbreth, Ernestine, Martha Gilbreth., undated

Notes: Card Number: 300

Category: Gilbreth Family

Copy negative: 93-7915

Location of subject: Buttonwoods, RI

318949.0603 Adult unidentified female in bathing suit sitting on a beach (not a Gilbreth.) Gilbreth child in background., undated

Notes: Card Number: 96

Category: Gilbreth Family

Copy negative: 93-7916

Information on photo: FG 102

318949.0604 Three adult females standing on porch of clapboard house. Left to right unidentified woman, Lillian Gilbreth, Annie Moller. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'On the porch of her house, 77 Brown Street, Providence. Lillian in Center, her mother to her right (Annie Moller). To the left--not sure, but may be one of Lillian's sisters.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Providence RI. left to right: Eleanor [LMG's sister]; Lillian; mother Annie D. Moller, standing on porch of their house at Brown street., undated

Notes: Card Number: 174

Category: Gilbreth Family

Copy negative: 93-7917

Information on photo: GF75

Location of subject: Providence, RI 77 Brown st.

318949.0605 Clapboard house with two adult females standing on the porch of Providence house. Lillian Gilbreth and Annie Moller., undated

Notes: Card Number: 94

Category: Gilbreth Family

Copy negative: 93-7918

Information on photo: GF77

Location of subject: Providence, RI 77 Brown St.

318949.0606 Messy storeroom, undated

Notes: Card Number: 40

Category: storage old and new

Copy negative: 93-9599

Information in photo: various tools etc.

Information on photo: T57

318949.0607 Large room with much unidentified machinery visible., undated

Notes: Card Number: 39

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-9600

Information on photo: 200034

318949.0608 Large room with table and small drill press in foreground. In the background are large stacks of auto frames(?). [Photograph printed mirror image.], 14-Mar-19

Notes: Card Number: 241

Category: automobile assembly study

Copy negative: 93-9601

Information in photo: 9423-14-19

318949.0609 Unidentified work area, undated

Notes: Card Number: 37

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-9602

Information on photo: T55

318949.0610, Male wearing suit and hat pushing lift truck and pallet which is piled high with boxes. Gridded background visible., 11-Nov-15

Notes: Card Number: 36

Category: materials handling study

Copy negative: 93-9603

Information in photo: 385.11.11

318949.0611 Looking down an aisle of storeroom cubbyholes. Two motion clocks are visible., 27-Jan-21

Notes: Card Number: 34

Category: storage old and new

Copy negative: 93-9605

Information in photo: stores racks 1-27-21 H-1ex. 5 min.

Information on photo: 210-106

318949.0612 Small table with casters and adjusting mechanism., 28-Mar-19

Notes: Card Number: 173

Category: materials handling study

Copy negative: 93-9604

Information in photo: 3/28/191199

Information on photo: 11993-28-19

318949.0613 Male wearing a suit and hat pushes a lift truck and pallet which is stacked high with boxes. Gridded background visible on the right., 11-Nov-15

Notes: Card Number: 33
Category: materials handling study
Copy negative: 93-9606
Information on photo: 383.11.11

318949.0614 Lift truck partially underneath a pallet stacked high with boxes., 11-Nov-15

Notes: Card Number: 32
Category: materials handling study
Copy negative: 93-9607
Information on photo: 382.11.11152

318949.0615 Male wearing a suit and hat pushing a lift truck and pallet which is piled high with boxes., 11-Nov-15

Notes: Card Number: 31
Category: materials handling study
Copy negative: 93-9608
Information on photo: 386.11.11

318949.0616 Bins on casters filled with parts., undated

Notes: Card Number: 30
Category: assembly study
Copy negative: 93-9609
Information on photo: P49

318949.0617 Industrial interior showing a large gravity slide., undated

Notes: Card Number: 29
Category: materials handling study
Copy negative: 93-9610

318949.0618 Interior view showing wheel barrow in front of a large pile of sand., undated

Notes: Card Number: 28
Category: materials handling study
Copy negative: 93-9611
Information on photo: 230.129

318949.0619 Bins on casters filled with parts., undated

Notes: Card Number: 27
Category: materials handling study
Copy negative: 93-9612

Box 5

318949.0620 Lift truck and pallet in front of gridded background., 20-Apr-15

Notes: Card Number: 24

Category: materials handling study

Copy negative: 93-9615

Information on photo: 20.4.15T484

318949.0621 to 318949.0840

318949.0621 Drying room transfer trucks in front of a bulletin board., 11-Nov-14

Notes:

Card Number: 26

Category: materials handling study

Copy negative: 93-9613

Information in photo: Drying room transfer trucks

Information on photo: 11.XI.14T58

Location of subject: Germany

318949.0622 Male pushing a lift truck which is piled high with boxes. Gridded background and route map (?) visible., 1-Mar-15

Notes:

Card Number: 257

Category: materials handling study

Copy negative: 93-9614

Information in photo: 4011.111

318949.0623 Male cranking a lift cart and pallet which is piled high with boxes., 1-Mar-15

Notes:

Card Number: 178

Category: materials handling study

Copy negative: 93-9616

Information in photo: 399.1.111

Information on photo: 1.111.15T399

318949.0624 Two males standing outside at unidentified apparatus next to two wheeled cart., 1-Jan-15

Notes:

Card Number: 177

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-9617

Information in photo: 365. 19.1

Information on photo: 19.1.15T365

318949.0625 Large room with drafting table and two piles of large panels. A row of sinks line one wall of the room., 21-Mar-19

Notes:

Card Number: 159

Category: business and apparatus of motion study

Copy negative: 93-9618

Information on photo: 10983-21-19

318949.0626 Male wearing a suit and hat pushing a lift truck and pallet which is piled high with boxes. Gridded background off to one side., 11-Nov-15

Notes: Card Number: 20
Category: materials handling study
Copy negative: 93-9619
Information in photo: 386.11.11

318949.0627 Exterior of factory showing empty bins on casters., 7-Mar-19

Notes: Card Number: 156
Category: materials handling study
Copy negative: 93-9621
Information on photo: 7/19/8073

318949.0628 Male wearing suit and hat pushing a lift truck which is piled high with boxes. To the right a gridded background is visible., 11-Nov-15

Notes: Card Number: 19
Category: materials handling study
Copy negative: 93-9620
Information in photo: 386.11.11

318949.0629 Male in suit and hat pushing lift truck and pallet which is piled high with boxes., 11-Nov-15

Notes: Card Number: 16
Category: materials handling study
Copy negative: 93-9623
Information in photo: 385.11.11

318949.0630 Male in suit and hat pushing lift truck and pallet which is piled high with boxes. Gridded background visible on left., 11-Nov-15

Notes: Card Number: 17
Category: materials handling study
Copy negative: 93-9622
Information in photo: 385.11.11

318949.0631 Male in suit and hat pushing a lift truck and pallet which is stacked high with boxes. Gridded background visible., November 11, 19??

Notes: Card Number: 14
Category: materials handling study
Copy negative: 93-9625
Information in photo: 384.11.11

318949.0632 Table laying on its side showing casters and adjusting mechanism., 28-Mar-19

Notes: Card Number: 151
Category: materials handling study
Copy negative: 93-9626
Information in photo: 12043/28/19

Information on photo: 12043-28-19

318949.0633 Bins fillen with parts, 14-Mar-19
Notes: Card Number: 153
Category: materials handling study
Copy negative: 93-9624
Information on photo: 9293-14-19

318949.0634 Lift truck partially under pallet piled high with boxes., Nov. 11, 1915
Notes: Card Number: 12
Category: materials handling study
Copy negative: 93-9627
Information in photo: 382.11.11
Information on photo: 152

318949.0635 Detail of foundry operation. sand sifter in foreground, stack of copes and drags on right., undated
Notes: Card Number: 11
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-9628
Information on photo: 230.116

318949.0636 Two wheeled paper transport wagon loaded with large reams of paper in front of industrial building that has ornate lamp posts., Dec. 11, 1914)
Notes: Card Number: 213
Category: materials handling study
Copy negative: 93-9629
Information in photo: paper transport wagon
Information on photo: T82
Location of subject: Germany

318949.0637 Lift truck in front of gridded background., 21-Apr-15
Notes: Card Number: 9
Category: materials handling study
Copy negative: 93-9630
Information in photo: 493.21.4
Information on photo: 21.4.15T493

318949.0638 Large room with supply trucks piled high with material., undated
Notes: Card Number: 8
Category: materials handling study
Copy negative: 93-9631
Gilbreth image: 300.005
Information on photo: 300.005

318949.0639 View taken looking underneath a table on casters in front of a gridded background., undated

Notes: Card Number: 7
Category: misc.views
Copy negative: 93.9632
Gilbreth image: 17739
Information on photo: 17739

318949.0640 Lift truck partially underneath a pallet in front of a gridded screen., 20-Apr-15

Notes: Card Number: 6
Category: materials handling study
Copy negative: 93-9634
Information in photo: 48520.4
Information on photo: 20.4.15T485

318949.0641 Lift truck in machine shop used to deliver and pick-up a parts bin (also on wheels.), undated

Notes: Card Number: 7
Category: materials handling study
Copy negative: 93-9633

318949.0642 Female seated at gridded table surrounded by shoe parts., 21-Apr-17

Notes: Card Number: 681
Category: shoe making study
Copy negative: 93-11454
Information in photo: 646 Artic QatsLaura Rathburn method21 Apr - '17
Information on photo: 17349

318949.0643 Female wearing special arm bands seated at gridded table and surrounded by shoe parts., 21-Apr-17

Notes: Card Number: 680
Category: shoe making study
Copy negative: 93-11453
Information in photo: 646 Artic QatsLaura Rathburn method21 Apr - '17
Information on photo: 17345

318949.0644 Shoe making study set up, gridded table with rack of shoes to one side., 16-May-17

Notes: Card Number: 678
Category: shoe making study
Copy negative: 93-11451
Information in photo: 64616 May 17high stanch????

Information on photo: 17437

318949.0645 Two females and one male assembling shoes., undated

Notes: Card Number: 689
Category: shoe making study
Copy negative: 93-11462
Information on photo: 17115

318949.0646 Shoe making set-up showing several gridded tables and a rack of shoes., undated

Notes: Card Number: 679
Category: shoe making study
Copy negative: 93-11452
Information on photo: 17342

318949.0647 Shoe parts spread out on gridded workbench. Rack for shoe lasts., undated

Notes: Card Number: 688
Category: shoe making study
Copy negative: 93-11461
Information in photo: 64-6RichmondJ Schwartz method
Information on photo: 17353

318949.0648 Specialized shoe last fixture on gridded table., 16-May-17

Notes: Card Number: 687
Category: shoe making study
Copy negative: 93-11460
Information in photo: 646 - 16 May - '17Ball and socket holder for last made by Reid B. Scott
Information on photo: 17436

318949.0649 Motion study set-up. Gridded workbench painted white with specialized fixtures for assembling carburetors (?). Clock visible on left., May 21, 1919 (?)

Notes: Card Number: 740
Category: automobile assembly study
Copy negative: 93-11459

318949.0650 Gridded workbench painted white with specialized fixtures for assembling carburetors. Two motion clocks visible., 21-May-19

Notes: Card Number: 737
Category: automobile assembly study
Copy negative: 93-11456
Information in photo: 2 ton Carb5-21-191365
Information on photo: 13655-21-19

318949.0651 Motion study of man wearing an apron and using crutches. Two motion clocks and gridded background visible., March 1916-December 1917 (dates of Remington contract)

Notes:

Card Number: 685

Category: disabled study

Collection: NMAH

Copy negative: 93-11458

Gilbreth image: not numbered, but related series: 17954-17973

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98).

see related caption for Gilbreth image (17966), as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally).

see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. ne of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his informities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very littlemotion in his back and neck. He has, however, invented and made for his own use special devices

such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.0652 Standing one armed, one eyed dentist working on seated female patient. Dentist appears to actually have two arms with one hidden beneath coat., undated

Notes: Card Number: 684
Category: disabled study
Copy negative: 93-11457
Information on photo: 17042

318949.0653 Disabled study of man wearing an eye patch and telephone headset seated in front of cash register. Sign on cash register says Get a Receipt, undated

Notes: Card Number: 682
Category: disabled study
Collection: NMAH
Copy negative: 93-11455
Information on photo: 1728938

318949.0654 Standing one armed, one eyed, dentist working on seated female patient. Dentist appears to actually have second arm hidden beneath coat. Dentist may also be missing (or pretending to be missing) legs from below the knees., undated

Notes: Card Number: 693
Category: disabled study
Copy negative: 93-11466
Gilbreth image: 17039

318949.0655 Cyclegraph of female seated in front of gridded background at gridded table doing unidentified assembly work. Three motion clocks visible., undated

Notes: Card Number: 692
Category: light assembly study
Copy negative: 93-11465
Information in photo: 17121
Information on photo: 17958

318949.0656 Cyclegraph of female seated in front of gridded background at gridded table doing a complex job involving a brayer., undated

Notes: Card Number: 691
Category: light assembly study

Copy negative: 93-11464

Information on photo: 18183

318949.0657 Hortense Stollnitz typing with cyclegraph lights on head and hands. The cyclegraph line near her hands indicate a right-hand carriage return while typing. Note what looks like a gold medal around her neck., 1916

Notes: Card Number: 690

Category: typing study

Collection: NMAH

Copy negative: 93-11463

Gilbreth image: 16184

Job name: Remington Typewriter, Ilion NY

Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. 16178 Chronocyclegraph of champion of the world on a typewriter which has the carriage return hook on the right hand side. This was used in checking up designs of typewriters as to the location and kind of carriage return hook, showing that the chronocyclegraph applied to machine movements as well as to hand movements, and that no hand movements can be made correctly without due consideration of the machine design. 16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company. 16180.N. Micromotion studies of champion of the world typists. This work was done in our laboratory in 1916. 16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures were taken. Her gold medal can be seen in her left hand in #16245. 16191 This shows Miss Stollnitz writing one line and returning the carriage once. Note the absence of movement on the light on her head and the small amount of the light on the right elbow. This also is not only instructive in typing but it is also interesting in the subject of machine design and shows beyond the possibility of a doubt that other things being equal the carriage return hook should be on the right end of the typewriter carriage and not on the left end, as is shown in the pictures of certain other machines. There are however, other reasons why it should be on the right hand end such as that the left hand is already overworked by the poor standardization of the keyboard and therefore all the work possible should be thrown on the right hand. GL-1683A Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1684 Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1685 Miss Stollnitz, Remington Champion, with cyclegraph lights on head, right elbow and both forefingers. Demonstrates small amount of scope of...

Location of subject: Gilbreth Motion Study Laboratories,
Providence, RI

Subject names: Hortense Stollnitz

318949.0658 Cyclegraph of drillpress operator. Looks like two cycles. Note that the arm is the same as 610-G37; note that the boxes are adjacent to each other, on the same height., 1913

Notes: Card Number: 880

Category: machine shop study

Collection: NMAH

Copy negative: 93-11469

Job name: New England Butt Company

Job number: 610

Related captions: "This series started in 1912 [1913?] and continued from time to time until 1915. The original conditions required a fast workman nine and one-half seconds for all the motions necessary to countersink a hole on a latch handle for a braider, and more often the time was fifteen seconds than nine and a half, the best times that we found, being nine and one half seconds, which was eventually reduced to four and one half seconds. The toteboxes were supported by any means whatever without any attempt at standard location, and the piece was usually picked up in the left hand and countersunk, and then passed to the right hand, which threw it on the right hand side, while the left hand proceeded to pick up another piece." Drill Press captions, NFile 1/0019, vol. 1 part 1 of 2, p. 1."

The adaptation of these cyclegraphs to the work has resulted in some of the most unexpected economies, not the least of which are the direct results of invention, which is suggested as a direct result and also as a byproduct of this method of visualization, analysis, and measurement. In 1913 I took a number of records of different kinds of workmen operating a drill press. The operation consisted of drilling cast iron latch handles for braiders manufactured by the New England Butt Company. The usual thought in connection with such work is that the material should go into one side of the machine and come out the other end. The investigation proved this a mistake, and that instead of having the thought of a continuous straight line moving the thought should be the functionalization of the hands.

"610-G148 is a cyclegraph of an operation on these latch handles. The man is one of the most expert workmen in the entire factory, and his function is that of a teacher. He is also a man who sees that the various machines run at the speed called for by the planning department. BNote in this picture that the portion of the cyclegraph that jumps up in the air is coincident with the dropping of the finished latch handle into the box the line is very wavy, and after it is dropped, the line is quite as straight. The man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, and he has had but

one short practice in making decisions, and you will, therefore, notice that the light at the bottom of the cyclegraph, where he picks up the latch handle, shows a mental process similar to the traditional animal between the two bales of hay, and starved to death because he could not decide upon the sequence in which he should eat the bales of hay. Here is apparently great indecision, although there is no reason whatever for choice. This same indecision is shown in all the pictures of this man taken at this time, but was afterwards completely removed, as is shown in photographs taken of the same man on the same operation a few hours, a few days, and also a year later. Examination of these cycles immediately suggested that the length of motions should be reduced by having a higher table, and such a table was temporarily secured by bolstering up the totebox as shown in 610-G37. Still further examination of these cyclegraphs showed that the orbit could be very much reduced by having the incoming latch handles in a box that tilted about thirty degrees toward the operator, this, because the latch handles should always slide to the lower end of the box so that they can be found in a constant location without calling for the eye as well as than hand of the worker to find them. Immediately after the hole was countersunk the fingers opened, and it catapulted sideways down the inclined table in use, and into a box on the floor. This cut the time of the operation from approximately nine seconds to four and three quarters seconds with much less fatigue to the workman. The arc of light running in the direction of the upper left hand corner from the visor of the worker's cap shows the light on the finger of the right hand which operates the lever of the drill press. This is shown in 610-G146." Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Photographs sent to Mr. Robert Moulton; typescript MG 1/30/15.

"610-G131. This picture is a double cycle of the speed boss at the New England Butt Company. This picture is interesting for several reasons. One is as follows: The cycles are almost exactly alike. The dropping of the latch handle makes the same upward wave in each one, and the upward course of the motion shows the extreme evenness of great skill and practice, and the downward course shows the unevenness that attends mental operations, such as attention and decision. It will be seen that up to the time that he drops this into the box the line is very wavy, and, after they are dropped, the line is quite as straight as the upward curve. This man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, but he has had short practice in making decisions.....[repeats above anecdote about hay]" Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Pictures sent to Mr. Lewis Ellison; typescript MG 12/9/15

Location of subject: N.E. Butt, Providence, RI.

Subject names: Tommy Perotti?

318949.0659 Cyclegraph of male in military uniform (?) holding a rifle (bayonet drill ?), undated

Notes: Card Number: 695
Category: military study
Copy negative: 93-11468

318949.0660 Difficult to tell, but looks like Hortense Stollnitz typing with cyclegraph lights on head (not in photo) and hands; see related images 16184 and GL1686A., 1916

Notes: Card Number: 694
Category: typing study
Collection: NMAH
Copy negative: 93-11467
Gilbreth image: 16100; 16135
Information in photo: 16100; 16135
Job name: Remington Typewriter, Ilion NY
Related captions: This is an odd one, since the image has two numbers: 16100 and 16135, both of which suggest different subjects (either Anna Gold or Hortense Stollnitz, doing typing studies in 1916). The clothing and set up, however, looks similar to 16184, which features Stollnitz. But here are the probable related captions, courtesy again of Elspeth Brown and Dave Ferguson, via Purdue: GL-1683A Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1684 Miss Hortense Stollnitz, Champion high speed typist of this world, with light on her head, right elbow and both hands, showing small range of motion by writing one line on a typewriter. GL-1685 Miss Stollnitz, Remington Champion, with cyclegraph lights on head, right elbow and both forefingers. Demonstrates small amount of scope of...
Location of subject: Gilbreth Motion Study Laboratory, Providence RI
Subject names: Hortense Stollnitz

318949.0661 Cyclegraph of female seated at gridded table in front of gridded background. Metal pot on left., undated

Notes: Card Number: 699
Category: light assembly study
Copy negative: 93-11473
Information on photo: 18189
Original caption: The following caption courtesy of Dave Ferguson, who culled it from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. AChronocyclegraphs of the motions of the head and two hands. These all show too many light spots per second and as a result the spots overlap.

318949.0662 Cyclegraph of female seated gridded table in front of gridded background. Metal pot on left., undated

Notes: Card Number: 698

Category: light assembly study

Copy negative: 93-11472

318949.0663 Cyclegraph of working standing at a gridded and numbered table and stamping papers (?), Nov. 28, 1914 (?)

Notes: Card Number: 900

Category: office study

Copy negative: 93-11471

Information on photo: 28. XI. 14T214

318949.0664 Unidentified cyclegraph, gridded background and gridded floor, standing male visible on left., undated

Notes: Card Number: 696

Category: Miscellaneous- pure cyclegraphs or unidentified study

Copy negative: 93-11470

Information on photo: 18204

318949.0665 Bald one eyed, one legged, one armed male shoe salesman assists female with a new pair of shoes. Cash register in background., undated

Notes: Card Number: 700

Category: disabled study

Copy negative: 93-11474

Gilbreth image: 17238

318949.0666 Bald, one eyed, one armed male sits at magazine counter. Cash register in background has sign Get a Receipt, undated

Notes: Card Number: 701

Category: disabled study

Copy negative: 93-11475

Gilbreth image: 17281

318949.0667 One eyed man assists one armed man who is setting up a department store glove display window. A standing female watches., undated

Notes: Card Number: 702

Category: disabled study

Copy negative: 93-11476

Gilbreth image: 77248

318949.0668 Frank Gilbreth observes a one armed male seated at a gridded table with a typewriter with a special paper feed. One motion clock visible. Upper corners of plate are missing., 1916

Notes: Card Number: 906

Category: disabled study; typing study

Collection: NMAH

Copy negative: 93-11477

Gilbreth image: 16265

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. This picture shows the method of tearing off the sheets, four at a time, to a very straight edge on the top of the paper. While this tearing does not give as straight an edge at the top and bottom of the sheet, as is usual on cut sheets, it is plenty straight enough and does not vary a millimeter from a true straight line. There is also a saving in paper in that the paper is torn off at the bottom of the letter, wherever the bottom of the letter comes." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a weeks supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals

or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III."

17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0669 Aerial view of an operating room with gridded walls and gridded floor, undated

Notes: Card Number: 704
Category: surgical & dental study
Copy negative: 93-11478

318949.0670, Office wash basin. Stenciled plate rail visible., 9-Dec-14

Notes: Card Number: 708
Category: office study
Copy negative: 93-14392
Information in photo: 9 XII268
Information on photo: 9 XII 14T268

318949.0671 Different colored balls of string on special board and Andre (?) pencil and pen holder sitting on a gridded desk., May 2, 1919 (?)

Notes: Card Number: 709
Category: office study
Copy negative: 93-14391
Information on photo: 2/5/1960

318949.0672 Dumb waiter in an office, undated

Notes: Card Number: 707
Category: office study
Copy negative: 93-14390
Information on photo: Frank B. Gilbreth

318949.0673 Unidentified objects on gridded paper., undated

Notes: Card Number: 909
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-14389
Information on photo: 246?

318949.0674 Eleven metal containers for liquid sitting on a table marked off Putzwasser (voll)., 9-Dec-14

Notes: Card Number: 705
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-14388
Information in photo: 9 XII273
Information on photo: 9. XII. T273
Location of subject: Germany

318949.0675 Scientific management chart pinned to a gridded background. Chart is titled Diagrammatic sub-functional chart under scientific management. Frank Gilbreth consulting engineer, undated

Notes: Card Number: 114
Category: business and apparatus of motion study
Copy negative: 93-14387

318949.0676 Copy photograph of Diagrammatic chart of functional foremanship under Scientific Management. Frank B. Gilbreth. Consulting Engineer, undated

Notes: Card Number: 848
Category: business and apparatus of motion study
Copy negative: 93-14380

318949.0677 Route map, row of sinks visible in background., 4-Apr-19

Notes: Card Number: 1090
Category: business and apparatus of motion study
Copy negative: 93-14381

Information in photo: Bldg. C1st floor1253 4-4-19

Information on photo: 4-4-191253

318949.0678 Chart in GermanNicht Eingeorde Lagermaterialien, October 1, 1914 (?)

Notes: Card Number: 1089
Category: business and apparatus of motion study
Copy negative: 93-14382
Information on photo: 1. X. 14T45

318949.0679 Detail of parts on packet rack.One third of plate missing., undated

Notes: Card Number: 1088
Category: light assembly study
Copy negative: 93-14383
Job name: New England Butt Company
Job number: 610

318949.0680, Pure cyclegraph.Right side of plate is broken., undated

Notes: Card Number: 728
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-14386

318949.0681 Cyclegraph of female seated at gridded table in front of gridded background. Three motion clocks visible.Half of plate is missing., undated

Notes: Card Number: 934
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-14384
Information in photo: ?? 649 216

318949.0682 Cyclegraph of person at gridded table, with gridded backgroundLeft side of plate broken., undated

Notes: Card Number: 729
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-14385
Information on photo: 17789

318949.0683 Cyclegraph of seated female, wearing dark dress, at table in front of gridded background and behind penetrating screen. Three motion clocks visible on left.Left side of negative broken., undated

Notes: Card Number: 146
Category: light assembly study
Copy negative: 94-3438
Information on photo: 17737

318949.0684 Board for route and order tickets.Plate is broken in two pieces., undated

Notes: Card Number: 727

Category: business and apparatus of motion study
Copy negative: 93-14374

318949.0685 Unidentified cyclegraph. Gridded background and gridded table, male crouching off to one side. Left side of plate broken, undated

Notes: Card Number: 864
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-14375
Information in photo: 76

318949.0686 Large book on table, undated

Notes: Card Number: 725
Category: business and apparatus of motion study
Copy negative: 93-14376

318949.0687 Mechanism for adjusting the height of a table (?), 28-Mar-19

Notes: Card Number: 724
Category: betterment
Copy negative: 93-14377
Information on photo: 3/28/191201

318949.0688 Exterior of building looking in through doors at artillery shells (?) on a rolling cart. Right side of plate is broken, March 10, 1919 (?)

Notes: Card Number: 878
Category: materials handling study
Copy negative: 93-14378
Information on photo: 10/19/8363

318949.0689 Large book on a table, undated

Notes: Card Number: 722
Category: business and apparatus of motion study
Copy negative: 93-14379

318949.0690, Male wearing machinist jacket written out tickets on storage bins. Gridded wall to the left., undated

Notes: Card Number: 721
Category: storage old and new
Copy negative: 93-14367
Information on photo: EF696

318949.0691 Unidentified framed objects, 5-Feb-19

Notes: Card Number: 1068
Category: business and apparatus of motion study
Copy negative: 93-14368
Information on photo: 492-5-19

318949.0692 Organizational charts and sample forms., 22-Apr-19

Notes: Card Number: 845
Category: business and apparatus of motion study
Copy negative: 93-14369
Information on photo: 13394-22-19

318949.0693 Organizational charts and sample forms, 22-Apr-19
Notes: Card Number: 844
Category: business and apparatus of motion study
Copy negative: 93-14370
Information on photo: 13504-22-19

318949.0694 Organizational charts; Tool order record, Tool request, Tool report, Foundry order, Statement ? material, July 1, 1919 (?)
Notes: Card Number: 717
Category: business and apparatus of motion study
Copy negative: 93-14371
Information on photo: 13677/1/19

318949.0695 Route board, 28-Mar-19
Notes: Card Number: 714
Category: business and apparatus of motion study
Copy negative: 93-14363
Information in photo: Bldg C1st Floor
Information on photo: 12103-28-19

318949.0696 Male in suit standing next to a job board., undated
Notes: Card Number: 715
Category: business and apparatus of motion study
Copy negative: 93-14362

318949.0697 Female (Lillian ?) using lettering template. Pocket watch visible., undated
Notes: Card Number: 716
Category: business and apparatus of motion study
Copy negative: 93-14372
Information on photo: 210478

318949.0698 Aerial view of outdoor barrel storage yard and urban surroundings., undated
Notes: Card Number: 713
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 93-14364
Information on photo: 200.109

318949.0699 Storage bins outside of factory building., April 3, 1919 (?)
Notes: Card Number: 711

Category: storage old and new

Copy negative: 93-14365

Information on photo: 3-4-19715

318949.0700 Exterior of large factory building with extension ladder mounted on large wheels leaning against building., undated

Notes: Card Number: 712

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 93-14366

318949.0701 Rooftop view. Roof is paved in brick and a small structure stands under frame for awning. A number of planters are visible., undated

Notes: Card Number: 181

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-1791

Information on photo: 92911?

318949.0702 Exterior of five story factory building in urban setting., undated

Notes: Card Number: 33

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-1793

Information on photo: T347

Location of subject: Germany

318949.0703 Exterior of brick building showing detail of large box and smoke stack (?), 15-Jan-15

Notes: Card Number: 185

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-1794

Information in photo: 343.15.I

318949.0704 Exterior of five story factory building in urban setting. A boy stands on the street holding a Gilbreth day-month-year chalk board. Signs hanging from other buildings are in German (Riebed)., 3-Feb-15

Notes: Card Number: 34

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-1795

Information in photo: 371.3.II

Information on photo: 3.II.15T371

Location of subject: Germany

318949.0705 Exterior of five story brick factory building in urban setting., undated

Notes: Card Number: 182
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-1792
Information on photo: T348
Location of subject: Germany

318949.0706 Stacks of large diameter corrugated metal pipe (or perhaps stacks of tires.) See #318949.0707 for related image of auto body scrap heap., 18-Mar-19

Notes: Card Number: 113
Category: automobile assembly study
Copy negative: 94-1214
Information on photo: 10143-18-19

318949.0707 Scrap heap of auto bodies, 19-Mar-19

Notes: Card Number: 112
Category: automobile assembly study
Copy negative: 94-1213
Information on photo: 10433-19-19

318949.0708 Exterior of factory under construction. Signs on building say Neubau, Leonhard Tietz, Aktiengesellschaft ... New construction ... Inc., undated

Notes: Card Number: 23
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-1217
Location of subject: Germany

318949.0709 Overview of a convention hall (?) taken from the gallery. Bunting, lights, and display tables (?) visible., 1916?

Notes: Card Number: 25
Category: misc.views
Copy negative: 94-1215
Gilbreth image: 16140
Information on photo: 16140

318949.0710 Interior of office area during renovation (?). Building rubble and a dolly on the floor, wood partition being framed in center of floor., undated

Notes: Card Number: 96
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-1216

318949.0711 Unidentified seven sided box containing a display of small items, sitting on a gridded table in front of a gridded background., 14-Apr-15

Notes: Card Number: 22

Category: business and apparatus of motion study

Copy negative: 94-1218

Information in photo: 446.14.IVAu???

Information on photo: 14.IV.15T471

318949.0712 Enameled basin on floor in a corner., 8-Dec-14

Notes: Card Number: 21

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-1219

Information in photo: 8.XII.14T256

318949.0713 Enameled basin on a table with a pipe behind it. A European water closet tank (?) to the left., 3-Feb-15

Notes: Card Number: 20

Category: misc.views

Copy negative: 94-1220

Information in photo: 370.3.II

Information on photo: 3.II.15T375

318949.0714 Oddly surreal image (inadvertant) of a conical shape on a gridded surface., undated

Notes: Card Number: 19

Category: misc.views

Copy negative: 94-1221

Gilbreth image: 16096A

Information on photo: 16096A

318949.0715 Football game showing players and people in the stands., undated

Notes: Card Number: 18

Category: misc.views

Copy negative: 94-1222

318949.0716 Overview of a convention hall (?) taken from the gallery. Bunting, lights, and display tables (?) visible., 1916?

Notes: Card Number: 27

Category: misc.views

Copy negative: 94-1223

Gilbreth image: 16141

Information on photo: 16141

318949.0717 Unidentified objects in a stone or plaster container. A piece of graph paper is placed under the items and extends up to make a gridded background., 1924?

Notes: Card Number: 165

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 94-1224
Gilbreth image: 240,008
Information on photo: 240,008

318949.0718 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background. (copy photograph is printed backwards), 1924?

Notes: Card Number: 164
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1225
Gilbreth image: 240006
Information on photo: 240006

318949.0719 Mold room (?) piles of sand with a brick wall in background., 1923?

Notes: Card Number: 167
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-1226
Gilbreth image: 230.105
Information on photo: 230.105

318949.0720 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background.(copy photograph is printed backwards), 1924?

Notes: Card Number: 162
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1227
Gilbreth image: 240,011
Information on photo: 240,011

318949.0721 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background., undated

Notes: Card Number: 161
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1228
Gilbreth image: see 240003

318949.0722 Unidentified objects on a crude wood rack. I pole with a hook attached hangs from the rack. The entire set-up is photographed in an office., 1924?

Notes: Card Number: 86
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1229
Gilbreth image: 240,012 (?)
Information on photo: 240,012 (?)

318949.0723 Unidentified objects on a crude wood rack. A folding rule has been placed in front for scale. Frank Gilbreth is faintly visible in the background., 1924?

Notes: Card Number: 83
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1230
Gilbreth image: 240009
Information on photo: 240009

318949.0724 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background., 1924?

Notes: Card Number: 156
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1235
Gilbreth image: 240,002
Information on photo: 240,002

318949.0725 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background., 1924?

Notes: Card Number: 158
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1231
Gilbreth image: 240.001
Information on photo: 240.001

318949.0726 Unidentified metal objects. A piece of graph paper is placed under the objects and extends up to make a gridded background, 1924?

Notes: Card Number: 159
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1234
Gilbreth image: 240003
Information on photo: 240003

318949.0727 Overview of a convention hall (?) taken from the gallery. Bunting, lights, and display tables (?) visible., 1916?

Notes: Card Number: 26
Category: misc.views
Copy negative: 94-1232
Gilbreth image: 16141
Information on photo: 16141

318949.0728 Unidentified objects on a crude wood rack. A piece of graph paper is placed under the wood and extends up to make a gridded background., 1924?

Notes: Card Number: 157

Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-1233
Gilbreth image: 240007
Information on photo: 240007

318949.0729 Office with gridded desk in the foreground with rack holding multicolored balls of string., 5-Jan-19

Notes: Card Number: 155
Category: office study
Copy negative: 94-1236
Information on photo: 602-5-19

318949.0730, Unidentified seven sided box containing a display of small items, sitting on a gridded table in front of a gridded background., 14-Apr-15

Notes: Card Number: 154
Category: business and apparatus of motion study
Copy negative: 94-1237
Information in photo: Augenblickli??446.14.IV
Information on photo: T.43
Location of subject: Germany (?)

318949.0731 Small shelf with numbered slots attached to a wall below an interior window. In the background a stenciled plate rail is visible. Right hand plate is cracked., undated

Notes: Card Number: 294
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-1238

318949.0732 Unidentified seven sided box containing a display of small items, sitting on a gridded table in front of a gridded background., 14-Apr-15

Notes: Card Number: 153
Category: business and apparatus of motion study
Copy negative: 94-1239
Information in photo: Augenblickli??446.14.IV
Information on photo: T.43
Location of subject: Germany (?)

318949.0733 Set-up for motion study showing numerous lights. Male standing on right, gridded background in rear. Handwriting on the glass says 'Drill Press,' but the image number falls in the middle of a series of typing studies done in April 1916 as part of the Remington contract., 1916, April c. (?)

Notes: Card Number: 36
Category: typing study
Collection: NMAH
Copy negative: 94-1796
Gilbreth image: GL 422

Information on photo: GL422Drill Press (?)

Job name: Remington Typewriter?

Related captions: If this is really mislabeled by the Gilbreths, and has to do with typing rather than drill press work, then see related captions, courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. Note that some of the captions reference a cyclegraph; this image, GL413, is not a cyclegraph.

GL-415 "This shows researches especially made to produce a championship typist."

GL-417 "THORO Motion studies of methods of spelling and their effect upon the motions of a world champion typist. Spelling in the old way and in accordance with the recommended spellings of the Simplified Spelling Board. Note the chronocyclegraph method is also useful for guidance in the design of machinery. These pictures show the long motions of the left hand required to return the carriage when the carriage return hook is on the left end of the carriage."

GL-419 "Cyclegraph of left hand returning carriage of typewriter. This shows the left hand should not be used for carriage return as the path is too long and the fingers lose their position on the keys."

GL-424 [Cyclegraph of simplified spelling 'through' vs. 'thoro'.]

GL-424 "Chronocyclegraph of determining machine design. The carriage return hook is on the left hand end of the carriage, and the motion is much longer than the models with the return on the right."

"The use of micromotion and chronocyclegraph in machine design. This shows the path of the left hand returning the carriage of a well known make of typewriter. The operator being a world champion."

"This shows the path of a champion on the Underwood typewriter and the path is very much longer than on those machines where the carriage return hook is on the right hand end of the carriage."

GL-426 "This picture and many that will follow it will show the trend in America to-day toward the discovery of the one best way to do work. This picture is a motion study laboratory where there is special investigation going on to find information regarding key-stroke and finger-stroke machines, such as monotype adding machine, typewriter, stenotype and other similar machines. In some of the cases the lights are very close to the worker as in GL-426 because a very large number of pictures per second are being photographed."

GL-427 "Path of left hand returning the carriage of a typewriter, carriage-return hook of which is on the left end of the carriage."

GL-428 "Testing the tests for the scientific selection of workers. After making tests which were supposed to be of value for selecting candidates for intensive training to become

champions in typing, we submitted the tests to the people who had been champions. The woman in this picture was the champion of the world. Note that the clock shows the time of exposure of the picture, in that the blur on the hands records the time that the shutter was opened, or in other words, the shutter was open in this picture about thirty nine two thousandths of a minute, each division on the clock being half a thousandth of a minute."

"This is a picture of a former champion typist of the world showing her position on a typewriter. At least her idea of her position on a typewriter and here is a remarkable fact that of the many thousand motion pictures taken of this young lady, not a single solitary frame shows any picture anything like the one that she has posed thinking that it was the way that she actually held her hands during her typewriting. In other words this is another fine illustration of the fact that even the expert demonstrator does not know what motion he or she uses and that the methods and motions taught to the beginner at demonstration are actually used by the expert himself during his regular practice. Therefore the entire method of teaching in our trades is wrong and that the only way to teach at demonstration speed the real motions and real methods of the expert is to take the picture very fast and project them very slow, thus slowing down the expert operator with his real motions to a speed that can be seen by the learner."

"A world champion demonstrating slowly the position which she thinks her hands are in when operating at full speed. Thousands of micromotion pictures of her at full speed show no position like this. This is one more proof that fast motions and slow motions are not alike and that no one can correctly demonstrate slowly the motions that they make at the full speed of actual practice."

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: ?

318949.0734 Seated female, wearing a dress with a gridded apron sewn or pinned on front, at gridded table in front of gridded background. Two motion clocks visible on left. Woman has an array of parts, fixtures and hand tools including hammer and nippers., undated

Notes: Card Number: 210
Category: light assembly study
Copy negative: 94-3437
Information in photo: 256649

318949.0735 Male seated at gridded desk, two motion clocks and gridded background visible., undated

Notes: Card Number: 37
Category: office study
Copy negative: 94-1797
Information in photo: 1864

Information on photo: EF695

318949.0736 Female, Miss Margaret Owen of Underwood Typewriting Company, seated with second female (Lillian Gilbreth) peering over her shoulder. Motion picture camera and numerous lights visible., 1916 c. April

Notes:

Card Number: 38

Category: typing study

Collection: NMAH

Copy negative: 94-1798

Gilbreth image: GL 413A; EF 303

Information on photo: GL413A; EF 303

Job name: Remington Typewriter, Illion NY

Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. Note that some of the captions reference a cyclegraph; this image, GL413, is not a cyclegraph.

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GL-428 "Testing the tests for the scientific selection of workers. After making tests which were supposed to be of value for selecting candidates for intensive training to become champions in typing, we submitted the tests to the people who had been champions. The woman in this picture was the champion of the world. Note that the clock shows the time of exposure of the picture, in that the blur on the hands records the time that the shutter was opened, or in other words, the shutter was open in this picture about thirty nine two thousandths of a minute, each division on the clock being half a thousandth of a minute."

"This is a picture of a former champion typist of the world showing her position on a typewriter. At least her idea of her position on a typewriter and here is a remarkable fact that of the many thousand motion pictures taken of this young lady, not a single solitary frame shows any picture anything like the one that she has posed thinking that it was the way that she actually held her hands during her typewriting. In other words this is another fine illustration of the fact that even the expert demonstrator does not know what motion he or she uses and that the methods and motions taught to the beginner at demonstration are actually used by the expert himself during his regular practice. Therefore the entire method of teaching in our trades is wrong and that the only way to teach at demonstration speed the real motions and real methods of the expert is to take the picture very fast and project them very slow, thus slowing down the expert operator with his real motions to a speed that can be seen by the learner."

"A world champion demonstrating slowly the position which she thinks her hands are in when operating at full speed. Thousands of micromotion pictures of her at full speed show no position like this. This is one more proof that fast motions and slow motions are not alike and that no one can correctly demonstrate slowly the motions that they make at the full speed of actual practice."

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Miss Margaret Owen; Lillian Gilbreth

318949.0736 Female seate at work bench (adjustable height) working at a vice. In background is a gridded screen and behind that a large sink., undated
Notes:

Card Number: 39

Category: light assembly study

Copy negative: 94-1799

Information on photo: B4

318949.0737 Male seated at large gridded table, 30-Nov-14

Notes: Card Number: 41
Category: business and apparatus of motion study
Copy negative: 94-1801
Information on photo: 30.XI.14T221

318949.0738 Female seated at work bench (adjustable height) working at a vice. In background is a gridded screen and behind that a large sink., undated

Notes: Card Number: 40
Category: light assembly study
Copy negative: 94-1800
Information on photo: B4? see other image

318949.0739 Male and female seated on stools in bin of collar bundles (?). [They had a contract with Cluet Peabody, collar makers, from Sept. 1916-Dec. 1917.), 1917

Notes: Card Number: 45
Category: needle trade study
Copy negative: 94-1805
Gilbreth image: 17466
Information on photo: 17466

318949.0740, Male standing working on copy book (?). Visible behind him are two motion clocks and a gridded background., undated

Notes: Card Number: 44
Category: office study
Copy negative: 94-1804
Gilbreth image: EF 700
Information in photo: 1877
Information on photo: EF 700

318949.0741 Standing male wearing tie and overalls. Gridded background behind him and workbench and packet board to his right. Four motion clocks visible. Assembling base of braiders ., 29-Jan-16

Notes: Card Number: 221
Category: light assembly study
Collection: NMAH
Copy negative: 94-1803
Gilbreth image: 610-334
Information in photo: Jan 29, 1916B1-17Assembly base group
Information on photo: 610334
Job name: New England Butt Company, Providence RI
Job number: 610
Original caption: "610-334 This picture shows the first use of an assembly packet principle in assembling. This particular

machine is the braider for making lacings, etc. In 1912 we devised this method as the result of our micromotion studies in one of the laboratories of one of our clients and this picture was taken several years afterwards. It has remained the same and workers are still producing three times as much output as they did before the studies were made and with less fatigue than formerly." (courtesy of Dave Ferguson, via GPP).

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these braiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet: "610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

"1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181))."

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

"1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is

to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

"610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one

half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

Location of subject: New England Butt Company, Providence RI

Subject names: ? foreman, probably

318949.0742 Female seated at table (adjustable height, painted white) in totally gridded room. There are two motion clocks to her right and a penetrating screen in front of her., 1917?

Notes:

Card Number: 232

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 94-1802

Gilbreth image: 17907

Information on photo: 17907

318949.0743 Two standing females and one seated female behind a desk in an office. In the background are shelves of file boxes, to the left is a drinking fountain. The desk has an Andre pencil holder., 1921?

Notes:

Card Number: 236

Category: office study

Copy negative: 94-1806

Gilbreth image: 210.357

Information on photo: 210.357

318949.0744 Demonstration of chronoclygraph light system (?). Three standing males, one with wires for lights, Frank Gilbreth off to left. Blackboard in background has four sets of chalked staffs (five lines)., 16-Aug-15

Notes:

Card Number: 47

Category: business and apparatus of motion study

Copy negative: 94-1807

318949.0745 Male in coat and tie and hat in front of gridded background., undated

Notes:

Card Number: 48

Category: business and apparatus of motion study

Copy negative: 94-1808

Information on photo: 16342

318949.0746 Two males standing in a room in front of an amoire (wash basin barely visible.) Stenciled plate rail on wall behind them. One man wears a military style uniform., undated

Notes:

Card Number: 341

Category: business and apparatus of motion study

Copy negative: 94-1810

Information on photo: 1.4.15T457

318949.0747 Female seate at work bench (adjustable height) working at a vice. In background is a gridded screen and behind that a large sink., undated

Notes: Card Number: 49
Category: light assembly study
Copy negative: 94-1809

318949.0748 Female, Miss Margaret Owen, standing at desk with typewriter. Gridded background and three motion clocks visible., 1916, April c.

Notes: Card Number: 51
Category: typing study
Collection: NMAH
Copy negative: 94-1811
Gilbreth image: GL450
Information on photo: GL450
Job name: Remington Typewriter, Ilion New York
Original caption: "Studying the motions of champion typists. In 1915 I was particularly interested in finger motions on such work as adding machines and the Monotype machines and I asked the two leading typewriter companies to send me the best demonstrators of their machines. This they did and I studied their motions and recorded them on the film and by means of chronocyclegraphs. It was not until some time after this that the Remington people asked me to develop a champion typist for the world for their advertising department. The result was that we did furnish them a champion, not only of the United states but finally as champion mateur of the world, whose picture is #16245 and #16188. Miss Hortense Stollnitz in 1916 wrote 147 words gross and after deducting 5 wrods per mistake was credited with 137 words net per minute for a half an hour. The best previous record was the same net with 5 less words per minute gross and consequently the Remington people were extrememly pleased." (GPP NF1/0019 vol. III).
Location of subject: Gilbreth Motion Study Laboratory, Providence RI
Subject names: Margaret Owen, Underwood Typewriter's reigning professional champion operator, whom FBG invited to Providence in April 1916.

318949.0749 Seated female on top of gridded base in front of desk with typewriter (Hortense Stollnitz). Standing male (P.L. Waters) appears to be instructing or measuring arm angle. Second female (Anna Gold) watches. One motion clock visible., 1916

Notes: Card Number: 52
Category: typing study
Collection: NMAH
Copy negative: 94-1812
Gilbreth image: 16177
Information in photo: 16177
Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson: 16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart operators who cannot get over the 125 mark because they learn the wrong motions first of moving the elbow forward and back instead of the fingers.

16166 Mr. P.L. Waters teaching Remington typists in Gilbreth Laboratory. The Remington Typewriter has produced the fastest records ever known.

16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.

16180.N. Micromotion studies of champion of the world typists. This work was done in our laboratory in 1916.

16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures were taken. Her gold medal can be seen in her left hand in #16245.

16208 Mr. P.L. Waters teaching the National Champion Amateur Typist in Gilbreth Laboratory (1916). The Remington machine shown herein holds the world's record for the greatest number of words per minute gross.

16213 Mr. P.L. Waters teaching the World's Champion Amateur Typist in Gilbreth Laboratory, 1916. Gross number of words per minute from strange copy, 147. Net number of words per minute (after penalizing, 5 words for each and every mistake, 137 words per minute. This gross is 5 words more than ever known before and the net is equal to the best professional record.

16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross.

16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16249A Miss Stollnitz and her gold medal, as Champion Amateur of the world.

16249K Miss Stollnitz and her gold medal, for becoming International Champion of the World. [in 1916.] Miss Anna Gold with her gold medal which she received from becoming International Champion in September 1916.

GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916, and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Location of subject: Gilbreth Motion Study Laboratory, Providence RI

Subject names: Hortense Stollnitz; Anna Gold; P.L. Waters

318949.0750, Female (Hortense Stollnitz) standing next to Remington typewriter which is on a gridded desk., 1916

Notes:

Card Number: 53

Category: typing study

Collection: NMAH

Copy negative: 94-1813

Gilbreth image: c. 16167 but not identical

Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson: The subject is Hortense Stollnitz.

16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart operators who cannot get over the 125 mark because

they learn the wrong motions first of moving the elbow forward and back instead of the fingers.

16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.¹

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16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross.

16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

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GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916, and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross

per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Location of subject: Gilbreth motion study laboratory, Providence, RI

Subject names: Hortense Stollnitz

318949.0751 A skit about pencils enacted outside of a house. Females wearing white carry signs, females wearing white (and white hoods) carry buckets, and two males (?) wear large pencil costumes. In the background are numerous people as well as two more large pencils., 1923?

Notes: Card Number: 81
Category: office study
Copy negative: 94-1816
Gilbreth image: 230.07
Information on photo: 230.070V44

318949.0752 An odd image. A skit about pencils. Six women dressed in white carrying signs. They stand in front of a house and are surrounded by men in coat and tie and uniforms. The signs appear to be presenting problems with pencils. Oh woe is me. My points run down. Whatever shall I do. He'll get ahead if I stop here. I will wait a second or two. I cannot trace another mark. Until some help I get. I'll stop in here and sharpen me. Then go with on my bet., 1923?

Notes: Card Number: 80
Category: office study
Copy negative: 94-1815
Gilbreth image: 230.073
Information on photo: 230.073

318949.0753 Male seated at gridded table, 5-Dec-14

Notes: Card Number: 54
Category: business and apparatus of motion study
Copy negative: 94-1814
Information on photo: 5.XII.14

318949.0754 Four legged adjustable height stool with feet supports attached to sides., 13-Apr-15

Notes: Card Number: 2
Category: ergonomics
Copy negative: 94-3231
Information in photo: 445.13.IV
Information on photo: 13.4.15T489B10

318949.0755 Female seated on chair with booster blocks and feet resting on stool at table. Wire baskets, piles of paper and telephone visible on table top. Stenciled plate rail on wall in background., 18-Jan-15

Notes: Card Number: 292
Category: office study
Copy negative: 94-3232
Information in photo: 355. 18.I

318949.0756 chair on booster blocks in front of table., 13-Nov-14

Notes: Card Number: 51
Category: ergonomics
Copy negative: 94-3233
Information on photo: T11013.XI.14B10

318949.0757 Large room with two white screen walls in front of which are lined up seven different types of chairs and one stool., undated

Notes: Card Number: 49
Category: ergonomics
Copy negative: 94-3235
Information in photo: chalk board too small to read
Information on photo: A17660BP

318949.0758 Chair sitting on booster blocks in front of table., undated

Notes: Card Number: 50
Category: ergonomics
Copy negative: 94-3234
Information on photo: T40BP

318949.0759 Female, wearing dark dress, seated at specialized work station wrapping soap or perhaps boxing cards., 17-Aug-20

Notes: Card Number: 237
Category: stacking & packing study
Copy negative: 94-3237
Gilbreth image: 200.307
Information in photo: Mon. 8/ Day 17/ Year 20T.ofD. 3pmDia. F16L.of T. 10-s
Information on photo: 200.307

318949.0760, Female, wearing dark dress, seated at specialized work station wrapping soap or perhaps boxing cards. Five additional work stations are also visible., 17-Aug-20

Notes: Card Number: 236
Category: automobile assembly study
Copy negative: 94-3238
Gilbreth image: 200.293
Information in photo: Mon. 8/ Day 17/ Year 20T.ofD. 3pmDIA. F16LofT. 10-s

Information on photo: 200.293

Box 6

318949.00761 Female, wearing dark dress, seated at specialized work station wrapping soap or perhaps boxing cards, 1920

318949.0762 Chair standing on rolling booster platform in front of gridded wall., 20-Apr-15

Notes: Card Number: 45
Category: betterment
Copy negative: 94-3240
Information in photo: 481.20.41915
Information on photo: 20.4.15T481

318949.0763 Chair on booster blocks in front of two specialized stands. In distance is a wall on which hangs three pendulum clocks with their doors open. To the right a penetrating screen leans against another wall. Under clocks is a large crate marked Fels Naptha Soap., undated

Notes: Card Number: 183
Category: stacking & packing study
Copy negative: 94-3241

318949.0764 Two females seated next to a motion picture projector. Gridded wall of to the left., 20-Apr-15

Notes: Card Number: 43
Category: misc.views
Copy negative: 94-3242
Information in photo: 483.20.41915

318949.0765 Male, in suit and tie, seat on specialized chair in doctor's office (dispensary.), undated

Notes: Card Number: 42
Category: betterment
Copy negative: 94-3243
Gilbreth image: GL1629
Information on photo: GL1629

318949.0766 Large room with two white screen walls in front of which are lined up seven different types of chairs and one stool., undated

Notes: Card Number: 41
Category: ergonomics
Copy negative: 94-3244
Gilbreth image: A17660
Information in photo: chalk board visible but too small to read
Information on photo: A17660

318949.0767 Close-up of chair sitting on booster blocks., undated

Notes: Card Number: 138
Category: ergonomics

Copy negative: 94-3245
Information on photo: 47

318949.0768 Close-up of the underside of specialized table (painted white.)
Gridded walls, gridded floor, and one motion clock are visible., undated

Notes: Card Number: 39
Category: betterment
Copy negative: 94-3246
Information on photo: 200.537

318949.0769 Female in polka dot dress sits at gridded table in front of gridded background making notations with pen in a book. Several rubber stamps and an ink well lay on the table in front of her. One motion clock is visible on left., undated

Notes: Card Number: 242
Category: rubber stamping study
Copy negative: 94-3247
Information in photo: 175649

318949.0770, Male, wearing vest and bowler hat, assembly station in front of packet board. Note that the work bench is in front of the packet, not at an angle, as it is in #1054., 1912

Notes: Card Number: 164
Category: light assembly study
Collection: NMAH
Copy negative: 94-3248
Gilbreth image: 610-263
Information on photo: 610-263
Job name: New England Butt Company
Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet: "610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as

fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

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1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed

for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

Location of subject: New England Butt Company, Providence, R.I.

Subject names: ? same as 610-G261

318949.0771 Male, wearing vest , bow tie, and bowler hat, works at assembly station in front of packet board. This image taken during the same period as the first drill press series at New England Butt Company. Copy print appears to be printed reversed. Note that the work bench is in front of the packet, not at an angle, as it is in #1054., 1912

Notes:

Card Number: 163

Category: light assembly study

Collection: NMAH

Copy negative: 94-3249

Gilbreth image: 610-G261

Information on photo: 610-G261

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the

New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet: "610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

"1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181))."

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

"1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board,

picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

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Location of subject: New England Butt Company, Providence RI

Subject names: ? same as 610-263, I think.

318949.0772 Packet board with parts arranged., Oct. 1912?

Notes:

Card Number: 162

Category: light assembly study

Collection: NMAH

Copy negative: 94-3250

Job name: New England Butt Company, Providence RI

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet: "610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

"1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181))."

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"1241 shows a Gilbreth packet, a Gilbreth bench, and a Johnson-Littlefield carrier-packet arranged for the assembly of a 13-string braider at the new England Butt Company, Prov.,

R.I. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American (816-181))."

"1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are [not?] standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP)."

610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time

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Location of subject: New England Butt Company, Providence RI

318949.0773 Dinner place setting (dinner plate, bread plate, fork, knife, spoon, and napkin) on numbered and lettered table., undated

Notes: Card Number: 270

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 94-3251

Gilbreth image: 19187

Information on photo: 19187

318949.0774 Close-up of hands in unidentified machine (possibly a motion picture camera.), 17-Mar-15

Notes: Card Number: 33

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 94-3252

Information on photo: 17.II.15T420

318949.0775 Male, in coat and bow tie, holding unidentified objects in his hands with a third hand holding another unidentified object., undated

Notes: Card Number: 32

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 94-3253

Information on photo: 17192

318949.0776 Close-up of two hands simultaneously taking short lengths of tube (nuts?) from a packet board., 1912?

Creator: E.R. Kent?, George

Notes: Card Number: 158

Category: light assembly study

Collection: NMAH

Copy negative: 94-3254

Job name: New England Butt Company, Providence, R.I.

Job number: 610

Related captions: "1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are [not?] standardized and

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general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these braiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet: "610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

"1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

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Location of subject: New England Butt Company, Providence, R.I.

318949.0777 Close-up of male (?) hands removing geared parts from packet board. Ring on left finger., 1912?

Creator: E.R. Kent?, George

Notes: Card Number: 157

Category: light assembly study

Collection: NMAH

Copy negative: 94-3255

Gilbreth image: 610-GGL

Information on photo: 610GGL

Job name: New England Butt Company, Providence, RI

Job number: 610

Related captions: "1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are [not?] standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

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Location of subject: New England butt Company, Providence, RI

318949.0778 Female, wearing dark dress and locket, seated at desk writing on a card. Document on desk in German., 13-Feb-15

Notes: Card Number: 218
Category: office study
Copy negative: 94-3256
Information in photo: .13.II 1915
Information on photo: 13.II.15T388
Location of subject: Germany

318949.0779 Two females standing at gridded and numbered table writing on pads., undated

Notes: Card Number: 28
Category: office study
Copy negative: 94-3257
Information on photo: T210

318949.0780, Male in vest and bow tie seat in adjustable chair with feet on curved support in front of gridded background. One motion clock visible., undated

Notes: Card Number: 8
Category: betterment
Copy negative: 94-3441
Information in photo: 115
Information on photo: 17930

318949.0781 Female, wearing dark skirt, white blouse and stockings, seated in adjustable chair at adjustable table with feet on curved support. Gridded backgrounds and penetrating screen also visible., undated

Notes: Card Number: 249
Category: betterment
Copy negative: 94-3440
Information on photo: 1700.95

318949.0782 Close-up of female wearing dark skirt and boots seated adjustable table with feet on curved support. Taken while FBG in the army?, 1917

Notes: Card Number: 250
Category: ergonomics
Copy negative: 94-3439

Gilbreth image: 17000.108

Information on photo: 17000.108

Original caption: "Female seated in adjustable chair at adjustable table with feet on curved support foot rest penetrating screen and cross-sectioned."

318949.0783 Close-up of female, wearing light checked dress or skirt and boots, seated on adjustable chair with feet on curved support at adjustable table., undated

Notes: Card Number: 251
Category: ergonomics
Copy negative: 94-3443
Gilbreth image: 17000-90
Information on photo: 17000-90

318949.0784 Male, wearing jacket and tie, seated on chair in front of gridded background., undated

Notes: Card Number: 13
Category: betterment
Copy negative: 94-3446
Information on photo: D48

318949.0785 Female, wearing light patterned dress, seated on adjustable chair in front of gridded background., undated

Notes: Card Number: 12
Category: betterment
Copy negative: 94-3442
Information on photo: D47

318949.0786 Close-up of female, wearing a dark skirt and stockings, seated on adjustable chair at adjustable table with feet on curved support., undated

Notes: Card Number: 254
Category: betterment
Copy negative: 94-3444
Information on photo: 1700.89

318949.0787 Female, wearing dark dress with white collar and boots, seated on adjustable chair in front of gridded background., undated

Notes: Card Number: 15
Category: ergonomics
Copy negative: 94-3445

318949.0788 Four female workers wearing dresses and caps stand at tables assembling or packing something., 12-Nov-14

Notes: Card Number: 9
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 95-20578

Information on photo: 12.XI.14T75

318949.0788 Male wearing vest and bow tie seted on adjustable chair with feet on curved support in front of gridded background. Motion clock visible.Negative is cracked, undated

Notes: Card Number: 16
Category: betterment
Copy negative: 94-3447
Information in photo: 114
Information on photo: 17933

318949.0789 Male, wearing vest and bow tie, seated on adjustable chiar with feet on curved support in front of gridded background. Motion clock visible., undated

Notes: Card Number: 17
Category: betterment
Copy negative: 94-3448
Information in photo: 113
Information on photo: 17932

318949.0790, Male, wearing vest and bow tie, seated in adjustable chair with feet on curved support in front of gridded background. Motion clock visible., undated

Notes: Card Number: 18
Category: betterment
Copy negative: 94-3449
Gilbreth image: 17936
Information in photo: 112
Information on photo: 17936

318949.0791 Adjustable chair and curved foot support in front of gridded background. Motion clock visible., undated

Notes: Card Number: 19
Category: betterment
Copy negative: 94-3450
Gilbreth image: 17931
Information in photo: 111
Information on photo: 17931

318949.0792 Seated male with feet on curved support in front of gridded background., undated

Notes: Card Number: 20
Category: betterment
Copy negative: 94-3451
Gilbreth image: 17756
Information on photo: 17756

318949.0793 Male seated with feet on curved support in front of gridded background., undated

Notes: Card Number: 21
Category: betterment
Copy negative: 94-3452
Gilbreth image: 17758
Information on photo: 17758

318949.0794 Close-up of female hand (wearing ring) on small gridded table in front of gridded background., undated

Notes: Card Number: 22
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-3453
Information on photo: D49

318949.0795 Children and adults line a street as a band led by police officers walks by. A lumberyard and two frame structures are visible., undated

Notes: Card Number: 23
Category: misc.views
Copy negative: 94-3454

318949.0796 Female, in long dark skirt or dress, seated on chair which is on top of a platform in front of table., 18-Feb-15

Notes: Card Number: 27
Category: betterment
Copy negative: 94-3236
Information in photo: 390.18.II
Information on photo: B10
Location of subject: Germany (?)

318949.0797 Three males in suit and tie standing in front of automobile in countryside., undated

Notes: Card Number: 26
Category: misc.views
Copy negative: 94-3436
Information on photo: 17595

318949.0798 Male, in coat and tie, wearing cyclegraph lights seated at desk pile high with papers. Cyclegraph equipment visible off to right., undated

Notes: Card Number: 214
Category: office study
Copy negative: 94-3455
Gilbreth image: 17590
Information on photo: 17590

318949.0799 Busy open air market in an urban square, undated

Notes: Card Number: 56

Category: scenic view
 Copy negative: 94-5206
 Location of subject: Germany (?)

318949.0800, Numerous people outside the entrance to an ornate church (?), undated

Notes: Card Number: 55
 Category: scenic view
 Copy negative: 94-5207
 Information on photo: ?????

318949.0801 Two females seated in ruins of an ampitheater., undated

Notes: Card Number: 54
 Category: scenic view
 Copy negative: 94-5208
 Information on photo: Grece Athenes Theatre Ju Dyonisius, Siees en marbreverascope richard33708

318949.0802 Fountain in city square, undated

Notes: Card Number: 53
 Category: scenic view
 Copy negative: 94-5209
 Information on photo: Francfort Roemerber Fontaine se la Justice Vieilles maisousverascope richard82?34
 Location of subject: Germany (?)

318949.0803 Greek ruins, undated

Notes: Card Number: 52
 Category: scenic view
 Copy negative: 94-5210
 Information on photo: Grece Olympicengle N.E. se l'Heraionverascope richard1714

318949.0804 Fountain in courtyard of curved building, undated

Notes: Card Number: 51
 Category: scenic view
 Copy negative: 94-5211
 Information on photo: Beauty and the beast Court of Rloivery

318949.0805 People walking along building with many courtyards. This looks like it could be California, by the trees. Only someone familiar with Brown U architecture could say. This is not Lillian's graduation in 1915, which was in Providence. I wonder [EHB] if Lillian brought her gown with her when she and Frank went to the PPIE in 1915, which might explain some of these California-specific images with her in her graduation gown, such as 318949.0805 and 318949.0883 and 318949.0865. Acc. no. 318949.1234 says 'Greek Theatre' on the slide., undated

Notes: Card Number: 39

Category: scenic view

Copy negative: 94-5214

318949.0806 Double exposure. View of building next to reflecting pool.,
undated

Notes:

Card Number: 38

Category: scenic view

Copy negative: 94-5212

318949.0807 Wooded hillside, lake in distance., undated

Notes:

Card Number: 40

Category: scenic view

Copy negative: 94-5213

318949.0808 Deck of house built on wooded hillside., undated

Notes:

Card Number: 41

Category: scenic view

Copy negative: 94-5215

318949.0809 People wearing exotic clothing standing amidst palm trees.,
undated

Notes:

Card Number: 42

Category: scenic view

Copy negative: 94-5216

Information on photo: scenes et jardins exotiques 1788

318949.0810, Street scene showing automobile and horse drawn carts,
several males walking on sidewalk., undated

Notes:

Card Number: 43

Category: scenic view

Copy negative: 94-5217

Information on photo: T476

Location of subject: Germany

318949.0811 Ornate plaza surrounded by ornate buildings., undated

Notes:

Card Number: 44

Category: scenic view

Copy negative: 94-5218

318949.0812 Standing male looks out over mountain valley. Factory located
on valley floor., undated

Notes:

Card Number: 45

Category: scenic view

Copy negative: 94-5219

Information on photo: Petropolis-une vallee. 1781

318949.0813 Urban street scene, two horse drawn wagons visible., undated

Notes: Card Number: 46
Category: scenic view
Copy negative: 94-5220
Information on photo: II.15T378

318949.0814 Exterior view of statue of young male next to a column., undated
Notes: Card Number: 47
Category: scenic view
Copy negative: 94-5221

318949.0815 Elevated view of ornate domed buildings and plaza., undated
Notes: Card Number: 48
Category: scenic view
Copy negative: 94-5222

318949.0816 Fountain and street scene, undated
Notes: Card Number: 49
Category: scenic view
Copy negative: 94-5223
Information on photo: Francfort Plaza Ju Kaiserverascope
richard712?3
Location of subject: Germany(?)

318949.0817 Female walking on pathway in front of castle, undated
Notes: Card Number: 50
Category: scenic view
Copy negative: 94-5224

318949.0818 Ruins of temple, undated
Notes: Card Number: 37
Category: scenic view
Copy negative: 94-5225
Information on photo: Greeceverascope richard90776

318949.0819 Street scene. Building in background has banners calling for
men to join the Army., undated
Notes: Card Number: 36
Category: scenic view
Copy negative: 94-5226

318949.0820 Street scene. Ruins of Pompeii., undated
Notes: Card Number: 35
Category: scenic view
Copy negative: 94-5227
Information on photo: Pompei Rue de la fortuneverascope
richard

318949.0821 Children in park in front of ornate building., undated

Notes: Card Number: 34

Category: scenic view

Copy negative: 94-5228

318949.0822 Ruins of ampitheater, undated

Notes: Card Number: 33

Category: scenic view

Copy negative: 94-5229

Information on photo: Griec Athenes Thintre se
DyonisiosVerascope richard 33707

318949.0823 Crowded open air market in unidentified city center., undated

Notes: Card Number: 32

Category: scenic view

Copy negative: 94-5230

318949.0824 Ruins of Pompeii, undated

Notes: Card Number: 31

Category: scenic view

Copy negative: 94-5231

Information on photo: Pompei - Thermes de Stabia 1586

318949.0825 Street scene. Intersection of two narrow European (?) streets
with several males visible., undated

Notes: Card Number: 29

Category: scenic view

Copy negative: 94-5232

318949.0826 Large ornate building with landscaped plaza in foreground.,
undated

Notes: Card Number: 30

Category: scenic view

Copy negative: 94-5233

318949.0827 Terraced hillside and castle taken from ship., undated

Notes: Card Number: 28

Category: scenic view

Copy negative: 94-7769

Information on photo: Ruines Ehrenfeld: les vignes 1413

318949.0828 Ruins of snow covered ampitheater, undated

Notes: Card Number: 27

Category: scenic view

Copy negative: 94-7770

Information on photo: verascope richard?????

318949.0829 Ruins of plaza at Pompeii, undated

Notes: Card Number: 26
Category: scenic view
Copy negative: 94-7771
Information on photo: Pompei-Thermes. 1589

318949.0830, Female standing next to railing of ship, town and mountainside castle visible on shore., undated

Notes: Card Number: 22
Category: scenic view
Copy negative: 94-7775

318949.0831 View of urban square or plaza, undated

Notes: Card Number: 24
Category: scenic view
Copy negative: 94-7773
Information on photo: Denmark
Location of subject: Denmark

318949.0832 Distant view of city with large bridge or aqueduct visible on right., undated

Notes: Card Number: 21
Category: scenic view
Copy negative: 94-7776

318949.0833 Two males and two females standing on deck of ship near shore., undated

Notes: Card Number: 25
Category: scenic view
Copy negative: 94-7772
Information on photo: Bords du Rhin-le Rocher ?????

318949.0834 Elevated view looking into garden with many gates and fences., undated

Notes: Card Number: 23
Category: scenic view
Copy negative: 94-7774

318949.0835 Two females walking in ruins of temple at Pompeii., undated

Notes: Card Number: 20
Category: scenic view
Copy negative: 94-7777
Information on photo: Pompei - Temple de Jupiter 1587
Location of subject: Pompeii, Italy

318949.0836 Street scene. Large obelisk in background, ornate building to the left, man in uniform in foreground., undated

Notes: Card Number: 19
Category: scenic view
Copy negative: 94-7778

318949.0837 Female standing deck to railing on ship which is close to shore.,
undated

Notes: Card Number: 18
Category: scenic view
Copy negative: 94-7779

318949.0838 Female stands in city plaza amongst a large group of pigeons.,
undated

Notes: Card Number: 17
Category: scenic view
Copy negative: 94-7780

318949.0839 Wildwood. Male stands at entrance gate to house in wooded
hills., undated

Notes: Card Number: 16
Category: scenic view
Copy negative: 94-7781

318949.0840, Wildwood. Exterior view of house in wooded hills. Wire fence
and entrance pergola visible in foreground., undated

Notes: Card Number: 11
Category: scenic view
Copy negative: 94-7786

318949.0841 to 318949.1043, undated

318949.0841 Destruction of urban building. Three males stand on first floor of
multi-story building and shovel debris into wagon. Where wall has been ripped
out on second floor woven stick construction method is visible., undated

Notes: Card Number: 15
Category: misc.views
Copy negative: 94-7782
Information on photo: 623

318949.0842 Large ornate building with fountains and gardens in foreground,
undated

Notes: Card Number: 14
Category: scenic view
Copy negative: 94-7783
Information on photo: FrancfortPalmengarten82551Verascope
Richard

318949.0843 Male with long sideburns works crank on lift truck on which is stacked 16 boxes. Lift truck is parked in front of gridded panels behind which is a large route model (?), 1-Mar-15

Notes: Card Number: 13
Category: materials handling study
Copy negative: 94-7784
Information in photo: 400.1.III

318949.0844 Interior view of room with portable drying frame from which hang long strips of paper looped over rack., undated

Notes: Card Number: 103
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94-7785
Information in photo: Drying frame
Information on photo: T56

318949.0845 Male in coat and bowler hat bending over lift truck stacked with 16 boxes. Gridded background and penetrating screen visible on right., 11-Feb-15

Notes: Card Number: 50
Category: materials handling study
Copy negative: 94-7788
Information in photo: 385.11.II
Information on photo: 11.II.15T385

318949.0846 Small table painted white with adjustable height base., 28-Mar-19

Notes: Card Number: 10
Category: ergonomics
Copy negative: 94-7787
Information in photo: 3/28/19119.7

318949.0847 Young male standing outside of building at slanted two wheeled cart/chute next to open basement entrance. Two wheeled cart (paper transport wagon?) visible in background., 27-Mar-15

Notes: Card Number: 99
Category: materials handling study
Copy negative: 94-7789
Information in photo: 437.27.III

318949.0848 Factory/warehouse interior showing large fabric sided rolling carts, wooden racks, and blurred female in background., undated

Notes: Card Number: 7
Category: factory documentation - interiors & exteriors & machinery
Copy negative: 94.779

Information on photo: 200.021

318949.0849 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 92
Category: automobile assembly study
Copy negative: 94-7791
Information in photo: 12644-4-19
Information on photo: 12644-4-19

318949.0850, Warehouse interior showing large wood bins (some on rollers others built for lift trucks) filled with metal parts., 1919

Notes: Card Number: 6
Category: storage old and new
Copy negative: 94-7792
Information on photo: 930?4-19

318949.0851 Warehouse interior with wood cubicles filled with reams of paper and drums stacked on floor. In center of image a young male stands leaning on a lift truck. To the right stands an adult male in coat and tie holding a penetrating screen., March 27, 19??

Notes: Card Number: 96
Category: materials handling study
Copy negative: 94-7793
Information in photo: 440.27.III

318949.0852 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 93
Category: automobile assembly study
Copy negative: 94-7794
Information in photo: 12684-4-19
Information on photo: 126819110A4-4-19

318949.0853 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 94
Category: automobile assembly study
Copy negative: 94-7795
Information in photo: 12634-4-19
Information on photo: 12634-4-19

318949.0854 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 41
Category: automobile assembly study
Copy negative: 94-7796

Information in photo: 12634-4-19

Information on photo: 12634-4-19

318949.0855 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 42

Category: automobile assembly study

Copy negative: 94-7799

Information in photo: 12654-4-19

Information on photo: 126519103A4-4-19

318949.0856 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 43

Category: automobile assembly study

Copy negative: 94-7798

Information in photo: 12624-4-19

Information on photo: 12624-4-19

318949.0857 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 44

Category: automobile assembly study

Copy negative: 94-7799

Information in photo: 12654-4-19

Information on photo: 12654-4-19

318949.0858 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 90

Category: automobile assembly study

Copy negative: 94-7804

Information in photo: 12664-4-19

Information on photo: 12664-4-19

318949.0859 Partially assembled engine on a specialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 45

Category: automobile assembly study

Copy negative: 94-7801

Information in photo: 12664-4-19

Information on photo: 12664-4-19

318949.0860, Three section gravity chute in warehouse interior. Cubicles filled with reams of paper and drums stacked on the floor visible., March 27, 19??

Notes: Card Number: 94

Category: materials handling study

Copy negative: 94-7802

Information in photo: 451.27.III (?)

318949.0861 Partially assembled engine on speialized rotating assembly support. Gridded wall visible in background., 4-Apr-19

Notes: Card Number: 89

Category: automobile assembly study

Copy negative: 94-7803

Information in photo: 12654-4-19

Information on photo: 12654-4-19

318949.0862 Partially assembled engine on specialized rotating assembly support. Gridded wall in background., 4-Apr-19

Notes: Card Number: 88

Category: automobile assembly study

Copy negative: 94-7806

Information in photo: 4-4-191263

Information on photo: 126319115A4-4-19

318949.0863 Exterior of factory building with pallets of pipe and stacks of metal sitting on wood covered yard., 4-Mar-19

Notes: Card Number: 91

Category: factory documentation - interiors & exteriors & machinery

Copy negative: 94-7805

Information on photo: 4/19/7243

318949.0864 Detail of reams of paper in wood cubicle. Floor has painted line to keep equipment (?) away from storage unit., 16-Dec-14

Notes: Card Number: 95

Category: storage old and new

Copy negative: 94-7800

Information in photo: 16XII330

318949.0865 Lillian Gilbreth seated on porch rail wearing cap and gown, Palm tree visible to the right. This is not Lillian's graduation in 1915, which was in Providence, since this image was taken on the porch of the Moller house in Oakland. I wonder [EHB] if Lillian brought her gown with her when she and Frank went to the PPIE in 1915, which might explain some of these California-specific images with her in her graduation gown, such as 318949.0805 and 318949.0883 and 318949.0865 (this one)., undated

Notes: Card Number: 66

Category: Lillian M. Gilbreth

Copy negative: 94-8680

Location of subject: Oakland CA

318949.0866 Lillian standing at gate under sign which reads Wildwood. In background is a house and a wooded hill. Taken at her parents' summer house, Wildwood, in Inverness CA, probably 1917. See 318949.0886; 318949.0771; and 318949.0875., undated

Notes: Card Number: 77
Category: Gilbreth Family
Copy negative: 94-8684

318949.0867 P.L. Waters and Lillian Gilbreth (with tie) with typists Hortense Stollnitz (on chair, up high) and Anna Gold (looking at camera)., 1916

Notes: Card Number: 87
Category: typing study
Collection: NMAH
Copy negative: 94-8654
Gilbreth image: 16182
Information on photo: 16182
Job name: Remington Typewriter, Ilion, NY
Related captions: The following captions courtesy of both Elspeth Brown and Dave Ferguson:

16151 Motions of hands and wrists of a champion typist. If the forearm moves forward and back in reaching the various banks of keys instead of having the motions done in the fingers then that operator can never be expected to write more than 125 to 130 words per minute. This is one of the best examples of the law that an operator must be taught right motions first or will always have the interference of habit. We have several very smart operators who cannot get over the 125 mark because they learn the wrong motions first of moving the elbow forward and back instead of the fingers.

16166 Mr. P.L. Waters teaching Remington typists in Gilbreth Laboratory. The Remington Typewriter has produced the fastest records ever known.

16180 Motion Studies of typists in our laboratory. This set of study was made for the purpose of delivering a champion of the world to the Remington Typewriter Company.

16180.N. Micromotion studies of champion of the world typists. This work was done in our laboratory in 1916.

16188 This shows Miss Stollnitz, champion of the world who has written faster than anyone up to the time these pictures were taken. Her gold medal can be seen in her left hand in #16245.

16208 Mr. P.L. Waters teaching the National Champion Amateur Typist in Gilbreth Laboratory (1916). The Remington machine shown herein holds the world's record for the greatest number of words per minute gross.

16213 Mr. P.L. Waters teaching the World's Champion Amateur Typist in Gilbreth Laboratory, 1916. Gross number of words per minute from strange copy, 147. Net number of words per minute

(after penalizing, 5 words for each and every mistake, 137 words per minute. This gross is 5 words more than ever known before and the net is equal to the best professional record.

16222 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16246 Two world champions, Miss Anna Gold, national champion in Chicago, 1916 and in New York 1917, she wrote 150 words in 1 minute from strange copy without a mistake, this being the highest record ever heard of up to that time. Miss Hortense Stollnitz who, in 1916 wrote the largest number of words gross and equaled the net record of the world, namely 147 words gross and 137 words net. The typists in the contest that time were penalized 5 words in the net for each an every mistake in spelling, spacing, etc. that they made in the gross.

16247 Anna Gold and Hortense Stollnitz, Champions 1916 on Remington Typewriter. Miss Stollnitz in 1917 wrote 17 more words per minute and kept it up for an hour than was ever heard of previously in the history of the art of typing. Anna Gold on the left wrote the second highest number of words gross but they both lost the first prize due to mistakes in spelling they being penalized five words for each word misspelled.

16249A Miss Stollnitz and her gold medal, as Champion Amateur of the world.

16249K Miss Stollnitz and her gold medal, for becoming International Champion of the World. [in 1916.] Miss Anna Gold with her gold medal which she received for becoming International Champion in September 1916.

GL-1630 Miss Anna Gold in foreground, and Miss H. Stollnitz in background in our laboratory in Providence. Five months after this picture was taken Miss Anna Gold won the Championship of American Amateur Class, and Miss Stollnitz won second prize Amateur Championship of America 1916, and one month later Miss Stollnitz won the International Championship, Amateur Class, 1916. Miss Stollnitz record of 147 words gross per minute is the record of the world, exceeding all other records, professional and otherwise, 5 words per minute. Her net record is 137 words per minute, and equals the highest record ever made by a professional, altho she was in the amateur class.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Lillian Gilbreth, Hortense Stollnitz, Anna Gold, and P.L. Waters

318949.0868 Lillian Gilbreth and two unidentified females standing on porch of clapboard house. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: LMG and her mother [Anne Delger Moller] at 77 Brown Street and Angel Street, Providence, rented. [There seems to be some confusion here. This is the same house in 318949.0990 which Ernestine says is Anne Cross' house in Providence, around the corner from 77 Brown St. Jane Lancaster says this is 77 Brown St. So it's either 77 Brown St., the Gilbreths' house, or it's the Cross house (on Angel)?], undated

Notes: Card Number: 85
Category: Gilbreth Family
Copy negative: 94-8656
Information on photo: GF79

318949.0869 Lillian seated on porch rocker next to a child in another rocking chair. Child is holding an open book. Child is Martha; this taken on the porch of summer home in Buttonwoods, RI I am pretty sure (EB)., undated

Notes: Card Number: 83
Category: Gilbreth Family
Copy negative: 94-8657

318949.0870, Lillian Gilbreth and her mother, Annie Delger Moller, standing on steps of the house in Providence, c. 1915, 1915, c.

Notes: Card Number: 86
Category: Gilbreth Family
Copy negative: 94-8655
Location of subject: Providence RI

318949.0871 Lillian seated on railing of deck with wooded hillside in background. Taken at her parents' summer house, Wildwood, in Inverness CA, probably 1917. See 318949.0886; 318949.0771; and 318949.0875., undated

Notes: Card Number: 82
Category: Lillian M. Gilbreth
Copy negative: 94-8658

318949.0872 Lillian Gilbreth (?) standing on grass under defoliated trees, large obelisk in background., undated

Notes: Card Number: 84
Category: Lillian M. Gilbreth
Copy negative: 94-8659

318949.0873 Lillian holding a crying infant, probably Fred. In dining room of Brown St. house in Providence. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: LMG and Fred, Providence Fall 1916. [neg. is dated 17051 suggesting early 1917]. Fred was born August 1916., early 1917?

Notes: Card Number: 81
 Category: Gilbreth Family
 Copy negative: 94-8660
 Information on photo: 17051

318949.0874 Lillian (?) and an unidentified woman wearing hats, coats, and gloves seated in wicker chairs on wheels being pushed by two boys in uniform (uniform hats say Garderobe.), undated

Notes: Card Number: 80
 Category: Gilbreth Family
 Copy negative: 94-8661

318949.0875 Lillian standing at a deck railing with woods in background. Taken at her parents' summer house, Wildwood, in Inverness CA, probably 1917. See 318949.0886; 318949.0771; and 318949.0875., undated

Notes: Card Number: 79
 Category: Gilbreth Family
 Copy negative: 94-8662
 Location of subject: Oakland, CA

318949.0876 Lillian holding a crying infant., undated

Notes: Card Number: 78
 Category: Gilbreth Family
 Copy negative: 94-8663
 Information on photo: 17.051

318949.0877 Lillian's graduation. Lillian Gilbreth standing in graduation robe with trees and shrubs in background. [This does NOT look like LMG; could it be a friend? Might be California; part of the same series of the mysterious Lillian graduation-robe wearing pictures of acc. 318949.0865.], undated

Notes: Card Number: 57
 Category: Lillian M. Gilbreth
 Copy negative: 94-8664

318949.0878 Lillian's graduation. Line of men and women in caps and gowns lined up along side of road, house and trees in background. Lillian is third from right. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: LMG Brown commencement. Helen G. Ladd in front of LMG. All four Gilbreth girls, 1915. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held. The woman in white is almost certainly Mildred Gray, Lillian's secretary.' 1915, undated

Notes: Card Number: 58
 Category: Lillian M. Gilbreth

Copy negative: 94-8665

318949.0879 Lillian's graduation. View taken down tree lined road of men lined up in caps and gowns. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: LMG Brown commencement. Helen G. Ladd in front of LMG. All four Gilbreth girls, 1915. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held.' 1915, 1915

Notes: Card Number: 59
Category: Lillian M. Gilbreth
Copy negative: 94-8666
Location of subject: Providence RI

318949.0880, Lillian's graduation. , 1915

Notes: Card Number: 61
Category: Lillian M. Gilbreth
Copy negative: 94-8668

Men and women in caps and gowns marching through a town. Sign on store in background says 268 C.H. Adams. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held. The woman in white is almost certainly Mildred Gray, Lillian's secretary.' 1915

318949.0881 Lillian's graduation. View taken down tree lined road of men lined up in caps and gowns. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: LMG Brown commencement. Helen G. Ladd in front of LMG. All four Gilbreth girls, 1915. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held.' 1915, 1915

Notes: Card Number: 6
Category: Lillian M. Gilbreth
Copy negative: 94-8667
Location of subject: Providence RI

318949.0882 Lillian's graduation. Faculty in robes and an assortment of specialized hats walk in front of school building. Lillian's graduation. Faculty in robes and an assortment of specialized hats walk in front of a school building. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth

scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held.'1915., 1915

Notes: Card Number: 62
Category: Lillian M. Gilbreth
Copy negative: 94-8669
Location of subject: Providence RI

318949.0883 Crowd seated in amphitheater. People marching onto stage. This looks like it could be California, by the trees. Only someone familiar with Brown U architecture could say. This is not Lillian's graduation in 1915, which was in Providence, since this image was taken on the porch of the Moller house in Oakland. I wonder [EHB] if Lillian brought her gown with her when she and Frank went to the PPIE in 1915, which might explain some of these California-specific images with her in her graduation gown, such as 318949.0805 and 318949.0883 and 318949.0865. Acc. no. 318949.1234 says 'Greek Theatre' on the slide; and sure looks like a graduation., undated

Notes: Card Number: 63
Category: Lillian M. Gilbreth
Copy negative: 94-8670

318949.0884 Lillian's graduation. Faculty in robes and an assortment of specialized hats walk in front of a school building. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held.'1915., 1915

Notes: Card Number: 64
Category: Lillian M. Gilbreth
Copy negative: 94-8671
Location of subject: Providence RI

318949.0885 Lillian (?) and unidentified female walking in front of exposition (?) building., undated

Notes: Card Number: 72
Category: 1915 Panama-Pacific Exposition
Copy negative: 94-8677

318949.0886 Lillian leaning against deck railing with wooded hillside behind her. Taken at her parents' summer house, Wildwood, in Inverness CA, probably 1917. See 318949.0886; 318949.0771; and 318949.0875., undated

Notes: Card Number: 76
Category: Gilbreth Family
Copy negative: 94-8672

318949.0887 Lillian holding a crying infant., undated

Notes: Card Number: 75
Category: Gilbreth Family

Copy negative: 94-8673

Information on photo: 17051

318949.0888 Lillian's graduation. Lillian in cap and gown standing with children (three girls and one boy) on driveway of house. Car, standing female, and a portion of the house visible in background. See also the accession 318949.0880: Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Lillian's graduation. Walking up George Street, from Benefit St. Anne and Ernestine joined the procession back to the green from the first Baptist Meeting House, where the ceremony was held.' 1915. The children would be from left to right: Ernestine, Anne, Frank Jr., and Martha., 1915

Notes: Card Number: 65

Category: Lillian M. Gilbreth

Copy negative: 94-8674

Location of subject: Providence RI

318949.0889 Frank Gilbreth and unidentified male (in tie but no coat) working on cyclegraph equipment (?) on table net to textile spinning machine. Room is large and has a gridded floor., undated

Notes: Card Number: 74

Category: needle trade study

Copy negative: 94-8675

318949.0890, One armed male seated at a gridded table in front of a gridded background removing paper from a specially outfitted typewriter. Motion clock visible of left, Frank Gilbreth stands on right., 1916

Notes: Card Number: 158

Category: disabled study; typing study

Collection: NMAH

Copy negative: 94-8683

Gilbreth image: 16264

Original caption: "16264. This picture shows the method of tearing off the sheets, four at a time, to a very straight edge on the top of the paper. While this tearing does not give as straight an edge at the top and bottom of the sheet, as is usual on cut sheets, it is plenty straight enough and does not vary a millimeter from a true straight line. There is also a saving in paper in that the paper is torn off at the bottom of the letter, wherever the bottom of the letter comes." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a weeks supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater

speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a week's supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16267. This is another pattern of the same machine but is even better because the rolls of paper are carried on a steady support on the wall instead of being attached to the carriage of the typewriter. Actual tests which we have made with this machine show astounding results." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once

been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III.

"17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0891 Frank Gilbreth (in coat and tie) and unidentified male (in rough clothing) in large room with 10 partially or fully assembled braiding machines, New England Butt Company. Not sure if this was taken at the beginning of the braiding machine work in 1912, or after FBG came back to take additional studies. Note that this is the same image as acc. no. 318949.0900 and acc. no. 318949.0898. (Image 610-333 (neg. 99-30278) is dated Jan. 24, 1916.), 1912-1916

Notes:

Card Number: 73

Category: light assembly study

Collection: NMAH

Copy negative: 94-8676

Gilbreth image: 610-G256

Information on photo: 610G256

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).regarding the packet:610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made.

Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH).

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

610-G331 [Showing arrangement of packet for assembly of braiding machine, Base Group. U-106] Typical assembly packet. This method was evolved in 1912 by means of motion study films and has been in successful operation every since permitting the workers to do over three times as much work in a day and with less fatigue. Studies of an assembly packet for arranging the parts of a braider in an obvious sequence, as a result of this investigation a man enabled to assemble 66 braiders where before he assembled 18, with no added fatigue. (courtesy of Dave Ferguson, via GPP),

Location of subject: New England Butt Company, Providence RI

Subject names: Frank Bunker Gilbreth (on left) and ?

318949.0892 Frank, Lillian, and unidentified female standing in front of large columns of portico of building. Ivy covered building visible to the right. [see also 318949.0985, taken at the same time as 318949.0892] In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Brown University. 1915. left to right: Aunt Ernestine [Moller--LMG's sister]; Mabel Moller [LMG sister]; Frank Gilbreth., undated

Notes:

Card Number: 69

Category: Gilbreth Family

Copy negative: 94-8681

318949.0893 Frank Gilbreth and an unidentified male both wearing suits, bow ties, and straw hats standing on sidewalk to the side of a clapboard house., undated

Notes:

Card Number: 70

Category: Gilbreth Family

Copy negative: 94-8679

Information on photo: GL 119

318949.0894 Eight standing males and one seated male. All wearing coat and tie. Stenciled (?) cornice visible in upper right corner., undated

Notes:

Card Number: 210

Category: business and apparatus of motion study

Copy negative: 94-8682

318949.0895 Frank, Lillian (?), and unidentified female standing on walk in green in between university (?) buildings. [see also 318949.0892]. This is from LMG's graduation, 1915. Working with Ernestine's IDs: on the far left in dark is Lillian's sister Mabel; on the right of FBG is Lillian's sister Ernestine., undated

Notes:

Card Number: 71

Category: Gilbreth Family

Copy negative: 94-8678

318949.0896 Frank Gilbreth and an unidentified male sit at a gridded desk. Visible in background is a stereoviewer and many charts hanging on a wall (stenciled plate rail visible.), undated

Notes: Card Number: 89
Category: business and apparatus of motion study
Copy negative: 94-10700

318949.0897 Frank Gilbreth and unidentified male in bowler hat and jacket stand in room at New England Butt Company filled with braiding machinery on work benches. I suspect that the image was made after 1912, perhaps in 1916, when FBG returned to NE Butt to make additional motion studies., 1912-1916

Notes: Card Number: 79
Category: assembly study
Collection: NMAH
Copy negative: 94-10703
Job name: New England Butt Company
Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these braiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP). regarding the packet: 610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181))."

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and

other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH).

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits

and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

610-G331 [Showing arrangement of packet for assembly of braiding machine, Base Group. U-106] Typical assembly packet. This method was evolved in 1912 by means of motion study films and has been in successful operation every since permitting the workers to do over three times as much work in a day and with less fatigue. Studies of an assembly packet for arranging the parts of a braider in an obvious sequence, as a result of this investigation a man enabled to assemble 66 braiders where before he assembled 18, with no added fatigue. (courtesy of Dave Ferguson, via GPP),

Location of subject: New England Butt Company, Providence RI

Subject names: Frank Bunker Gilbreth and ?

318949.0898 Frank Gilbreth and unidentified worker stand in room at New England Butt Company filled with braiding machines on workbenches. Not sure if this was taken in 1912, or when FBG came back to check on progress of installation and did more motion studies. Note that this is the same image as acc. no. 318949.0891 and 318949.0900. (Image 610-333 (neg. 99-30278) is dated Jan. 24, 1916.), 1912-1916

Notes:

Card Number: 78

Category: assembly study

Collection: NMAH

Copy negative: 94-10702

Gilbreth image: 610-G256

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them

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1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts

in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

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Location of subject: New England Butt Company, Providence, RI

Subject names: Frank Gilbreth and ?

318949.0899 Frank Gilbreth standing on bustling European urban street. Sign on building reads Societe Generale., undated

Notes: Card Number: 17
Category: Frank B. Gilbreth
Copy negative: 94-10701

318949.0900, Frank Gilbreth and unidentified worker stand in room at New England Butt filled with 10 partially assembled braiding machines on workbenches. Not sure if this image taken during the beginning of the work in 1916, or when FBG came back to do additional studies in 1916, and spent some time checking to see if his systems had help up. Note that this is the same image as acc. no. 318949.0898 and 318949.0891. (Image 610-333 (neg. 99-30278) is dated Jan. 24, 1916.), 1912-1916 ?

Notes: Card Number: 21
Category: assembly study
Collection: NMAH
Copy negative: 94-10697
Gilbreth image: 610-G256
Information on photo: 610G256
Job name: New England Butt Company
Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these braiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP). regarding the packet: 610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made

of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices.

The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

610-G331 [Showing arrangement of packet for assembly of braiding machine, Base Group. U-106] Typical assembly packet. This method was evolved in 1912 by means of motion study films and has been in successful operation every since permitting the workers to do over three times as much work in a day and with less fatigue. Studies of an assembly packet for arranging the parts of a braider in an obvious sequence, as a result of this investigation a man enabled to assemble 66 braiders where before he assembled 18, with no added fatigue. (courtesy of Dave Ferguson, via GPP),

Location of subject: New England Butt Company, Providence, RI

Subject names: Frank Gilbreth and ?

318949.0901 Three female children Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From left to right: Ernestine, Martha, and Anne [Gilbreth]. [NOTE: Ernestine identifies these other girls as cousins, not sisters] In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Ernestine with cousins.', undated

Notes:

Card Number: 25

Category: Gilbreth Family

Copy negative: 94-10696

318949.0902 Frank Gilbreth, one adult male, and three children picking flowers in a meadow. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From left to right: Frank Gilbreth, Frank Gilbreth Jr. (born 1911); William Moller [Lillian's father]; Martha Gilbreth; Ernestine Gilbreth. Looks more like New England than California. Summer 1913. See same hat for Frank in 318949.0244. In the

summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Buttonwoods, RI 1916. FBG, Frank, ?, Ernestine, Anne.' [Dave says 'unknown man looks like William Moller--which Jane also thinks is the case.], undated

Notes: Card Number: 24

Category: Gilbreth Family

Copy negative: 94-10695

318949.0903 Frank Gilbreth, two unidentified males, one female, and three children sitting at table in a backyard. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: she's not sure either. 'I'm wondering whether the man on the right could be Henry Gantt and his daughter Peggy? Just a guess.', undated

Notes: Card Number: 23

Category: Gilbreth Family

Copy negative: 94-10694

318949.0904 Martha Gilbreth wearing a necklace standing outside with water in background. Identical to image acc. 318949.1210; see also 318949.0967 and all the other Buttonwoods images. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Martha Gilbert, RI 1913 (see image 0224 for necklace).' Buttonwoods, RI, I am almost positive. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: agrees that this Martha. c. 1913-14., undated

Notes: Card Number: 19

Category: Gilbreth Family

Copy negative: 94-10699

Location of subject: Buttonwoods, RI?

318949.0905 Female child seated at piano. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Anne Gilbreth' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: she agrees this is Anne Gilbreth. Dave Ferguson says: 'Anne Gilbreth in about 1912 in Providence and would have been taking [piano] lessons from her Aunt Anne (Cross).', undated

Notes: Card Number: 26

Category: Gilbreth Family

Copy negative: 94-10688

318949.0906 Two young females standing outside holding dolls. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: on left, Ernestine (taller); on right, Martha. c. 1914-1915. [I don't think this is right, though--I think it's Anne on the left and Ernestine on the right, the smaller one; Martha is not in the picture--EHB]. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth

Carey, for ID purposes. Her comments follow: 'Anne and Ernestine 1912, Providence.', undated

Notes: Card Number: 20
Category: Gilbreth Family
Copy negative: 94-10698

318949.0907 Male receiving dental treatment., undated

Notes: Card Number: 27
Category: surgical & dental study
Copy negative: 94-10689

318949.0908 Interior of house with three females standing around single bed. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'This was the bed making demonstration in their home in Providence c. 1915. This is inside #77 Brown Street, Providence.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Gilbreth clock. Relative--Tonsils? 1916.' [reference here to the tonsil operation 1916]., undated

Notes: Card Number: 28
Category: Gilbreth Family
Copy negative: 94-10690
Gilbreth image: GL-69
Location of subject: Providence, RI

318949.0908 Female in polka dot dress seated at gridded desk in front of gridded background stamping papers. One motion clock is visible., undated

Notes: Card Number: 489
Category: rubber stamping study
Copy negative: 92-14216
Gilbreth image: 1700.106
Information in photo: 174649
Information on photo: 1700.106

318949.0909 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left measuring the subject's foot. Motion picture camera on tripod is visible., undated

Notes: Card Number: 26
Category: foot measuring study
Copy negative: 94-10692
Information on photo: 18224

318949.0909 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left side holding foot measuring device. A motion picture camera on a tripod is also visible.

Notes: Card Number: 23

Category: shoe making study

Copy negative: 94-10692

Information on photo: 18224

318949.0910, Male standing at drafting table in motion study room (gridded floor and gridded walls)., undated

Notes: Card Number: 23

Category: business and apparatus of motion study

Copy negative: 94-10691

318949.0911 Male in uniform standing on gridded table with gridded background getting foot measured. Unidentified male visible on left, motion picture camera visible on right. Army foot measuring study, undated

Notes: Card Number: 22

Category: foot measuring study

Copy negative: 94-10693

Information on photo: 18219

318949.0912 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left measuring the subjects foot. Motion picture camera on tripod is visible. Iron fence and brick wall visible in background, undated

Notes: Card Number: 23

Category: foot measuring study

Copy negative: 94-10683

Information on photo: 18237

318949.0912 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left measuring the subjects foot. Motion picture camera on tripod is visible. Iron fence and brick wall visible in background, undated

Notes: Card Number: 7

Category: foot measuring study

Copy negative: 94-10683

Information on photo: 18237

318949.0913 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Subject stands in foot measuring device. Second male in suit stands to left measuring the subjects foot., undated

Notes: Card Number: 23

Category: foot measuring study

Copy negative: 94-10684

Information in photo: 6

Information on photo: 18214

318949.0913 Male in military uniform and stocking feet standing on gridded table in front of gridded background on two foot measuring devices. Second male in suit stands to left observing., undated

Notes: Card Number: 13
Category: foot measuring study
Copy negative: 94-10684
Information on photo: 18214

318949.0914 Person in stocking feet standing on gridded table with cyclegraph light attached. Male stands in front of foot measuring machine with cyclegraph lights attached to hands., undated

Notes: Card Number: 32
Category: foot measuring study
Copy negative: 94-10685
Information on photo: 18181 ?

318949.0914 Chronocyclegraph of foot measuring. Visible on gridded table is a stocking foot with light attached and a foot measuring device. Also visible are two hands with lights attached., undated

Notes: Card Number: 27
Category: foot measuring study
Copy negative: 94-10685
Information on photo: 18191?

318949.0915 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left measuring the subjects foot. Subject stands in two foot measuring devices., undated

Notes: Card Number: 29
Category: foot measuring study
Copy negative: 94-10686
Information in photo: 6
Information on photo: 18227

318949.0915 Male in military uniform and stocking feet standing on gridded table in front of gridded background on two foot measuring devices. Second male in suit stands to left observing., undated

Notes: Card Number: 25
Category: foot measuring study
Copy negative: 94-10686
Information on photo: 18227

318949.0916 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left measuring the subjects foot. Subject stands in two foot measuring devices., undated

Notes: Card Number: 20
Category: foot measuring study
Copy negative: 94-10687
Information in photo: 6

Information on photo: 18227

318949.0917 Male in military uniform and stocking feet standing on gridded table in front of gridded background with two foot measuring devices. Second male in suit stands to left observing. Motion picture camera on tripod visible., undated

Notes: Card Number: 13
Category: foot measuring study
Copy negative: 94-10682

318949.0918 Male in military uniform and stocking feet standing on gridded table in front of gridded background, also visible foot measuring device. Second male in suit stands to left. Motion picture camera on tripod is visible., undated

Notes: Card Number: 24
Category: foot measuring study
Copy negative: 94-10681
Information in photo: 9
Information on photo: 18221

318949.0919 Male in military uniform and stocking feet standing on gridded table in front of gridded background. Foot measuring device is visible on table., undated

Notes: Card Number: 30
Category: foot measuring study
Copy negative: 94-10680
Information in photo: 10
Information on photo: 18229

318949.0920 Male in military uniform and stocking feet standing on gridded table in front of gridded background on a piece of paper. Caliper is visible to left of subject. Second male in suit and cap stands to right measuring the subjects foot. Motion picture camera on tripod is visible., undated

Notes: Card Number: 22
Category: foot measuring study
Copy negative: 94-10679
Information on photo: 18195

318949.0921 Instructional series in how to use foot measuring machine. Male in military uniform and stocking feet standing on gridded table in front of gridded background. Two additional males stand to right holding signs. The army foot measuring machine. Foot measuring machine in place., undated

Notes: Card Number: 27
Category: foot measuring study
Copy negative: 94-10678
Information on photo: 18226

318949.0922 Wood model of giant foot in a giant shoe (?) sitting atop a desk in an office. Telephone visible in background. Ghost image of person sitting in a chair on the right., undated

Notes: Card Number: 27
Category: foot measuring study
Copy negative: 94-10677
Information in photo: 18134

318949.0923 Wood model of giant foot and giant shoe (?) sitting atop a desk in an office. Telephone visible in background. Ghost image of person sitting in a chair on the left., undated

Notes: Card Number: 34
Category: foot measuring study
Copy negative: 94-10675
Information in photo: 18130

318949.0924 Cyclegraph of stocking feet, undated

Notes: Card Number: 33
Category: foot measuring study
Copy negative: 94-10676
Information in photo: 29
Information on photo: 18232

318949.0925 Instructional series in how to use foot measuring machine. Male in military uniform and stocking feet standing on gridded table in front of gridded background. Second male in suit stands to left side holding foot measuring device. A third male in military dress holds sign It is important that the foot should rest in the exact centre of the machine., undated

Notes: Card Number: 21
Category: foot measuring study
Copy negative: 94-10674
Information on photo: 18192

318949.0926 Two females standing at gridded table with pencils poised over tablets of paper., undated

Notes: Card Number: 37
Category: office study
Copy negative: 95-20138

318949.0927 Hand removing pen from Andre type pen holder which sits on a gridded desk., undated

Notes: Card Number: 87
Category: office study
Copy negative: 95-20139
Information on photo: 17000.62

318949.0928 Andre type pen holder sitting on a gridded desk., undated

Notes: Card Number: 86

Category: office study
Copy negative: 95-20140
Information on photo: 17000.58

318949.0929 Hand removing a pin from cork block in an Andre type pen holder which sits on a gridded table., undated
Notes: Card Number: 11
Category: office study
Copy negative: 95-20141
Information on photo: 17666.T2

318949.0930, Close-up of male with piez nez holding a piece of leather (?) and an unidentified object., undated
Notes: Card Number: 10
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 95-20142
Information on photo: 17199

318949.0931 Male and female seated at gridded table with pens poised over tablets of paper., 28-Nov-14
Notes: Card Number: 32
Category: office study
Copy negative: 95-20143
Information on photo: 28.XI.14T206

318949.0932 Hand putting paper clip on papers with Andre pen holder visible in background sitting on a gridded desk., undated
Notes: Card Number: 82
Category: office study
Copy negative: 95-20144
Information on photo: 17000-59

318949.0933 Hand removing a paper clip from an Andre pen holder setting on a gridded desk., undated
Notes: Card Number: 81
Category: office study
Copy negative: 95-20145
Information on photo: 17000.64

318949.0934 Male wearing vest and tie seated at gridded table in front of gridded background. On table is an Andre pen holder and a motion clock., undated
Notes: Card Number: 6
Category: office study
Copy negative: 95-20146
Information in photo: 16067

318949.0935 Enlargement of two partial and one full motion picture frames. Image shows male standing on gridded floor in front of gridded background in an unidentified motion study. Also visible is another unidentified male, Frank Gilbreth, and several clocks., undated

Notes: Card Number: 5
Category: business and apparatus of motion study
Copy negative: 95-20147

318949.0936 Detail of motion picture camera with hands apparently showing film transport., 17-Mar-15

Notes: Card Number: 4
Category: business and apparatus of motion study
Copy negative: 95-20148
Information on photo: 17.III.15T421

318949.0937 View of over eighty men in military uniforms and carrying rifles marching on a stone paved street in front of a multistory buildings., undated

Notes: Card Number: 3
Category: business and apparatus of motion study
Copy negative: 95-20149

318949.0938 Male in military uniform standing on garden path holding a small child. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'c. 1917 or 1918, one of Lillian's brothers. Possibly baby Fred (b. August 1916). I believe all three of them served in WWI.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Fred Moller with Family' [Fred Moller was LMG's brother]., undated

Notes: Card Number: 25
Category: Gilbreth Family
Copy negative: 95-20150

318949.0939 Standing male wearing military uniform with cane or sword taken in an industrial interior., 17-Apr-15

Notes: Card Number: 8
Category: business and apparatus of motion study
Copy negative: 95-20151
Information on photo: 17.4.15T479

318949.0940, Four seated males and one standing male all wearing military uniform taken in an office. In background is a desk and a map of the United States. Also visible is a ghosted image of Frank Gilbreth, undated

Notes: Card Number: 111
Category: business and apparatus of motion study
Copy negative: 95.20152
Information on photo: 1700.47

318949.0941 Four seated males and one standing male all wearing military uniform taken in an office. In background is a desk and a map of the United States. Also visible is a ghosted image of Frank Gilbreth, undated

Notes: Card Number: 110
Category: business and apparatus of motion study
Copy negative: 95.20153
Information on photo: 1700.47

318949.0942 Four seated males and one standing male all wearing military uniform taken in an office. In background is a desk and a map of the United States. Also visible is a ghosted image of Frank Gilbreth, undated

Notes: Card Number: 109
Category: business and apparatus of motion study
Copy negative: 95-20154
Information on photo: 17000.47

318949.0943 Four seated males and one standing male all wearing military uniform taken in an office. In background is a desk and a map of the United States. Also visible is a ghosted image of Frank Gilbreth., undated

Notes: Card Number: 108
Category: business and apparatus of motion study
Copy negative: 95-20155
Information on photo: 17000.47

318949.0944 Male in military overcoat and cap holding a cigarette in unidentified industrial interior., 27-Jan-15

Notes: Card Number: 3
Category: business and apparatus of motion study
Copy negative: 95-20156
Information on photo: 27.1.15T217

318949.0945 Adult male in military uniform standing on sidewalk in front of frame house. both images scratched. This is one of Lillian's three brothers, all of whom served in WWI; this is possibly Fred. Standing outside Moller family home in Oakland., undated

Notes: Card Number: 2
Category: Gilbreth Family
Copy negative: 95-20154

318949.0946 Close-up of female and male child in backyard (original negative partially fogged) Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Ernestine and Jack (I think) about 1923 or 1924.', c. 1923 or 1924

Notes: Card Number: 4
Category: Gilbreth Family
Copy negative: 95-20390
Gilbreth image: 220-171

Information on photo: 220.171

318949.0947 Close-up of three male children standing in backyard with a house and trees visible in background. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From left: Dan Gilbreth (b. 1917); Jack Gilbreth (b. 1919); Bob Gilbreth (b. 1920). So, about 1923? In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: confirms Jane's observations, above. Dates 1923., 1923

Notes: Card Number: 2
Category: automobile assembly study
Copy negative: 95-20388
Information on photo: 220.165 (?)

318949.0948 Close-up of Ernestine and either Jack or Bon Gilbreth in backyard with trees visible in background. C. 1923. (ID via Jane Lancaster)., undated

Notes: Card Number: 21
Category: Gilbreth Family
Copy negative: 95-20393
Gilbreth image: 220-172
Information on photo: 220.172

318949.0949 Gilbreth motion study exhibit including photographs and wire models., undated

Notes: Card Number: 10
Category: Misc.
Copy negative: 80-20600

318949.0950 Gilbreth family in family automobile foolish carriage. , c. August 1920

Notes: Card Number: 5
Category: Gilbreth Family
Copy negative: 95-20391
Gilbreth image: 220.158
Information on photo: 220.158
Frank, Lillian and 11 children visible. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'The famous Pierce Arrow (with right hand drive). Photo taken August 1920 probably on Nantucket. From back row left to right Jack; Dab; Fred; Bill-next row: Martha, Ernestine, Anne; Lil; Frank; parents Frank and Lillian, holding Bob (born July 1920). In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Montclair, NJ 1922. [this accords with neg. number of 220.158]

318949.0951 Close-up of three male children standing in backyard with a house and trees visible in background. From left to right: Dan (b. 1917); Jack (b. 1919); Bob (b. 1920). see also 318949.0947. Take about 1923. Left edge missing, 1923, c.

Notes: Card Number: 3
Category: Gilbreth Family
Copy negative: 95-20386
Gilbreth image: 220.16
Information on photo: 220.16
Subject names: Dan, Jack,, Bob Gilbreth

318949.0952 Gilbreth family in family automobile foolish carriage. Frank, Lillian and 11 children visible. To figure out who is who, check out the image and notes for 318949.0949., undated

Notes: Card Number: 6
Category: Gilbreth Family
Copy negative: 95-20387
Information on photo: 220.155

318949.0953 Gilbreth family in family automobile foolish carriage. Frank, Lillian and 11 children visible. right corner missing, left image scratched., undated

Notes: Card Number: 7
Category: Gilbreth Family
Copy negative: 95-20392

318949.0954 Male (James Dodge) seated at ornate desk. Office filled with photographs and a plaque which says Buick Dodge., undated

Notes: Card Number: 49
Category: business and apparatus of motion study
Copy negative: 95-20443

318949.0955 Seated male (James Dodge) in unidentified front yard., undated

Notes: Card Number: 50
Category: business and apparatus of motion study
Copy negative: 95-20442

318949.0956 Seated male (James Dodge) in unidentified front yard., undated

Notes: Card Number: 14
Category: business and apparatus of motion study
Copy negative: 95-20441

318949.0957 House interior with LMG holding an infant--probably either Frank, Bill, or Lillian., undated

Notes: Card Number: 15
Category: Gilbreth Family
Copy negative: 95-20440

318949.0958 Seated female typist, Miss Margaret Owen of Underwood Typewriter Company, in motion study set-up. Motion picture camera and standing female (Lillian Moller Gilbreth) visible., 1916, April c.

Notes:

Card Number: 425

Category: typing study

Collection: NMAH

Copy negative: 95-20439

Gilbreth image: GL438

Information on photo: GL438

Job name: Remington Typewriter, Ilion New York

Related captions: The following captions courtesy of Dave Ferguson, who culled them from the Purdue archives, mostly from N File 45, 0265-17 and N File 34, 0207-3. Note that some of the captions reference a cyclegraph; this image, GL413, is not a cyclegraph.

GL-415 "This shows researches especially made to produce a championship typist."

GL-417 "THORO Motion studies of methods of spelling and their effect upon the motions of a world champion typist. Spelling in the old way and in accordance with the recommended spellings of the Simplified Spelling Board. Note the chronocyclegraph method is also useful for guidance in the design of machinery. These pictures show the long motions of the left hand required to return the carriage when the carriage return hook is on the left end of the carriage."

GL-419 "Cyclegraph of left hand returning carriage of typewriter. This shows the left hand should not be used for carriage return as the path is too long and the fingers lose their position on the keys."

GL-424 [Cyclegraph of simplified spelling 'through' vs. 'thoro'.]

GL-424 "Chronocyclegraph of determining machine design. The carriage return hook is on the left hand end of the carriage, and the motion is much longer than the models with the return on the right."

"The use of micromotion and chronocyclegraph in machine design. This shows the path of the left hand returning the carriage of a well known make of typewriter. The operator being a world champion."

"This shows the path of a champion on the Underwood typewriter and the path is very much longer than on those machines where the carriage return hook is on the right hand end of the carriage."

GL-426 "This picture and many that will follow it will show the trend in America to-day toward the discovery of the one best way to do work. This picture is a motion study laboratory where there is special investigation going on to find information regarding key-stroke and finger-stroke machines, such as monotype adding machine, typewriter, stenotype and other

similar machines. In some of the cases the lights are very close to the worker as in GL-426 because a very large number of pictures per second are being photographed."

GL-427 "Path of left hand returning the carriage of a typewriter, carriage-return hook of which is on the left end of the carriage."

GL-428 "Testing the tests for the scientific selection of workers. After making tests which were supposed to be of value for selecting candidates for intensive training to become champions in typing, we submitted the tests to the people who had been champions. The woman in this picture was the champion of the world. Note that the clock shows the time of exposure of the picture, in that the blur on the hands records the time that the shutter was opened, or in other words, the shutter was open in this picture about thirty nine two thousandths of a minute, each division on the clock being half a thousandth of a minute."

"This is a picture of a former champion typist of the world showing her position on a typewriter. At least her idea of her position on a typewriter and here is a remarkable fact that of the many thousand motion pictures taken of this young lady, not a single solitary frame shows any picture anything like the one that she has posed thinking that it was the way that she actually held her hands during her typewriting. In other words this is another fine illustration of the fact that even the expert demonstrator does not know what motion he or she uses and that the methods and motions taught to the beginner at demonstration are actually used by the expert himself during his regular practice. Therefore the entire method of teaching in our trades is wrong and that the only way to teach at demonstration speed the real motions and real methods of the expert is to take the picture very fast and project them very slow, thus slowing down the expert operator with his real motions to a speed that can be seen by the learner."

"A world champion demonstrating slowly the position which she thinks her hands are in when operating at full speed. Thousands of micromotion pictures of her at full speed show no position like this. This is one more proof that fast motions and slow motions are not alike and that no one can correctly demonstrate slowly the motions that they make at the full speed of actual practice."

Location of subject: Gilbreth Motion Study Laboratory, Providence RI

Subject names: seated: Miss Margaret Owen of Underwood Typewriter Company; standing and leaning over: Lillian Moller Gilbreth

318949.0959 Two female adults seated on chairs with risers at table engaged in unidentified work., undated

Notes:

Card Number: 424

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 95-20438

Gilbreth image: 17116

Information on photo: 17116

318949.0960, Interior of house, paneled dinning room with china cupboard in corner and plate rail., undated

Notes: Card Number: 124
Category: Gilbreth Family
Copy negative: 95-20437

318949.0961 Easel with chart showing routing or flow diagram of a factory., undated

Notes: Card Number: 423
Category: business and apparatus of motion study
Copy negative: 95-20436

318949.0962 Family seated at dinner table (Thanksgiving). Visible are Frank, Lillian, six children, one unidentified male adult and two unidentified female adults., undated

Notes: Card Number: 18
Category: Gilbreth Family
Copy negative: 95-20435
Information on photo: ThanksgivingGF

318949.0963 Three female adults standing on or in front of porch of house taken in winter. Urban residential street visible in background. On the left: Annie Degler Moller, LMG's mom; in center is LMG; on right is probably one of LMG's sisters. Taken at 77 Brown Street, Providence., I am pretty sure. [EHB], 1915?

Notes: Card Number: 17
Category: Gilbreth Family
Copy negative: 95-20434
Information on photo: GF80
Location of subject: Providence RI

318949.0964 Interior of highly decorated dinning room (wedding party?)., undated

Notes: Card Number: 19
Category: Gilbreth Family
Copy negative: 95-20433

318949.0965 Work station in front of gridded background. Motion clock visible in background. Table has rack on side lettered jobs to be done, undated

Notes: Card Number: 63
Category: assembly study
Copy negative: 95-20432
Information in photo: 1809
Information on photo: EFG78

318949.0966 Male and female adults standing on pathway in backyard garden. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'One of Lillian's brothers with his wife. Could be Frank who married Kathleane Heathorne in 1917. The other 2 boys married much later.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: Frank Moller's parents, c. 1918. [This would be LMG's aunt and uncle]., undated

Notes: Card Number: 22
Category: Gilbreth Family
Copy negative: 95-20431

318949.0967 Lillian, Carol Cross, and five of the Gilbreth children seated on front porch of house. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: Kids: left to right: Bill ; Frank in front; Martha with necklace far right; Anne on Lillian's shoulder? c. 1914.' Location: Buttonwoods, RI? In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: woman at top left is Carol Cross, a niece; she's leaning over an unknown little girl (who Jane labels Ernestine, but you have to wonder since Ernestine doesn't label herself--or maybe she didn't think it necessary); boy in foreground right is Frank Jr., girl on LMG's shoulder is Anne; Martha to far right with necklace. Dave Ferguson points out that Carol Cross is Anne Cross' daughter, and FBG's niece., undated

Notes: Card Number: 21
Category: Gilbreth Family
Copy negative: 95-20430
Information on photo: D2

318949.0968 House interior with LMG adult holding an infant (Frank, Bill, or Lillian)., undated

Notes: Card Number: 20
Category: Gilbreth Family
Copy negative: 95-20429

318949.0969 Interior corridor of a factory (New England Butt Company) with a display case of books. Sign reads Public Library Branch, for use of all employees, apply at information bureau. The image depicts the Providence Public Library branch which the Gilbreths had established in the Fall of 1912., 1912 c.

Notes: Card Number: 24
Category: betterment
Collection: NMAH
Copy negative: 95-20428
Information on photo: Frank B. Gilbreth
Job name: New England Butt Company, Providence, RI
Job number: 610

Related captions: "P59 Public Library Branch in an industrial plant--a method of providing recuperation from fatigue." (courtesy of Dave Ferguson via GPP).

"LLI. Cooperating with the Public Librarian for the education of the workman. This window showing various books supplied by the libraries is located right adjoining the window where the men come to get thier new work tickets from the Planning Department and they can thus utilize their periods of "unavoidable delay" [a therblig] by looking over the books and deciding which one they want." GPP NF1/0019 vol. III.

"A plant library is becoming a regular institution. It is usually one of the first things introduced by the welfare or betterment department...In a typical New England plant [i.e, New England Butt] the librarian of the city was more than willing to cooperate. He asked the plant to supply a list of the books which he should send. His letter was discussed in the foremen's meeting, and every ember present helped by submitting a list of books that he had read and enjoyed most in his life. From these lists a list of fifty books was made up and sent to the librarian, who pronounced it the best list that he had ever seen. The books were promptly brought to the plant, and put in a convenient place where every member of the organization could see the titles and borrow them...." for a fuller discussion, see the material from which this quote (pp. 73-74) is drawn: Frank B Gilbreth and Lillian M. Gilbreth *Fatigue Study: the Elimination of Humanity's Greatest Unnecessary Waste; A First Step in Motion Study* (NY: Sturgis and Walton, 1916; reprint NY: The MacMillan Company, 1919): 54-75.

Location of subject: New England Butt Company, Providence, RI

318949.0970, Two bookcases loaded with papers in industrial interior (New England Butt Company). Sign over bookcase reads Periodicals Books Newspapers Take as many as you want bring as many as you can and drop them in the box.', 1912 c.

Notes:

Card Number: 84

Category: betterment

Collection: NMAH

Copy negative: 95-20427

Gilbreth image: 206.328

Information on photo: 206.328home reading box

Job name: New England Butt Company, Providence RI

Job number: 610

Original caption: "This shows the 'Home Reading Box,' which is kept supplied with magazines, technical papers, and other forms of entertaining and instructive literature; and from which the workers can help themselves in such quantities as they may like." NF 1/0019 vol. III

Related captions: "Shows the passing of magazines from the wagon into the plant. The plant box is placed directly below

the window, where, if no one is inside waiting to take the magazines, they may easily be dropped from the outside of the plant without disturbing anyone inside." NF1/0019 vol. III.

Location of subject: New England Butt Company, Providence RI

318949.0972 Family seated at dinner table (Thanksgiving). Visible are Frank, Lillian, six children, one unidentified male adult and two unidentified female adults. Providence, RI.

Notes: Card Number: 10
Category: Gilbreth Family
Copy negative: 95-20425

318949.0973 Interior of heavily decorated living (?) room. Visible is a standing bear sculpture a large indian basket, and a flower arrangement., undated

Notes: Card Number: 9
Category: Gilbreth Family
Copy negative: 95-20424

318949.0974 Interior of bedroom with three females visible, one is making the single bed. Inside #77 Brown Street. See also acc. no. 318949.0908. Possible tonsil experiment? Orthodonture work of Jane Bunker?, undated

Notes: Card Number: 8
Category: Gilbreth Family
Copy negative: 95-20423
Gilbreth image: GL-
Information on photo: C-L56

318949.0975 Male in suit and female in wedding dress standing in front of palm tree. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'This is Lil's sister, Josie (1886-1960) who married Jay Van Horn (1883-1964) in 1915. They had three children.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'unknown? Delger and Helen Throbridge' (sp.) [this would be LMG's cousins]., undated

Notes: Card Number: 7
Category: Gilbreth Family
Copy negative: 95-20422
Location of subject: Oakland, CA

318949.0976 William Moller and Annie Delger Moller standing with rear of their Prospect Ave. Oakland house visible in background., undated

Notes: Card Number: 6
Category: Gilbreth Family
Copy negative: 95-20421

318949.0977 Interior of house (entrance hallway ?), undated

Notes: Card Number: 5
Category: Gilbreth Family

Copy negative: 95-20420

318949.0978 Gilbreth children play in the surf at Block Island summer 1915. Kids: left to right Martha and Frank Jr. see acc. 318949.1223 and 318949.1222., 1915

Notes: Card Number: 4
Category: Gilbreth Family
Copy negative: 95-20419
Information on photo: block island 1915
Location of subject: Block Island, NY

318949.0979 Frank Gilbreth and seven other males seated at a table (stenciled plate rail visible on wall),, undated

Notes: Card Number: 53
Category: business and apparatus of motion study
Copy negative: 95-20586

318949.0980, One armed male, Mr. Casey, sits at special typewriter on a gridded table in front of gridded background as Frank Gilbreth watches on. Motion clock also visible., 1916

Notes: Card Number: 29
Category: disabled study, typing study
Collection: NMAH
Copy negative: 95-20585
Gilbreth image: 16264

Original caption: 16264. This picture shows the method of tearing off the sheets, four at a time, to a very straight edge on the top of the paper. While this tearing does not give as straight an edge at the top and bottom of the sheet, as is usual on cut sheets, it is plenty straight enough and does not vary a millimeter from a true straight line. There is also a saving in paper in that the paper is torn off at the bottom of the letter, wherever the bottom of the letter comes." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16264. Single keyboard typewriting machine for any number of sheets up to four. No carbon paper is required, as ribbons serve the purpose, thus reducing the number of motions to a minimum. The magazine holding a weeks supply of paper is attached to, and travels with, the carriage. The sheets may be torn off separately, or all at once, against a sharp, straight, edge. This single keyboard machine can be used with capitals and small letters even by a one fingered typist by locking the shift key down when a capital is required; but much greater speed can be attained if capitals only are used, tho this retards the speed of reading of most people, slightly." Descriptions of photographs, GPP, NF1/0019 vol. III.

Related captions: "16263. This shows a typewriter made for a one-armed man. This machine can be operated faster than a champion typist can write short letters because no carbon papers are necessary and four good copies are made by means

of the ribbons attached to the machine. The time saved in handling carbon papers is more than enough to enable this cripple to make unheard of records as compared with other ordinary machines. This machine obviously can be operated by a man who has but one eye, no ears, one arm and no legs. It is manufactured by the Remington Typewriter Co." Captions for glass diapositives, GPP, NF 1/0019 vol. III.

"16274. One armed, legless, one-eyed typist writing more letters per day than the champion of the world can write provided more copies of the letters are made and the letters are short. In other words this arrangement permits using a magazine of paper and does away with all use of carbon and putting in the paper once the roll is inserted." Captions, GPP, NF1/0019 vol. III.

"16273 & 16274. Single keyboard machine with lockable shift key and automatic line indenting keys for beginning the first work of a line of any point of the line with one motion of one finger. Any number of rolls of paper, up to four, are fastened to the wall or other support about two feet above the typewriter, thus adding no weight, and causing no slowing down of the movement of the carriage." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16276. Phantom picture made by double exposure, showing the total range of movement of the head and back, of a one armed typist, necessary to operate this combination after a month's supply of paper providing for four copies has once been inserted for him. The shift key for making either capitals or small letters can be operated by either foot or knee, or, if the typist has no limbs at all except one finger or one thumb, the shift key can be locked down with one motion, long enough to make the capital and released again for the small letters. To attain still greater speed the shift key may remain in such locked position, thus making all letters capitals. This machine is a combined typewriter and addition and subtraction machine. The same motion that presses the key to print the figure operates the addition and subtraction machine. Therefore, this combination offers to the legless, one armed, one eyed, deaf, stiff backed cripple a chance to get back on the payroll, regardless of what he may also get as a pension. Some idea of the distance of motions can be obtained from the cross sectioned background, the lines of which are four inches, or approximately ten centimeters apart." Descriptions of photographs, GPP, NF1/0019 vol. III.

"16282 & 16282-A. Double keyboard machine with upper and lower case letters requiring no shift key. This assembly is for not more than two copies. No carbon paper is required as a typewriter ribbon serves the purpose instead. The top and bottom edges of the sheets that are torn off are straight and true enough for most purposes. They can, of course, be trimmed with shears or cutters if desired, but when it is understood that the torn edge is the handmark of crippled employment it will be rather desirable than otherwise. If greater economy of paper

is desired, the printing can be put in repetitive form in the left hand margin and the paper can then be torn off just below the last line, regardless of the length of the sheet." Descriptions of photographs, GPP, NF1/0019 vol. III."

17396. Simultaneous motion cycle chart of time required by a one armed typist on special typewriter to tear off three papers from the roll on which he wrote the letters." FBG to Frank Watts, Oct. 21 1921, pg. 7, GPP NF1/0019 vol. III.

Location of subject: Gilbreth Motion Study Laboratory, Providence, RI

Subject names: Mr. Casey, secretary to the Mayor of Boston

318949.0981 Frank Gilbreth and an unidentified male sit at a gridded desk. Visible is a stereoviewer and many charts hanging on a wall (stenciled plate rail visible.), undated

Notes: Card Number: 90

Category: business and apparatus of motion study

Copy negative: 95-20584

318949.0982 Three adults and one infant sitting on deck chairs aboard ship., undated

Notes: Card Number: 19

Category: Gilbreth Family

Copy negative: 95-20568

318949.0983 Frank Gilbreth and four unidentified males standing on the deck of a ship, undated

Notes: Card Number: 4

Category: Gilbreth Family

Copy negative: 95-20583

318949.0984 Three males working on large tables with small bits of metal or paper (possibly making route diagrams) A long line of sinks is visible on the back wall., undated

Notes: Card Number: 6

Category: business and apparatus of motion study

Copy negative: 95-20582

Information on photo: 1094

318949.0985 Several unidentified adults (possibly playing shuffleboard aboard a ship), undated

Notes: Card Number: 21

Category: Gilbreth Family

Copy negative: 95-20581

318949.0986 Two standing males and a table full of metal parts., undated

Notes: Card Number: 7

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 95-20580

318949.0987 Frank Gilbreth and male in suit and bowler hat looking at packet board., 1912?

Notes:

Card Number: 45

Category: assembly study

Collection: NMAH

Copy negative: 95-20579

Gilbreth image: 610 GGA

Information on photo: 610 GGA

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).regarding the packet:

"610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that

time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH).

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

"610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to

decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

Location of subject: New England Butt Company, Providence, RI

Subject names: ?

Box 7

318949.0988 Four female workers wearing dresses and caps stand at tables assembling or packing something.

318949.0989 Work station in front of gridded background. Motion clock visible in background., undated

Notes: Card Number: 64
Category: assembly study
Copy negative: 95-20577
Information in photo: 1809

318949.0990 Two females standing on porch of house (one on right is Lillian). , 1913?

Notes: Card Number: 10
Category: Gilbreth Family
Copy negative: 95-20576
Gilbreth image: GF70
Information on photo: GF70

See also 318949.1231. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Anne Delger Moller [Lillian's mother] and Lillian, porch of 77 Brown Street, Providence.' This might be the Cross house, since it looks like the third woman in this series might be Anne Cross. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Providence RI. Grossie and LMG.' As for location: Dave's notes (not sure his observation or Ernestine's: 'Annie Moller and Lillian Gilbreth, in front of Anne Cross' house (Frank's sister, who lived around the corner in Providence.)'

318949.0991 One male and two females standing outside building with large columns and covered with ivy. FBG on left; LMG in middle; who knows on right. Brown 1915?, undated

Notes: Card Number: 11
Category: Gilbreth Family
Copy negative: 95-20575

318949.0992 Close-up of seated adult female. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Annie Delger Moller [Lillian Gilbreth's mother]--I think, but not positive.' [Doesn't look like it--see below] In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Relative (Brown side?)' These Browns were from California., undated

Notes: Card Number: 12
Category: Gilbreth Family
Copy negative: 95-20574

318949.0993 Two seated males, undated

Notes: Card Number: 13
Category: business and apparatus of motion study
Copy negative: 95-20573
Information on photo: 16255

318949.0994 Interior of room filled with plants. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Inside the Moller's Propsect Avenue house, 1917. The same room appears in L+F's wedding photos, which are at Purdue.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Moller greenhouse, 29th St. (Oakland)' [I think Prospect Ave. later became 29th St.], undated

Notes: Card Number: 14
Category: Gilbreth Family
Copy negative: 95-20572

318949.0995 Interior of room filled with plants. Moller Prospect Ave house, Oakland., undated

Notes: Card Number: 15
Category: Gilbreth Family
Copy negative: 95-20571

318949.0996 Seated male (James Dodge) in unidentified yard., undated

Notes: Card Number: 51
Category: business and apparatus of motion study
Copy negative: 95-20570

318949.0997 Three adult females standing outside of house: on left, LMG; in middle perhaps a sister or Annie Cross, Frank's sister; to right, mom Annie Delger Moller, in Providence c. 1915., undated

Notes: Card Number: 16
Category: Gilbreth Family
Copy negative: 95-20569
Gilbreth image: GF72
Information on photo: GF72

318949.0998 Interior of heavily decorated room, undated

Notes: Card Number: 17
Category: Gilbreth Family
Copy negative: 95-20567

318949.0999 Male seated outside of house playing the accordian. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'One of Lillian's brothers, California 1917.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Fred Moller.' [one of Lillian's brothers]., undated

Notes: Card Number: 18
Category: Gilbreth Family
Copy negative: 95-20566

318949.1000, Dining table set for an ornate meal. This is the Gilbreth's dining room at 77 Brown Stree, Providence (not wisteria screen)., undated

Notes: Card Number: 19
Category: Gilbreth Family
Copy negative: 95-20565
Location of subject: Providence, RI

318949.1001 Interior of heavily decorated family, piano and painting are prominent. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Ernestine and Dan failed to recognize this, but I suspect it may be the inside of the Moller's house on Prospect Avenue. Lil's Aunt Matilda Delger Brown had made a large religious tapestry when she was a convent school girl. Can this be it?' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: she confirms it is the Moller home interior., undated

Notes: Card Number: 20
Category: Gilbreth Family
Copy negative: 95-20561

318949.1002 Adult male holding an infant while standing in front of a house. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'William Moller, Lil's

father. Don't know which baby (possibly Fred, b. August 1916), but this is the same house as 318949.0442 and 318949.0575. So I am assuming--no, I'm positive--having looked at 318949.0427, that is in the Prospect Avenue house--this is the porte cochere-sp.-at the right of the picture.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Wm. Moller. Anne or Ern.', undated

Notes: Card Number: 21
Category: Gilbreth Family
Copy negative: 95-20564

318949.1003 Frank Gilbreth and another male standing in interior of office with boards on an easel., undated

Notes: Card Number: 24
Category: business and apparatus of motion study
Copy negative: 95-20563
Information on photo: ??? ?? ???planning ??

318949.1004 Interior of an office with Frank Gilbreth and one male standing and one male sitting looking at a stereo viewer., undated

Notes: Card Number: 22
Category: business and apparatus of motion study
Copy negative: 95-20562
Information on photo: 181T

318949.1005 Frank Gilbreth sits at a gridded desk looking at a piece of paper. To the right a second male looks into a table top stereo viewer. The wall behind them is covered with charts. Visible on the desk is an Andre pencil holder and an in out basket. Also visible is a stenciled plate rail., 12-Apr-15

Notes: Card Number: 7
Category: business and apparatus of motion study
Copy negative: 96-1700
Information on photo: 12.4.15T4

318949.1006 Frank Gilbreth seated at a gridded table is studying an unidentified piece of apparatus. Also visible is a stereo camera., undated

Notes: Card Number: 6
Category: Frank B. Gilbreth
Copy negative: 96-1701

318949.1007 A grossly out of focus photograph of the face of an unidentified male., undated

Notes: Card Number: 9
Category: misc.views
Copy negative: 96-1702
Information on photo: 220.164

318949.1008 Frank Gilbreth sits at a gridded desk holding a pencil. To the right a second male sits in front of a table top stereo viewer. The wall behind

them is covered with charts. Visible on the desk is an Andre pencil holder and an in out basket. Also visible is a stenciled plate rail., undated

Notes: Card Number: 8
Category: business and apparatus of motion study
Copy negative: 96-1703

318949.1009 Unidentified cyclegraph. Invisible individual at a gridde desk in front of a gridded background preforming some type of action. Frank Gilbreth stands to one side. Two motion clocks and an additional gridded screen are also visible., undated

Notes: Card Number: 10
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 96-1704

318949.1010, Double exposure of Frank Gilbreth standing in unidentified room. Wall clock visible at top of image. Image printed backwards., September 30 1914

Notes: Card Number: 12
Category: misc.views
Copy negative: 96-1705
Information on photo: 30.XI.14T225

318949.1011 Motion study demonstration (?) A group of about 7 male and female seated individuals grouped in a semi-circle around Frank Gilbreth. To the right of Frank is a seated female and to the right of her a second seated female on a raised platform. Behind Frank is some type of chart board., 14-Apr-15

Notes: Card Number: 8
Category: business and apparatus of motion study
Copy negative: 96-1706
Information on photo: 14.IV.15T405

318949.1012 Frank Gilbreth sits at a gridded desk looking at a piece of paper. To the right a second male looks into a table top stereo viewer. The wall behind them is covered with charts. Visible on the desk is an Andre pencil holder and an in out basket. Also visible is a stenciled plate rail. Photographic plate missing left top corner., undated

Notes: Card Number: 10
Category: business and apparatus of motion study
Copy negative: 96-1707

318949.1013 Frank Gilbreth and six unidentified male figures in front of a table with unidentified objects. One individual is dressed in suit and tie the rest, including Frank, appear to be in military garb., undated

Notes: Card Number: 3
Category: military study
Copy negative: 96-1708
Information on photo: 17000.46

318949.1014 Frank Gilbreth seated at desk with male child on his lap. Pencil sharpener visible in background., undated

Notes: Card Number: 2
Category: Gilbreth Family
Copy negative: 96-1709
Information on photo: GF45

318949.1015 Frank Gilbreth seated at a gridded table is studying an unidentified piece of apparatus. Also visible is a stereo camera., undated

Notes: Card Number: 5
Category: Frank B. Gilbreth
Copy negative: 96-1710

318949.1016 Frank Gilbreth and unidentified male standing in front of gridded table and writing in air with light Prof. S????? A?????., undated

Notes: Card Number: 20
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 96-1711

318949.1017 Frank Gilbreth and another male both wearing military uniforms standing in the bedroom of an unidentified house., undated

Notes: Card Number: 19
Category: military study
Copy negative: 96-1712
Information on photo: 17000.45

318949.1018 Frank Gilbreth and unidentified male seated at a gridded desk. Visible is an Andre pen and pencil holder, in out basket, and stereo viewer. On wall in background are pinned numerous documents. Also visible is a stenciled plate rail. Plate is printed backwards., undated

Notes: Card Number: 18
Category: business and apparatus of motion study
Copy negative: 96-1713

318949.1019 Scientific management class. Frank Gilbreth standing in front of routing (?) board and an audience (and perhaps subject) of at least 9 male and female participants., 5-Feb-14

Notes: Card Number: 9
Category: business and apparatus of motion study
Copy negative: 96-1714
Information on photo: 14.II.5T466

318949.1020, Frank Gilbreth seated at a gridded table holding unidentified objects., undated

Notes: Card Number: 8
Category: Frank B. Gilbreth
Copy negative: 96-1715

318949.1021 Frank Gilbreth, three children, one identified female, and two identified males seated at a table in a forested backyard., undated

Notes: Card Number: 7
Category: Gilbreth Family
Copy negative: 96-1716

318949.1022 Frank Gilbreth and another male both wearing military uniforms standing in the bedroom of an unidentified house., undated

Notes: Card Number: 14
Category: military study
Copy negative: 96-1717
Information on photo: 17000.45

318949.1023 Frank Gilbreth seated at a table with a string model. Frank is wearing goggles (possible to blindfold himself) and appears to be tracing the model with his fingers. A couch and rocking chair are visible in the background., undated

Notes: Card Number: 4
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 96-1718

318949.1024 Frank Gilbreth and unidentified woman seated at a table with string diagrams. The woman is wearing dark goggles (perhaps as a blindfold) and Frank is tracing her hand over the strings., undated

Notes: Card Number: 35
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 96-1720
Information on photo: 19200

318949.1025 Frank Gilbreth hunched over a gridded table assembling or arranging something., 12-May-14

Notes: Card Number: 31
Category: Frank B. Gilbreth
Copy negative: 96-1719
Information on photo: 5.XII.14T317

318949.1026 Frank Gilbreth and another standing male (John Aldrich?) in attic room at New England Butt Company. Several braiding machines are visible. I suspect this was made after 1912, when FBG returned to NE Butt to make additional motion studies and to check up on installation, perhaps 1916. The image 610-333 (neg. 99-30278) is dated Jan. 24, 1916., c. January 24, 1916

Notes: Card Number: 25
Category: assembly study
Collection: NMAH
Copy negative: 96-1721
Gilbreth image: 610-343
Information on photo: 610.243

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these braiders that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).regarding the packet:

"610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of

us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH).

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

"610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).610-

G331 [Showing arrangement of packet for assembly of braiding machine, Base Group. U-106] Typical assembly packet. This method was evolved in 1912 by means of motion study films and has been in successful operation every since permitting the workers to do over three times as much work in a day and with less fatigue. Studies of an assembly packet for arranging the parts of a braider in an obvious sequence, as a result of this investigation a man enabled to assemble 66 braiders where before he assembled 18, with no added fatigue. (courtesy of Dave Ferguson, via GPP),

Location of subject: New England Butt Company, Providence, RI

Subject names: Frank Bunker Gilbreth and ?

318949.1027 Frank Gilbreth and son in sailor suit taken outside (Martha's Vineyard)., undated

Notes: Card Number: 24
Category: Gilbreth Family
Copy negative: 96-1722

318949.1028 Male standing between two mirrors in front of gridded background holding stopwatch and looking at motion picture camera being run by Frank Gilbreth. Photograph is taken in what appears to be a greenhouse. Another house is visible outside., undated

Notes: Card Number: 34
Category: misc.views
Copy negative: 96-1723
Information on photo: 220.048

318949.1029 Frank Gilbreth and another male, both in military uniforms, in an office. On the desk is a motion clock, telephone, dictaphone, books, papers, and photos. On wall is a clock and a map. (plate is printed backwards), undated

Notes: Card Number: 32
Category: business and apparatus of motion study
Copy negative: 96-1124
Information on photo: 17000.44 (?)

318949.1030, Large group of males standing in factory (New England Butt ?) Motion picture camera visible on left packet assembly board on right., undated

Notes: Card Number: 33
Category: assembly study
Copy negative: 96-1725

318949.1031 Frank Gilbreth and another male in suit seated at a gridded desk. Desk has in out basket, Andre pencil and pen holder, and stereo viewer atop it. Wall behind has numerous lists pinned to it. Stenciled plate rail is slightly visible on wall.(plate is printed backgrounds), undated

Notes: Card Number: 37

Category: business and apparatus of motion study

Copy negative: 96-1726

318949.1032 Frank Gilbreth hunched over a gridded table assembling or arranging something., undated

Notes: Card Number: 30

Category: Frank B. Gilbreth

Copy negative: 96-1727

318949.1033 Frank Gilbreth and two additional males in suits in an office with multipaned glass partition wall. Frank looks out window as second seated individual looks through table mounted stereo viewer., undated

Notes: Card Number: 37

Category: business and apparatus of motion study

Copy negative: 96-1728

318949.1034 Two males wearing suits seated in an office with gridded desk and multipaned glass partition wall (one seated individual is Frank Gilbreth) third male in suit stands. Some type of chart pinned to wall in background., undated

Notes: Card Number: 28

Category: business and apparatus of motion study

Copy negative: 96-1729

318949.1035 Five uniformed men sit and stand in an interior office environment; from when Frank Gilbreth was in the military., undated

Notes: Category: military study

Copy negative: 93-3245

Gilbreth image: 17000.47

318949.1036 Male figure in uniform standing in front of a gridded background. Large windows and what appears to be industrial equipment are visible on the left., undated

Notes: Category: misc.views

Copy negative: 99-30133

Box 7

318949.1037 Four seated males and one standing male all wearing military uniform taken in an office. In background is a desk and a map of the United States. Also visible is a ghosted image of Frank Gilbreth

318949.1038 Two men standing in military uniform. One man holding sign "The Tug."

Notes: Copy negative: 96-3248

Box 7

318949.1039 Two men standing in military uniform. One man holding sign "The Tug."

Notes: Copy negative 96-3244

Box 7	318949.1040 Two men standing in military uniform examining a rifle on a gridded table. Notes: Copy negative: 96-3243
Box 7	318949.1041 Male standing in military uniform in a hallway with rifle. Notes: Copy negative: 96-3242
Box 7	318949.1042 Three men standing in military uniforms Notes: Copy negative: 96-3241
Box 7	318949.1043 [Military ship?] Notes: Copy negative: 96-3240

318949.1044 to 318949.1157

318949.1044 Several male figures disembarking a ship. Other male figures are visible in the background looking over the sides of the ship., undated

Notes: Category: misc.views
Copy negative: 99-30134

318949.1045 Uniformed male figures with guns lined up on the deck of a ship. Trunks and coils of rope are visible in the upper right corner of the image., undated

Notes: Category: misc.views
Copy negative: 99-30135

318949.1046 Twenty male figures in uniforms formally posed in what appears to be a large room of a ship., undated

Notes: Category: misc.views
Copy negative: 99-30136

318949.1047 A view of a large ship on the water., undated

Notes: Category: misc.views
Copy negative: 99-30137

318949.1048 A view of a large ship on the water. The edge of the ship the photograph was taken from is visible on the left side of the image., undated

Notes: Category: misc.views
Copy negative: 99-30138

318949.1049 A view of the deck of a ship showing lifeboats. A uniformed male figure is visible at the top of the image waving two small flags. A second uniformed male figure is visible at the bottom right of the image peering out to see with a telescope or binoculars., undated

Notes: Category: misc.views
Copy negative: 99-30139

318949.1050, A view of the deck of a ship showing lifeboats. Two uniformed male figures are visible at the top of the image adjusting the rigging., undated

Notes: Category: misc.views
Copy negative: 99-30140

318949.1051 A portrait of a smiling, uniformed man on the deck of a ship. He is holding what appears to be a telescope in his hand. Lifeboats are visible in the background, undated

Notes: Category: misc.views
Copy negative: 99-30141

318949.1052 A portrait of a uniformed, smiling man on the deck of a ship. Lifeboats are visible in the background., undated

Notes: Category: misc.views
Copy negative: 99-30142

318949.1053 A view from above of several uniformed men wearing lifejackets in a small boat. A ladder leading from the side of the ship to the small boat is visible in the foreground., undated

Notes: Category: misc.views
Copy negative: 99-30143

318949.1054 A seated, uniformed male figure holding his hat and a sword. A second male figure in a suit and tie is visible in the background leaning on a table., 16-Nov-14

Notes: Category: misc.views
Copy negative: 99-30144
Gilbreth image: T 111
Information on photo: 16.XI.14 T111

318949.1055 Uniformed male figures with guns marching alongside a large brick building. Several male and female figures are watching the parade from one of the windows of the building., undated

Notes: Category: misc.views
Copy negative: 99-30145

318949.1056 A view of a sports feild. Several male figures are visible playing the game while a large crowd in stadium-style seating watches. Buildings and trees are visible in the background., undated

Notes: Category: misc.views
Copy negative: 88-30146

318949.1057 A view from above of a city street at night. A serachlight beams from a building on the left. Also on the left, a brightly lit sign reads: 'Velvet Kind, Cream of All Ice Creams.', undated

Notes: Category: scenic view
Copy negative: 99-30147

318949.1058 A view of a large feild on which a large crowd of people stands watching a tied-down blimp hover above them. The name of the blimp is 'Charlotte.' A male figure in a uniform is visible in the foreground, undated

Notes: Category: _____

Copy negative: 99-30148

318949.1059 A view of waves crashing on a beach., undated

Notes: Category: scenic view

Copy negative: 99-30149

Gilbreth image: 1766??

Information on photo: 1766??

318949.1060, A view of a blimp hovering above a field. Several figures watch from the field., undated

Notes: Category: misc.views

Copy negative: 99-30150

318949.1061 A view of what appear to be train tracks with electrical wires and apparatus above them., undated

Notes: Category: misc.views

Copy negative: 99-30151

318949.1062 Bi-plane (Wright flyer) in a building with large industrial windows on the left and pillars on the right. A small sign reading '??LIBERATED TANKS, 10' DIA.' is visible in the foreground. A handwritten note in blue ink on the glass reads 'Wright's very first areoplane.', undated

Notes: Category: misc.views

Copy negative: 99-30152

Gilbreth image: MIT?5

Information in photo: ??LIBERATED TANKS, 10" DIA.

Information on photo: MIT?5 "Wright's very first areoplane"

Original caption: Wright's very first aeroplane

318949.1063 Close-up shot of a bi-plane (Wright flyer) engine. Large windows are visible in the background. A handwritten note in blue ink on the glass reads 'Wright's very first areoplane.', undated

Notes: Category: misc.views

Copy negative: 99-30153

Gilbreth image: MIT20

Information on photo: MIT20 "Wright's very first areoplane"

Original caption: Wright's very first areoplane

318949.1064 Shoreline with water on the left and trees in the distance. A handwritten note in blue ink on the glass reads 'Ostrich tree, 17 mile drive, Monterey', undated

Notes: Category: scenic view

Copy negative: 99-30154

Information on photo: "Ostrich Tree, 17 mile drive, Monterey"

Original caption: Ostrich Tree, 17 mile drive, Monterey

Location of subject: Monterey

318949.1065 Two polar bears in a cage. The polar bear in the foreground is reaching through the poles of the cage., undated

Notes: Category: misc.views

Copy negative: 99-30155

318949.1066 Interior of a large factory room (possibly N.E. Butt Co.) crowded with machinery. A male figure in a bowler hat stands in the center of the room, adjusting, operating, or perhaps simply observing one of the machines. The cropped tops of white numbers are visible on the bottom of the right image., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30156

Gilbreth image: ???-????

Information on photo: Illegible cropped white numbers

318949.1067 Interior of a factory room crowded with machinery. A motion clock is visible sitting on the left in the lower left-hand corner of the image. Two symbols and a number (>>6) are written on the glass between the images in red ink., 7-May-21

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30157

Gilbreth image: >>6

Information in photo: 5/7/2021

Information on photo: >>6

318949.1068 Factories - interiors and exteriors; machinery, undated

Notes: Category: factories - interiors and exteriors; machinery

Copy negative: 99-30158

Gilbreth image: 41

318949.1069 Interior of what appears to be the top floor or attic of a factory. A male figure stands at the center of the image. A gridded partition is visible leaning on the wall in the background., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30159

Gilbreth image: 610-G246

Information on photo: 610-G246

318949.1070 Interior of a factory room crowded with machinery. , undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30160

Gilbreth image: 200.054

Information on photo: 200.054

318949.1071 Interior of a factory room. What might be a figure is visible leaning on a table in the center of the image. Shelving is visible on the right., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30161

318949.1072 Interior of a factory room crowded with machinery. A male figure wearing a cap is visible at the right of the image leaning on a bench and staring out the window., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30162

318949.1073 Interior of a large factory room. A group of male figures are visible at the far end of the room. A single male figure is visible at the left of the image. What appears to be a flag or a banner is hanging from the ceiling., 24-Feb-19

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30163

Gilbreth image: 460

Information on photo: 460 2-24-19

318949.1074 Image identical to 318949.1066. Interior of a large factory room (possibly N.E. Butt Co.) crowded with machinery. A male figure in a bowler hat stands in the center of the room, adjusting, operating, or perhaps simply observing one of the machines. The cropped tops of white numbers are visible on the bottom of the right image., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30164

Gilbreth image: ???-????

Information on photo: Illegible cropped white numbers

318949.1075 Close-up view of a machine on a bench. Large factory windows are visible in the background., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30165

318949.1076 Interior of a factory room extremely crowded with machinery. A figure (female?) is visible in the foreground., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30166

318949.1077 Interior of a factory room. A small plaque which reads '5.XII 237' leans against a pillar in the center of the room. Large windows are visible in the background., December 5, 1914 (see 318949.1079)

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30167

Gilbreth image: T424

Information in photo: 5.XII237

Information on photo: T424

318949.1078 Image identical to 318949.1073. Interior of a large factory room. A group of male figures are visible at the far end of the room. A single male

figure is visible at the left of the image. What appears to be a flag or a banner is hanging from the ceiling., 24-Feb-19

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30168

Gilbreth image: 460

Information on photo: 460 2-24-19

318949.1079 Interior view of two adjoining offices. A plaque propped up on one of the desks reads: 'Gilbreth Day Mon. 1914, 9 XII, 267.' The word 'Stossen' is written on the door between offices. Handwritten in black ink on the glass between the images is '9.XII.14' and 'T267.', Monday, December 9, 1914

Notes: Category: misc.views

Copy negative: 99-30169

Gilbreth image: T267

Information in photo: Gilbreth Day Mon. 1914, 9 XII, 267Stossen

Information on photo: 9.XII.14T267

318949.1080 Interior of a factory room, undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30170

Gilbreth image: 200-049

Information on photo: 200-049

318949.1081 Interior of a factory room similar to that portrayed in 318949.1068. Chalkboards with numbers scribbled on them are visible in the left side of the image. A male figure is also visible in the left side of the image., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99.30171

318949.1082 Image identical to 318949.1066 and 318949.1074. Interior of a large factory room (possibly N.E. Butt Co.) crowded with machinery. A male figure in a bowler hat stands in the center of the room, adjusting, operating, or perhaps simply observing one of the machines. The cropped tops of white numbers are visible on the bottom of the right image. 'Jan '14' and '610 G 237' are written in black ink on the glass between the images., January, 1914

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30172

Gilbreth image: 610 G 237

Information on photo: 610 G 237

318949.1083 Interior of a long factory room lined with identical machines. A table with folded cloth on top of it is visible in the foreground., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30173

318949.1084 Interior of a factory room filled with long tables. The tables are covered with paper or cloth. Several male figures are visible in the picture. The male figure closest to the foreground is standing at a table doing something with objects on its surface. A seated male figure leans on a table in the back of the room. In the far background, two male figures appear to be moving a large object. Restaurant-style chairs are visible stacked up in the back of the room and the side wall is lined with sinks., 7-Feb-19

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30174

Gilbreth image: 51

Information on photo: 51 2-7-19

318949.1085 A small factory room filled with work tables. Young male and possibly a few female figures are working with carpentry tools on the tables. A few of the male figures are wearing striped aprons. A large and a small motion clock are visible on top of one of the work tables. The cut-off tops of four white numbers are visible at the bottom of the image., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30175

Gilbreth image: ????

Information on photo: The cut-off tops of four white numbers

318949.1086 A close-up view of a large, multi-sectioned storage cupboard. The number 385 and several cut-off white numbers or letters are visible at the bottom of the image., undated

Notes: Category: storage old and new

Copy negative: 99-30176

Gilbreth image: 385 ? ? ? ?

Information on photo: 385 and cut-off white numbers or letters

318949.1087 Interior of a large factory room. Packet boards are visible on one side of the image and storage bins are visible on the other. The storage bins have letters and numbers written in them, including the name John., undated

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30177

Information in photo: JOHN and various other letters and numbers

318949.1088 Chronocyclegraph of a figure working with a piece of machinery. The number 610 and an illegible mark are written in black ink on the glass between the images., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30178

Gilbreth image: 610 ?

Information on photo: 610 and an illegible mark

318949.1089 Interior of what appears to be the attic or top floor of a factory or warehouse. The room is crowded with wooden boxes and some machinery. Gridded panels are visible in the background. A large camera on a tripod is

visible in the left of the image. A tripod without a camera is visible in the back of the room. '610 G' is written in black ink on the glass between the images., undated

Notes: Category: misc.views
Copy negative: 99-30179
Gilbreth image: 610 G
Information on photo: 610 G

318949.1090 Chronocyclegraph of figure working with small metal objects. A motion clock is visible in the background. The boxes the figure is working upon have labels with read 'Yawman & Erre Mfg. Co. Rochester, N.Y.', undated

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30180
Gilbreth image: 17674
Information in photo: Yawman & Erre Mfg. Co. Rochester, N.Y.

318949.1091 Close-up view of a piece of machinery. A chalkboard propped up on the structure of the machine displays the date and number., 28-Mar-19

Notes: Copy negative: 99-30181
Gilbreth image: 1201
Information in photo: 3-28-19 1201
Information on photo: 1201 3-28-19

318949.1092 Close-up view of machinery and tools on a work bench., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30182

318949.1093 Interior of a factory room crowded with machinery. Two male figures stand in the midst of the machines. One male figure, dressed in a white shirt and suspenders, appears to be operating one of the machines. The second male figure, in a vest and bowtie, appears to be observing the first male figure. A large camera on a wooden tripod is visible in the foreground., undated

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30183

318949.1094 Close-up view of a piece of machinery. Rough brick walls are visible in the background., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30184
Gilbreth image: 230 109
Information on photo: 230 109

318949.1095 Close-up view of a piece of machinery., undated

Notes: Category: misc.views
Copy negative: 99-30185
Gilbreth image: T.40

Information on photo: T.40

318949.1096 Close-up view of some type of industrial apparatus. Rough brick walls are visible in the background and a pile of dirt makes up the foreground., undated

Notes: Category: misc.views
Copy negative: 99-30186
Gilbreth image: 230.132
Information on photo: 230.132

318949.1097 View of a large wooden bin against a brick wall. A large pipe attaches to the top of the bin and continues upwards out of the picture. A small plaque propped up on the bin reads 'Gilbreth Day Mon 1915' on its border and '343 15 T' in the center., Monday 1915

Notes: Category: misc.views
Copy negative: 99-30187
Gilbreth image: 343 15 T
Information in photo: Gilbreth Day Mon 1915313 15 T

318949.1098 View of a large, round piece of industrial equipment. A plaque leaning against the machine reads 'Gilbreth Day Mon 1915, 247 7.XII.14.', 7-Dec-14

Notes: Category: misc.views
Copy negative: 99-30188
Gilbreth image: T 247
Information in photo: Gilbreth Day Mon 1915247 7.XII.14
Information on photo: 7.XII.14T 247

318949.1099 View of a large factory room with a large piece of equipment in the foreground., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30189
Gilbreth image: 610 GGB
Information on photo: 610 GGB

Box 8

318949.1100 Unidentified machine, undated

Notes: Category: misc.views
Copy negative: 99-30190
Gilbreth image: < 70
Information in photo: Numbers scribbled in white chalk on the machines
Information in photo: < 70

318949.1101 View of a large factory room with a large piece of equipment in the foreground., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30191

Image identical to 318949.1099.

318949.1102 Interior of a factory room. Several pieces of equipment are visible hanging from the ceiling. A large pile of dirt makes up the foreground., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30192
Gilbreth image: 230 111
Information on photo: 230 111

318949.1103 Interior of a factory room filled with several large pieces of machinery. The floor of the room seems to be covered with a pile of dirt., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30193
Gilbreth image: 230 141
Information on photo: 230 141

318949.1104 View of a factory room filled with machinery., undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30194

318949.1105 Close-up view of a piece of industrial equipment., undated

Notes: Category: misc.views
Copy negative: 99-30195
Gilbreth image: 210.36
Information on photo: 210.36

318949.1106 View of a female figure sitting at a work bench cluttered with tools. Part of a name can be read on the largest piece of equipment: '??? Mfg. Co.' Two motion clocks and three blocks which read '203,' '649,' and '41' are also visible on the bench. A man wearing a bowtie is visible standing behind the table. A gridded wall makes up the background. The plate is broken and held together by two red and white stickers. '>36' is written in red ink on the glass between the images. '1700.167' is written in black ink on the lower right of the plate., undated

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30196
Gilbreth image: 203 649 27 or >36 or 1700.167
Information in photo: 203 649 27 "??? Mfg. Co."
Information on photo: >36 and 1700.167

318949.1107 Unidentified large piece of textile equipment, 1914 December 7

Notes: Category: misc.views
Copy negative: 99-30197
Gilbreth image: 247 or >56
Information in photo: Gilbreth Day Mon 1915247 7.XII.14
Information in photo: >56

318949.1108 Unidentified (factories - interiors and exteriors and machinery), undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30198
Gilbreth image: 200.362 or ><53
Information in photo: LUX
200.362 and ><53

318949.1109 View of a large piece of textile equipment. The machine sits on a gridded floor and a gridded partition is visible in the background. A large plaque propped up on the machine reads '640-48, TEMP.WET60DRY68, BAROMETER, MO.11DAY11YR.1916', 11-Nov-16

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30199
Gilbreth image: 640-48
Information in photo: 640-48TEMP>WET60DRY68BAROMETERMO.11DAY11YR.1916

318949.1110, View of a factory room with what appears to be a dumb waiter in the foreground. , undated

Notes: Category: factories - interiors & exteriors & machinery
Copy negative: 99-30200
Information in photo: "Liars Liscence" and "Had a ?????? time even if I did make an (ass) of myself" and "Japan."
Information on photo: FRANK B. GILBRETH
A desk with a clock on it is visible next to the dumb waiter. Several pieces of paper are attached to the top part of the dumb waiter, including a piece of paper which reads 'Liars Liscence,' an image of the Japanese flag, and a postcard illustrated with a picture of a donkey which reads 'Had a ?????? time even if I did make an (ass) of myself.' The name 'Frank B. Gilbreth' is written in white letters at the corner of the plate.

318949.1111 View of a crowded array of tools and equipment. A box in the left side of the image bears a lable which reads 'LAGER.', undated

Notes: Category: misc.views
Copy negative: 99-30201
Gilbreth image: 210.376
Information in photo: LAGER
Information on photo: 210.376

318949.1112 Close-up view of tools in storage compartments. A plaque at the bottom of the image reads 'Gilbreth Day Mon 1914, 15XII 297.' '15.XII.14' and 'T 297' are written in black ink on the glass between the images., 15-Dec-14

Notes: Category: storage old and new
Copy negative: 99-30202
Gilbreth image: T 297
Information in photo: Gilbreth Day Mon 191415XII 297

Information on photo: 15.XII.14T 297

318949.1113 Close-up view of storage compartments. The drawers and compartments are labeled with the letters 'SGS' and 'SGKGA.' A plaque propped up on an open drawer reads 'Gilbreth Day Mon 1915, 490.21.4.', Monday 1915

Notes: Category: storage old and new
Copy negative: 99-30203
Gilbreth image: 490.21.4
Information in photo: SGS, SGKGA Gilbreth Day Mon 1915 490.21.4

318949.1114 Close-up view of storage compartments. The small compartments are labeled with letters and numbers. The only legible label reads: JTPA-2., undated

Notes: Category: storage old and new
Copy negative: 99-30204
Information in photo: JTPA-2

318949.1115 Close-up view of storage compartments. Paintbrushes and saws are visible in the compartments., undated

Notes: Category: storage old and new
Copy negative: 99-30205

318949.1116 A better exposure of 318949.1114. Close-up view of storage compartments. The compartments are labeled. Labels on two of the smaller compartments on the left read 'JPTA-1 and JPTA-2.' The label on the larger compartment on the right reads 'MCMS-?', undated

Notes: Category: storage old and new
Copy negative: 99-30206
Information in photo: JPTA-1, JPTA-2 MCMS-?

318949.1117 A view of storage compartments. The compartments are labeled. The number 50 is written in white in the upper right corner of the plate. '1.X.14' and 'T26' are written in black ink on the glass between the images., 1-Oct-14

Notes: Category: storage old and new
Copy negative: 99-30207
Gilbreth image: T26
Information on photo: 501.X.14T26

318949.1118 A view of small storage compartments., undated

Notes: Category: storage old and new
Copy negative: 99-30208

318949.1119 A view of storage compartments. The drawers on the left of the image are labeled with letters and numbers reading 'DRRS-23/32'-47/64" etc., undated

Notes: Category: storage old and new
Copy negative: 99-30209

Information in photo: DRRS-23/32 "-47/64" etc.

318949.1120, A view of storage compartments., undated

Notes: Category: storage old and new

Copy negative: 99-30210

318949.1121 A close-up view of storage compartments. '1.X.14' and 'T30' are written in black ink on the glass between the images. 'Frank B. Gilbreth' and 'P51' are written upsidedown in white letters on the top edge of the plate., 1-Oct-14

Notes: Category: storage old and new

Copy negative: 99-30211

Information on photo: 1.X.14T20FRANK B. GILBRETHP51

318949.1122 A view of a large factory room with what appears to be fenced-in storage compartments. A sign attached to the fence reads 'Lunch Tickets.' A male figure stands in front of the fence, possibly looking out the window. Two crossed United States flags are visible in the background., 6-Mar-18

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-20212

Gilbreth image: 739

Information in photo: Lunch Tickets

Information on photo: 6/18/7393

318949.1123 Image identical to 318949.1122. A view of a large factory room with what appears to be fenced-in storage compartments. A sign attached to the fence reads 'Lunch Tickets.' A male figure stands in front of the fence, possibly looking out the window. Two crossed United States flags are visible in the background., 6-Mar-18

Notes: Category: factories - interiors & exteriors & machinery

Copy negative: 99-30213

Gilbreth image: 739

Information in photo: Lunch Tickets

Information on photo: 6/18/7393

318949.1124 A view of storage compartments containing what appear to be cigars. The labels on the boxes read 'A. W. Faber . . . Gelbstifte.' A plaque in the foreground reads 'Gilbreth Day Mon 1914, 17 XII 335', 17-Dec-14

Notes: Category: storage old and new

Copy negative: 99-30214

Gilbreth image: 335

Information in photo: "A.W. Faber . . . Gelbstifte" Gilbreth Day Mon 1914, 17 XII 335

318949.1125 A close up view of storage compartments containing wrapped packages of screws. The numbers and letters '14TAGG' are visible at the lower right of the plate. '20.XI.14' and 'T196' are written in black ink on the glass between the images., 20-Nov-14

Notes: Category: storage old and new

Copy negative: 99-30215
Gilbreth image: T196
Information on photo: 14TAGG20.XI.14 T196

318949.1126 Close-up view of storage compartments containing paper tags. Boxes in the lower right of the image bear labels which read '1 Mille Etiquettes Universal.' A plaque in the foreground reads 'Gilbreth Day Mon 1914, 16 XII 332.' '16.XII.14' and 'T332' are written in black ink on the glass between the images., 16-Dec-14

Notes: Category: storage old and new
Copy negative: 99-30216
Gilbreth image: T332
Information in photo: 1 Mille Etiquettes Universal Gilbreth Day Mon 1914 16 XII 332
Information on photo: 16

318949.1127 Close-up view of storage compartments., undated

Notes: Category: storage old and new
Copy negative: 99-30217

318949.1128 View of storage compartments filled with wrapped packages. A plaque at the bottom of the image reads 'Gilbreth Day Mon 1914, 9 XII 271.' '9.XII.14' and 'T271' are written in black ink on the glass between the images., 9-Dec-14

Notes: Category: storage old and new
Copy negative: 99-30218
Gilbreth image: T271
Information in photo: Gilbreth Day Mon 1914 9 XII 271
Information on photo: 9.XII.14 T271

318949.1129 View of small storage compartments. A vase of flowers sits on a chest of drawers in the foreground, and a picture of some sort of animal (perhaps a sheep or a dog) is pinned to the wall above the chest of drawers., undated

Notes: Category: storage old and new
Copy negative: 99-20219

318949.1130, A view of storage compartments. A ink pen, ink well, and blotter are visible on the top of a desk in the foreground., undated

Notes: Category: storage old and new
Copy negative: 99-30220

318949.1131 A view of a series of storage compartments arranged by month and day. January through June are visible in this image., undated

Notes: Category: storage old and new
Copy negative: 99-30221
Gilbreth image: 210.15
Information on photo: 210.15

318949.1132 Close-up view of storage compartments., undated
Notes: Category: storage old and new
Copy negative: 99-30222

318949.1133 Close-up view of storage compartments., undated
Notes: Copy negative: 99-30223

318949.1134 wooden storage bins with tagged objects stored inside., Nov. 20, 1914
Notes: Category: storage old and new
Copy negative: 99-30224
Gilbreth image: T194

318949.1135 Desk/table with two metal mesh 'in-boxes' and a pencil stand; sink is to the right., undated
Notes: Category: office study
Copy negative: 99-30225
Gilbreth image: T52

318949.1136 Gridded desk with assorted office elements on it, including a telephone; clipboards with documents overhead., undated
Notes: Category: office study
Copy negative: 99-30226

318949.1137 Office with desks and a Gilbreth blackboard placard., Oct. 19, 1921
Notes: Category: office study
Copy negative: 99-30227
Gilbreth image: 210.466

319848.1138 Gridded desks in office environment. Nearly identical to neg. no. 99-30232., undated
Notes: Category: office study
Copy negative: 99-30228

318949.1139 Woman office worker sitting at her desk in large office with many (empty) desks., undated
Notes: Category: office study
Copy negative: 99-30229
Gilbreth image: 210.467

318949.1140, Cluttered office desk area--pre-Gilbreth., undated
Notes: Category: office study
Copy negative: 99-30230

318949.1141 Desk with typewriter, dictaphone, and telephone., undated
Notes: Category: office study
Copy negative: 99-30231

Gilbreth image: 210.411?

318949.1142 Gridded desks in office environment. Nearly identical to neg. no. 99-30228., undated

Notes: Category: office study

Copy negative: 99-30232

318949.1143 Office interior, Dec. 12, 1914

Notes: Category: office study

Copy negative: 99-30233

Gilbreth image: T261

318949.1144 Wide open office space interior; no images., undated

Notes: Category: office study

Copy negative: 99-30234

Gilbreth image: 210.485

318949.1145 Cluttered office environment. Same place as 99-30236., Dec. 9, 1914

Notes: Category: office study

Copy negative: 99-30235

Gilbreth image: T266

318949.1146 Office environment. Same place as 99-30235. Same place and image as 99-30238., Dec. 9, 1914

Notes: Category: office study

Copy negative: 99-30236

Gilbreth image: T263

318949.1147 Tidy office desk environment., undated

Notes: Category: office study

Copy negative: 99-30237

Gilbreth image: 210.405

318949.1148 Office environment. Same place and image as 99-30236., undated

Notes: Category: office study

Copy negative: 99-30238

318949.1149 Very faded image of FBG at desk in front of tall windows., undated

Notes: Category: Frank B. Gilbreth

Copy negative: 99-30239

318949.1150, The pencil holder on a gridded desk; you can see a man's hand writing 'Use..' on a piece of paper. See also 99-30241., undated

Notes: Category: office study

Copy negative: 99-30240

Gilbreth image: 17000-60

318949.1151 Pencil holder with paper clips on gridded desk; same photo set as the image neg. no. 99-30240., undated

Notes: Category: office study
Copy negative: 99-30241
Gilbreth image: 17000.64

318949.1152 The gridded desk, with pencil holder and office chair., undated

Notes: Category: office study
Copy negative: 99-30242
Gilbreth image: 210.156

318949.1153 Woman office worker at her desk, in a smallish office., Nov. 20, 1914

Notes: Category: office study
Copy negative: 99-30243
Gilbreth image: T192

318949.1154 Busy office environment. Tall columns with white on top; woman at desk; man with small glasses and receding hairline looks at camera. Same as 99-30247., Jan. 28, 1919

Notes: Category: office study
Copy negative: 99-30244
Gilbreth image: 14

318949.1155 Many office workers are seated in rows in front of tall floor to ceiling windows; a series of lamps are suspended from the ceiling. See also 99-30246. (These suspended lights...NE Butt?), Jan. 18, 1915

Notes: Category: office study
Copy negative: 99-30245
Gilbreth image: T358

318949.1156 Many office workers are seated in rows in front of tall floor to ceiling windows; a series of lamps are suspended from the ceiling. Almost identical to 99-30245, which is dated January 18, 1915. (These lights,,,NE Butt?), Jan. 18, 1915?

Notes: Category: office study
Copy negative: 99-30246
Gilbreth image: T364

318949.1157 Busy office environment. Tall columns with white on top; woman at desk; man with small glasses and receding hairline looks at camera. Same as 99-30244., undated

Notes: Copy negative: 99-30247
Gilbreth image: 14

318949.1158 to 318949.1238, undated

318949.1158 desk inside a small room all painted white; over the desk is a large white peg-board with glass cabinet doors of two panes each., undated

Notes: Category: office study
Copy negative: 99-30248
Gilbreth image: 210-335

318949.1159 Pine storage bins of at least 12 bays each; inside each are objects; each bay has a tag., Oct. 1914?

Notes: Category: storage old and new
Copy negative: 99-30249
Gilbreth image: T466

318949.1160, Stores rack. Warehouse-type space with tall storage bins on each side; in the middle is a Gilbreth placard which says: 'Stores Racks 1-27-21 E.F.' and something else; also a Gilbreth clock., 27-Jan-21

Notes: Category: storage old and new
Copy negative: 99-30250
Gilbreth image: 210.134

318949.1161 Pine storage bins of multiple bays, with items stored within and tags affixed to the outside of the bins., undated

Notes: Category: storage old and new
Copy negative: 99-30251

318949.1161 Very chaotic looking chronocyclegraph of handkerchief folding. No Gilbreth number. Similar to the series depicted in 618-G70 and 618-G69, but many more cycles. This looks like the worker has not been 'standardized,' not even for an hour., Fall 1913

Notes: Category: handkerchief folding study
Collection: NMAH
Job name: Herrmann-Aukam Co.
Job number: 618

Related captions: "Shows an operator folding square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NF 01/0019 v.1).

618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown.

618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1. 618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times, or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

318949.1162 Storage bins holding metal rebar of some sort; no tags visible., undated

Notes: Category: storage old and new
Copy negative: 99-30252

318949.1163 wooden storage shelves with open wooden racks; at the end is a series of tags. Darkish interior; windows at end; piping visible., undated

Notes: Category: storage old and new
Copy negative: 99-30253

318949.1164 Storage of perhaps the 'old' variety: tall wooden storage bins of at least seven bays high and 4 wide; each bay has a number in white, which goes as high as 39. Metal parts, looks like, including some long tubing of some sort, some of which is on the floor. It looks a bit sloppy, and there are not tags visible., 3-Mar-19

Notes: Category: storage old and new
Copy negative: 99-30254
Gilbreth image: 614

318949.1165 Pine storage bins with wire and other material in the bins; each bay has a tag. Bins look new. A post-Gilbreth storage site., undated

Notes: Category: storage old and new
Copy negative: 99-30255

318949.1166 Orderly pine storage bins with tags on each bay. Storage bin 4 bays high and 9 wide. Small white signs are at the top of some of the bins saying 'MSEM S.' There is a Gilbreth Day blackboards which says 9XII 262' (Dec. 9 1914, photo 252)., Dec. 19, 1914

Notes: Category: storage old and new
Copy negative: 99-30256

Gilbreth image: T262

318949.1167 Dark interior; storage bins of 5 or so bays high; older variety; each bay has a letter number combo such as A11; each bay filled with sheets of some material, and every few leaves there is a piece of paper stuck in it, so there are lots of bits of paper sticking out (can't read them); there are tags on each bay., undated

Notes: Category: storage old and new
Copy negative: 99-30257

318949.1168 New pine storage bins with tags displayed. Large spools of cable stored in the bays. These are high and thin bays, of about three high and 8 across. There is a Gilbreth Day blackboard with date and number., Dec. 18, 1914

Notes: Category: storage old and new
Copy negative: 99-30258
Gilbreth image: 344 (T344)

318949.1169 Newly-reorganized pine storage bins, with tags. Image shows two bins: one is vertically oriented of two bays across and 4 high (or more); the other is three high and 4 across. As in another image, there is a small white sign with black lettering that says 'MSPBC G'. Inside of one of the bins are a series of book-like things that say 'Leitz' on the spine. The ceiling is sloped, as if this is an attic space. Another image, elsewhere, shows clearly German signs--this must be in Germany--the beginning of the Auer job?, Dec. 9, 1914

Notes: Category: storage old and new
Copy negative: 99-30259
Gilbreth image: 270 (T270)
Original caption: s

318949.1170, Newly organized pine storage bins with numerous bays, each of which has a tag in front of it. Inside the bays: hard to tell. Smaller objects., 20-Nov-14

Notes: Category: storage old and new
Copy negative: 99-30260
Gilbreth image: T149

318949.1171 Newly organized pine storage bins with tags in front of the bays. Sloped ceiling, again. Gilbreth Day blackboard. In bays: brown-paper wrapped supplies, which look like paper. Another image, elsewhere, shows clearly German signs--this must be in Germany--the beginning of the Auer job?, Dec. 16, 1914

Notes: Category: storage old and new
Copy negative: 99-30261
Gilbreth image: 334 (T334)

318949.1172 Tall pine storage bins, reorganized, with tags in front of the bays. In the bays: wire or cable of some sort. Dark interior., undated

Notes: Category: storage old and new

Copy negative: 99-30262

318949.1173 Cluttered storage space with tall high windows in the back. Storage bays have stuff in them--hard to tell. Small paper packages. In the image is a number, 346, which conflicts with the neg. number penned on. Same suspended lamps that I saw over the office workers next to tall windows., undated

Notes: Category: storage old and new
Copy negative: 99-30263
Gilbreth image: 356 (or 346)

318949.1174 very neatly organized pine storage units with tags in front of each bay. In most of the bays are small porcelain conductor things--fuses??, undated

Notes: Category: storage old and new
Copy negative: 99-30264

318949.1175 Older darker storage bins of 6-7 bays high. Don't see any tags., 3/6/2019

Notes: Category: storage old and new
Copy negative: 99-30265
Gilbreth image: 740

318949.1176 Densley packed and neatly organized wooden storage bins. The bays are relatively small, and each one has not a paper tag hanging in front, but a small black ID label on the top part of each bay which has been lettered in white. For example: S-T200' etc. The contents of each bay look different; they look like small machine parts., undated

Notes: Category: storage old and new
Copy negative: 99-30266
Job name: New England Butt Company?
Job number: 610

318949.1177 Tall wooden storage units with relatively big bays, on which are marked in black stencilled letters 'BBB', etc. No tags in evidence. This is the same interior space which is noteworthy for its suspended lamps, high windows, and columns with white on the top half and a color on the bottom half., undated

Notes: Category: storage old and new
Copy negative: 99-30267
Job name: New England Butt Company?
Job number: 610

318949.1178 Skinny bays of wire coils, newly built, with tags in front of each bay. Gilbreth Day blackboard placard., Dec. 18, 1914

Notes: Category: storage old and new
Copy negative: 99-30268
Gilbreth image: 344 (T344)

318949.1179 Storage bins of wire or cable coils, with tags in front., Dec. 18, 1914

Notes: Category: storage old and new
Copy negative: 99-30269
Gilbreth image: 340

Box 8

318949.1180 Storage bins of wire or cable coils, with tags in front.

318949.1181 New wooden storage bins with big sheets of paper or fiber board (several feet high) also a roll of hurricane fencing. Tags hanging in front. Looks like possibly the same interior as the work done on Dec. 18, 1914 Gilbreth image 740. This image is the same as 99-30273., undated

Notes: Category: storage old and new
Copy negative: 99-30271

318949.1182 Brand spanking new pine storage bins with half-fronts. Gilbreth Day placard. No material in the bins yet., 27-Mar-15

Notes: Category: storage old and new
Copy negative: 99-30272
Gilbreth image: 444

318949.1183 New wooden storage bins with big sheets of paper or fiber board (several feet high) also a roll of hurricane fencing. Tags hanging in front. Looks like possibly the same interior as the work done on Dec. 18, 1914 Gilbreth image 740. This image is the same as 99-30271., undated

Notes: Category: storage old and new
Copy negative: 99-30273

318949.1184 Wooden storage bins with tags in front of each bays. Same interior as the images taken Dec. 18, 1914, photo no. 344 (see neg. no. 99-30268)., Dec. 18, 1914?

Notes: Category: storage old and new
Copy negative: 99-30274
Gilbreth image: circa 344

318949.1184 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study
Gilbreth image: 18251

318949.1185 Neat bins of brown packages with inventory tag; sloped ceiling; a big x cross bar across one bay. Same space as in neg. nos. 99-30259 and 99-30261. Another image, elsewhere, shows clearly German signs--this must be in Germany--the beginning of the Auer job?, 16-Dec-14

Notes: Category: storage old and new

Copy negative: 99-30275

Gilbreth image: 334

318949.1186 Blurry image of two hands taking metal objects that almost look like show horns off of a wooden storage rack. What this is a close-up of part of the 'Gilbreth Packet' used to hold machine pieces in order of assembly; the image documents the worker's hands pulling off the pieces in order of assembly. This is the base group assembly B1-17 of a braider. See also neg. no 99-30277 for a view of the whole set-up., 29-Jan-16

Notes:

Category: assembly study

Collection: NMAH

Copy negative: 99-30276

Gilbreth image: B4

Job name: New England Butt Company

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of leastwaste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).regarding the packet:

"610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler." (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)).

"1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the

hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH).

1282 [Shows assembly frame for causing habits of motion. L-189 Braider parts on packet.] shows arrangement of parts in an obvious sequence for assembling the base group of a braiding machine. These cross-sectioned boards or packets were developed as a result of our micro-motion study measurements, and we found that the time and cost of having a boy arrange these parts in the same standard places on the cross-sectioned packet was very small compared with the gain to the assembler in having the parts exactly where needed for the shortest and quickest reaching and with no mental hesitation as to which part was to be picked up. This method is extremely profitable where new worker are used for the reason that they do not have to remember the sequence of pieces at all. A boy would arrange parts that will fill a packet in less than a minute. The laboratory methods here shown resulted in increasing the output of the worker nearly three and one half times. (Dave Ferguson, via GPP).

"610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who

starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

610-G331 [Showing arrangement of packet for assembly of braiding machine, Base Group. U-106] Typical assembly packet. This method was evolved in 1912 by means of motion study films and has been in successful operation every since permitting the workers to do over three times as much work in a day and with less fatigue. Studies of an assembly packet for arranging the parts of a braider in an obvious sequence, as a result of this investigation a man enabled to assemble 66 braiders where before he assembled 18, with no added fatigue. (courtesy of Dave Ferguson, via GPP),

Location of subject: Providence RI

318949.1187 Base group assembly of a braider machine. Placard says 'January 29, 1916, Assembly base group B1-17.' On the wall is a vertical packet; you can see an arm of the worker who is going to be assembling the braider., 29-Jan-16

Notes:

Category: assembly study

Collection: NMAH

Copy negative: 99-30277

Gilbreth image: 610-333

Job name: New England Butt Company

Job number: 610

Related captions: "1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the New England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are [not?] standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally

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Location of subject: Providence, RI

318949.1188 Gilbreth vertical packet for assembling braiding machines at the new England Butt Company. This particular set up is for the assembly of the base group, B1-17. Same as 99-30277., 29-Jan-16

Notes:

Category: assembly study

Collection: NMAH

Copy negative: 99-30278

Gilbreth image: 610-333

Job name: New England Butt Company

Job number: 610

Related captions: "610-334 This picture shows the first use of an assembly packet principle in assembling. This particular machine is the braider for making lacings, etc. In 1912 we devised this method as the result of our micromotion studies in one of the laboratories of one of our clients and this picture was taken several years afterwards. It has remained the same and workers are still producing three times as much output as they did before the studies were made and with less fatigue than formerly." (courtesy of Dave Ferguson, via GPP).general information about the series:"142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).regarding the packet:

610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The

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of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

Location of subject: Providence, RI

318949.1189 A man in a tie, best and white shirt sits at a work station with all sorts of material around him, including tubing; behind him are rows of basins filled with material. Seems perhaps a 'before' picture relating to storage. See 99-30280 for identical image., Feb. 26?, 1919

Notes: Category: assembly study

Copy negative: 99-30279

Gilbreth image: 520

Information in photo: 520

318949.1190, A man in a tie, best and white shirt sits at a work station with all sorts of material around him, including tubing; behind him are rows of basins filled with material. Seems perhaps a 'before' picture relating to storage. See 99-30279 for identical image., Feb. 26?, 1919

Notes: Category: assembly study

Copy negative: 99-30280

Gilbreth image: 520

318949.1191 Two young men in oxfords, vests, and ties look at the camera behind a counter. Behind them is a huge board used to keep track of factory orders. A calendar from Starcweather and Shipley Insurance (June 1914) is behind them. To their right is a bank of wooden file drawers with small pull-out file trays. This looks like the same white interior with high windows and suspended lamps I have seen in the storage related images. Either NE Butt or Hermann-Aukam, I imagine. The calendar I THINK says Providence, RI., June 1914?

Notes: Category: business and apparatus of motion study

Copy negative: 99-30281

Job name: New England Butt Company?

Job number: 610?

318949.1192 Older storage units, wooden, with black ID tags and white lettering on top of each bay. Little hooks there as well as if to hold cards or tags, but nothing on them. In the bays are wooden objects which look like die molds for casting machine parts. New England Butt?, Dec. 1 1914

Notes: Category: storage old and new

Copy negative: 99.30282

Gilbreth image: T27

Job name: New England Butt Company

Job number: 610

318949.1193 Older storage units, wooden, with black ID tags and white lettering on top of each bay. In the bays are heavy-duty drill bits of a variety of sizes. New England Butt? See neg. no. 99-30283., Dec. 1914

Notes: Category: storage old and new

Copy negative: 99-30283

Job name: New England Butt Company

Job number: 610

318949.1194 Close-up of a re-organized storage bin. Placard which says 'Gilbreth Day Mon 1914 18 XII 341' Over the small wooden bays are manilla paper (inventory) tags suspended. Inside the bays are pipes of some sort (looks like NE Butt stuff). The tags say: in block letters on the left side: 'MH' (materials handling?) on the right are the letters 'EA1K.', Dec. 18, 1914

Notes: Category: storage old and new

Copy negative: 99-30284

Gilbreth image: T341

Job name: New England Butt?

Job number: 610?

318949.1195 The end of a pine, newly organized storage bin, which has a little placard sticking out with the letters 'EPS-ESE' suspended from it, indicating the parts available on that row of storage bins. Can't see anything in the bins. NE Butt?, Dec. 18, 1914

Notes: Category: storage old and new

Copy negative: 99-30285

Gilbreth image: T339

318949.1196 Wooden storage bin which holds cable and wire in large rolls; inventory tags hang in front of each bay. NE Butt?, Dec. 18, 1914

Notes: Category: storage old and new

Copy negative: 99-30286

Gilbreth image: T340

318949.1197 Tall storage unit has lots of small compartments. Looks organized. No tags hanging in front., 2-Mar-15

Notes: Category: storage old and new

Copy negative: 99-30287

Gilbreth image: T403

318949.1198 Ladder is propped in front of storage bins which hold lots of pipe in lengths; tags hang in front of the numerous bays., Feb. 8, 1915

Notes: Category: storage old and new

Copy negative: 99-30288

Gilbreth image: T380

318949.1199 Older wooden storage units without tags in front of the bays. The high windows and suspended lamps that I think might be NE Butt., undated

Notes: Category: storage old and new

Copy negative: 99-30289

Box 8

318949.1200 Newly organized storage bins with white inventory tags hanging in front of bays, 1914

318949.1201 Newly organized storage bins with white inventory tags hanging in front of bays; the tall windows, columns, and suspended lamps that I suspect might be NE Butt., Feb. 8 1914 or 1915

Notes: Category: storage old and new

Copy negative: 99-30291

Gilbreth image: 381

318949.1202 Storage bins, neatly organized, holding metal parts, mostly pipes and other lengths of metal dowels, with tags. New England Butt, I am pretty sure., undated

Notes: Category: storage old and new

Copy negative: 99-30292

318949.1203 newly organized storage bins that have the book-looking things in them that say 'Leitz' on the binders; this is the attic storage space with the sloped roof; inventory tags hang in front of the bays. Another image, elsewhere, shows clearly German signs--this must be in Germany--the beginning of the Auer job?, Dec. 9, 1914

Notes: Category: storage old and new

Copy negative: 99-30293

Gilbreth image: 270

318949.1204 Newly organized wooden storage bins, tall, with light coming in from tall windows in the back; on the side of the cabinet is a sign which says 'MH EPS-MH ESE.', undated

Notes: Category: storage old and new

Copy negative: 99-30294

318949.1205 Tall wooden storage units with drawers in them; no tags; this is the same interior as the other storage images which I am pretty sure is New England Butt., c. 1914-1916

Notes: Category: storage old and new

Copy negative: 99-30295

Job name: New England Butt Company?

318949.1206 Newly organized storage units with brown paper-wrapped packages on them, of paper or maybe handkerchiefs or something. One of the bays has wooded pieces crossed over it; also inventory tags. Gilbreth day blackboard with the date on it and photo number. A white line is painted on the floor adjacent to where the storage unit meets the floor., Dec. 7, 1914

Notes: Category: storage old and new

Copy negative: 99-30296

Gilbreth image: 336

318949.1207 A row of redesigned charis lined up in front of a gridded background. In the front are two clocks and a placard that says 134 (which would have been the first image number, assigned prior to 17989). Also on the upper right hand side of slide is a small sticker which says B 51--as if this is the number for a slide show., August 25, 1917?

Notes: Category: ergonomics

Gilbreth image: 17989

Information on photo: B 51

318949.1208 Seven chairs and one stool lined up against a black background in a ware-house type space. Placard says 'Types of chairs in use 8-25-17, R.T.W.' On the top right is a sticker which says A 4--the number of the slide for a presentation, perhaps., 25-Aug-17

Notes: Category: ergonomics

Gilbreth image: A 17660

Information on photo: A4

318949.1209 A row of redesigned chairs lined up in front of a gridded background. In the front are two clocks and a placard that says 136 (which would have been the first image number, assigned prior to 17989). Also on the upper right hand side of slide is a small sticker which says B 52--as if this is the number for a slide show., 1917?

Notes: Category: ergonomics

Gilbreth image: 17983

Information on photo: B 52

318949.1210, A man sits on the top tier of a two-tiered seat, made out of white-painted metal parts with cushions, at a drafting board which is in a complete horizontal position. In the companion image (see 99-30301), he has bumped down to the lower seated position, and the drafting table is at an angle, as is typical for drafting work., undated

Notes: Category: ergonomics

Gilbreth image: 73417G (?)

318949.1211 A man sits on the bottom tier of a two-tiered seat, made out of white-painted metal parts with cushions, at a drafting board which is at an angle, as is typical for drafting work. In the companion image (see 99-30300), he is on the upper seated position, and the drafting table is at a complete horizontal position., undated

Notes: Category: ergonomics

Copy negative: 99-30301

Gilbreth image: 22615G?

Information on photo: B 1

318949.1212 This is the sliding white seat which looks like a tractor seat. Metal with holes in the back part of the seat, which is on rollers on a supporting structure. This supporting structure can also move, and when in the closed position, the worker is seated before a big roll of paper, and can slide easily from left to right. This image shows the whole mechanism open, ready for the worker to get on the seat and have it be moved to the work-ready position in front of the paper roll., undated

Notes: Category: ergonomics

Gilbreth image: 17506

318949.1213 This is the sliding white seat which looks like a tractor seat. Metal with holes in the back part of the seat, which is on rollers on a

supporting structure. This supporting structure can also move, and when in the closed position, the worker is seated before a big roll of paper, and can slide easily from left to right. This image shows the mechanism in a closed position, as if the worker was at his/her post. See also 99-30302 and 99-30304., undated

Notes: Category: ergonomics

Copy negative:

Gilbreth image: 17510

318949.1214 This is the sliding white seat which looks like a tractor seat. Metal with holes in the back part of the seat, which is on rollers on a supporting structure. This supporting structure can also move, and when in the closed position, the worker is seated before a big roll of paper, and can slide easily from left to right. This image shows the mechanism in a closed position, as if the worker was at his/her post. See also 99-30302 and 99-30303., undated

Notes: Category: ergonomics

Gilbreth image: 17517

Information on photo: B 10

318949.1215 Close-up of a woman's boots resting on a curved foot rest underneath a table. See also 99-30306., 1917

Notes: Category: ergonomics

Gilbreth image: 1700.115 (17000.115)

318949.1216 Close-up of a woman's boots resting on a curved foot rest underneath a table. See also 99-30305 and 99-30311., 1917

Notes: Category: ergonomics

Gilbreth image: 1700.115

Information on photo: B 99

318949.1217 A man in black trousers (one can see only legs) rests his feet on a curved footrest. Behind him is a white wall with black grid marks. Same as 99-30308, which is a positive., 1917

Notes: Category: ergonomics

Gilbreth image: 17754

Information on photo: B 8

318949.1218 A man in black trousers (one can see only legs) rests his feet on a curved footrest. Behind him is a white wall with black grid marks. Same as 318949.1217, which is a negative., undated

Notes: Category: ergonomics

Gilbreth image: 17756

318949.1218A, Man in black trousers (one can see only legs) rests his feet on a curved footrest. Behind him is a white wall with black grid marks. Same as 318949.1217., 1917

Notes: Category: ergonomics

Gilbreth image: 17756 (same as)

318949.1219 A close-up of a woman's legs underneath a work table. She has black boots and a white skirt; her left foot is on a piece of wood on the floor, and her right foot is resting on a wooden bar, built as a (somewhat crude) footrest. Next to her foot is a metal grill, perhaps a pedal for operating machinery. There is a Gilbreth blackboard on which is written '641-5.' She seems to be sitting on a stool or chair made out of round legs and stiles, with a cane seat., undated

Notes: Category: ergonomics
Copy negative: 99-30310
Gilbreth image: 17005
Information on photo: 48

318949.1220, Close-up of a woman's boots resting on a curved foot rest underneath a table. See also 99-30305 and 99-30306., 1917

Notes: Category: ergonomics
Gilbreth image: 1700.94
Information on photo: B 90

318949.1221 This is the same set-up for the man in black trousers who was resting his feet on a curved footrest. Here one sees a curved foot rest, a chair with adjustable front legs, two Gilbreth clocks, a gridded background, and a small card which says 140. See also 99-30308., undated

Notes: Category: ergonomics
Gilbreth image: 17986
Information on photo: B 60

318949.1222 This is one of two companion images (see also no. 99-30314). Tall drafting desk with the lid in a horizontal position; beneath it is the curved foot rest; also is the wooden chair with adjustable front legs with the back on a slight angle. Gilbreth clock and a white background with grids; a placard which reads 179 649. (649 would be the job number)., undated

Notes: Category: ergonomics
Copy negative: 99-30313
Gilbreth image: 1700.103

318949.1223 This is one of two companion images (see also no. 318949.1222). Tall drafting desk with the lid in an open, angled position; beneath it is the curved foot rest; also is the wooden chair with adjustable front legs with the back on a slight angle. Gilbreth clock and a white background with grids; a placard which reads 179 649. (649 would be the job number). See also 99-30322, where the polka dot woman is at the desk., undated

Notes: Category: ergonomics
Gilbreth image: 1700.104

318949.1224 This is one of two nearly identical images which shows a wooden chair mounted on a square platform with rollers. There is a Gilbreth day blackboard in the image which says Gilbreth Day Mon 1914 21 XII 346.' Plain white background. Chair itself does not seem to have been altered in any way. See also 318949.1225., Dec. 21, 1914

Notes: Category: ergonomics
Gilbreth image: T346

318949.1225 These is one of a series of 4 still-lives of chairs, all taken in March and April 1915 (see 318949.1225-8). All four have 'Gilbreth Day' blackboards with date and numbers. This image shows a wooden chair which is mounted on little wooden feet. In front of the chair are a number of other wooden 'feet' at differernt heights, as if one could adjust height of chair by using this different height pedestals., 9-Mar-15

Notes: Category: ergonomics
Gilbreth image: T407
Information on photo: T 407 9.III.15

318949.1226 This is one of two nearly identical images which shows a wooden chair mounted on a square platform with rollers. There is a Gilbreth day blackboard in the image which says 'Gilbreth Day Mon 1914 21 XII 346.' Plain white background. Chair itself does not seem to have been altered in any way. See also 99-30315., Dec. 21, 1914

Notes: Category: ergonomics
Copy negative: 99-30316
Gilbreth image: T346 (implied)

318949.1227 These is one of a series of 4 still-lives of chairs, all taken in March and April 1915 (see 318949.1226-1229). All four have 'Gilbreth Day' blackboards with date and numbers. This image shows a high wooden chair whose back is solid wood, on an angle; the whole thing looks like it's on a little platform., 9-Mar-15

Notes: Category: ergonomics
Gilbreth image: T470
Information on photo: T470 9.III.15

318949.1228 These is one of a series of 4 still-lives of chairs, all taken in March and April 1915 (see 318949.1226 or so). All four have 'Gilbreth Day' blackboards with date and numbers. This shows a stool with an upholstered seat which is mounted on a big wooden pole which has been threaded; it can, therefore, go up and down., 13-Apr-15

Notes: Category: ergonomics
Gilbreth image: 445 (T445)

318949.1229 These is one of a series of 4 still-lives of chairs, all taken in March and April 1915 (see nearby accessions). All four have 'Gilbreth Day' blackboards with date and numbers. This image shows a realtively normal wooden chair on foot pedestals; the whole thing is then on tp of another wooden platform, which may have rollers., 20-Apr-15

Notes: Category: ergonomics
Gilbreth image: T480
Information on photo: T480 20.4.15

318949.1230, This image shows a chair and bench with two adajacne tables, upon which rest boxes for the pick-up and placement of assembled objects. It

is in a gridded motion study lab, and the Gilbreth Day placard says 'Lifebuoy bench 1-20-21.', Jan. 20, 1921

Notes: Category: ergonomics

Gilbreth image: 210.097

318949.1231 This is one of two images (see 318949.1232) which shows a projector box for film reading in daylight room. Motion lab gridding all about. There are two people, a man and a woman, looking at films., Jan. 20, 1921

Notes: Category: business and apparatus of motion study

Gilbreth image: 210.13

318949.1232 This is one of two images (the other is 318949.1231) which shows a projector box for film reading in daylight room. Motion lab gridding all about. No people present in this one., undated

Notes: Category: business and apparatus of motion study

Copy negative:

Gilbreth image: 210.15

318949.1233 The polka dot dress woman sits at a tall drafting desk with the lid in a closed position; beneath it is the curved foot rest; also is the wooden chair with adjustable front legs with the back on a slight angle; the back is in the very straight position. Gilbreth clock and a white background with grids; a placard which reads 180 649. (649 would be the job number). See also 99-30314., undated

Notes: Category: ergonomics

Gilbreth image: 1700.100 (also 180)

Job number: 649

318949.1234 Miss Stolnitz stands at an elevated desk which has a typewriter at it. Behind her is a pedestal with a wooden office chair on it. See the companion images 318949. 1235-37., 1916?

Notes: Category: typing study; ergonomics

Copy negative: 99-39324

Gilbreth image: 17786

Information on photo: Miss Stollnitz and You?le Chair

318949.1234 Crowd seated in amphitheater. People seated on the stage of the 'Greek Theatre' in California. This looks like it could be California, by the trees. This is not Lillian's graduation in 1915, which was in Providence. I wonder [EHB] if Lillian brought her gown with her when she and Frank went to the PPIE in 1915, which might explain some of these California-specific images with her in her graduation gown, such as 318949.0805 and 318949.0883 and 318949.0865. Acc. no. 318949.1234 says 'Greek Theatre' on the slide; and sure looks like a graduation., undated

Notes: Category: Gilbreth Family

Copy negative: 99-30426

Information on photo: Greek Theatre

318949.1235 A woman works at a desk; both the chair and the desk are elevated. The chair is on a wooden platform, open in the middle. Behind her is a gridded desk., Dec. 5, 1914

Notes: Category: office study; ergonomics
Gilbreth image: T238
Information on photo: 5.XII.14; T238

318949.1236 Miss Stollnitz sits at a desk and typewriter. Behind her a man in a white shirt and tie looks on. The chair and desk are both elevated., undated

Notes: Category: typing study; ergonomics
Gilbreth image: 17776

318949.1237 A man stands with a file in a vice grip, bolted onto a work bench; above the bench, lots of stuff taped to the wall. He's a worker. behind him, a row of machines that look like drill presses, perhaps., undated

Notes: Category: machine shop study
Information on photo: B10

318949.1238 This is one of three images (318949.1238-1240) which show a woman working at an ergonomically-correct work station in a motion laboratory. The work has something to do with textiles, as the materials in the boxes look like spindles; one can also see a loom off stage. The right hand box, from where one would pick up materials is tilted at an angle. The chair has little foot rests built onto it., undated

Notes: Category: assembly study; ergonomics
Information on photo: 640
Job number: 640

318949.1239 to 318949.1423

318949.1239 This is one of three images (318949.1238-1240) which show a woman working at an ergonomically-correct work station in a motion laboratory. The work has something to do with textiles, as the materials in the boxes look like spindles; one can also see a loom off stage. The right hand box, from where one would pick up materials is tilted at an angle. The chair has little foot rests built onto it., undated

Notes: Category: assembly study; ergonomics
Information on photo: 640
Job number: 640

318949.1240, Woman working at an ergonomically-correct work station in a motion laboratory, undated

Notes: Category: assembly study; ergonomics
Job number: 640

This is one of three images (318949.1238-1240) which show a woman working at an ergonomically-correct work station in a motion laboratory. The work has something to do with textiles, as the materials in the boxes look like spindles; one can also see a loom off stage. The right hand box, from where one would

pick up materials is tilted at an angle. The chair has little foot rests built onto it.

318949.1241 overhead view of sailors in a lifeboat, 1918?
Notes: Category: military study

318949.1242 men on deck of ship are looking over edge to see sailors in a lifeboat, undated
Notes: Category: military study

318949.1243 man in military uniform, Jan. 27, 1915
Notes: Category: military study
Gilbreth image: T370

318949.1244 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated
Notes: Category: foot measuring study; military study; locomotion study
Gilbreth image: 18196

318949.1245 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated
Notes: Category: foot measuring study; military study; locomotion study
Gilbreth image: 18240

318949.1246 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated
Notes: Category: foot measuring study; military study; locomotion study
Gilbreth image: 18239

318949.1247 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. Can see two figures and a bit of the motion study grid and set up. Same session as 99-30338. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which

are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated

Notes: Category: foot measuring study; military study; locomotion study

Copy negative:

Gilbreth image: 18236

318949.1248 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. Can see a figure and a bit of the motion study grid and set up. Same session as 318949.1247. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18230

318949.1249 Cyclegraph of an old method of measuring feet for shoes in the Army, before Gilbreth and Col. W.Owen standardized shoe fitting through motion study, reducing (FBG claimed) the number of poorly fitted shoes for soldiers., undated

Notes: Category: foot measuring study; military study;
Gilbreth image: 18211

318949.1250, Cyclegraph from the military work--either bayonet or shoe fitting. You can see a '24' in the image. I am pretty sure it's shoe fitting study., undated

Notes: Category: foot measuring study; military study;
Copy negative:

Gilbreth image: 18330?

318949.1251 Cyclegraph from the military work--either bayonet or shoe fitting. You can see a '26' in the image. I am pretty sure it's shoe fitting study., undated

Notes: Category: foot measuring study; military study
Gilbreth image: 18334?

318949.1252 Cyclegraph from the military work--either bayonet or shoe fitting. You can see a '28' in the image. I am pretty sure it's shoe fitting study., undated

Notes: Category: foot measuring study; military study
Gilbreth image: 18214

318949.1253 Cyclegraph of military study--possible bayonet., undated

Notes: Category: military study
Gilbreth image: 18552

318949.1254 Cyclegraph of something--passing instruments?--while working at the New York Hospital. You can see the number 19 in the gloom., c. 1913-1914

Notes: Category: surgical & dental study
Gilbreth image: 615-128

318949.1255 Modest cyclegraph of something happening in the world of surgery. 1-2 cycles at most, close to body. You can see a '5' in the gloom., undated

Notes: Category: surgical & dental study
Gilbreth image: 615-133

318949.1256 Miss Stolnitz typing. See related captions. Looks like two balls of light., undated

Notes: Category: typing study
Copy negative:
Gilbreth image: 16193

318949.1257 Chronocyclegraph of bricklaying. You can see an '80' in the image, too. The lines (about 5 cycles) show two long sweeping motions, one shorter than the other. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study
Gilbreth image: GL356

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also

is affected by the delay of the left hand.GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously.GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot.Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously.GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-336 Model showing positioning before transportation.GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick.[Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.]GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand.[Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.]GL-348 Laying three bricks (old method).GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks.GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but doe not show in this picture.GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when

mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1258 Chronocyclegraph of bricklaying. You can see an '58' in the image, too. In the background the edges of the motion lab and grid are visible. The lines (about 5 cycles) show two long sweeping motions, one shorter than the other. There are two slides of this image. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL341

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand,

trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall, - light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1259 Chronocyclegraph of bricklaying. You can see an '58' in the image, too. In the background the edges of the motion lab and grid are visible. The lines (about 5 cycles) show two long sweeping motions, one shorter than the other. There are two slides of this image. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated
Notes: Category: bricklaying study

Gilbreth image: GL341

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least

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318949.1260 Chronocyclegraph of bricklaying. You can see an '5?' in the image, too. In the background the edges of the motion lab and grid are visible. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL347

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall

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318949.1261 Very chaotic looking chronocyclegraph of handkerchief folding. No Gilbreth number. Similar to the series depicted in 618-G70 and 618-G69, but many more cycles. This looks like some degree of habit., Fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Job name: Herrmann-Aukam Co.

Job number: 618

Related captions: "Shows an operator folding square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NF 01/0019 v.1).

618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown.

618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1.

618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times, or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture.

618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

318949.1262 Bricklaying chronocyclegraph 4 cycles. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Copy negative: 99-30352

Gilbreth image: GL 321

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand.GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it

caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall, - light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1263 chronocyclegraph of handkerchief folding, 1913 c.
Notes: Category: assembly study

318949.1264 Chronocyclegraph of fencing motion. It looks nearly identical to F 148--if not the same fencer, then at least the same set of motions., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Job name: Auergesellschaft
Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

318949.1265 Two arced cyclegraph lines; one arced chronocyclegraph line and one straight chronocyclegraph line. On the slide is handwritten: Paths of points of light on a wheel.', undated

Notes: Category: misc./pure cyclegraphs or unidentified study
Gilbreth image: GL1744

318949.1266 Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. Can see a figure and a bit of the motion study grid and set up. Same session as 318949.1267. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18247

318949.1267 Foot measuring study via cyclegraph, 1918

Notes: Category: foot measuring study

Gilbreth image: 18210

318949.1268 Bricklaying study--chronocyclegraphs. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL343

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?)] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand.GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously.GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in

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318949.1269 Chronocyclegraph of bricklaying. This is part of a large series, which goes from 318949.1338 to 318949.1359-- at least; there are other bricklaying GL series images in the database., undated

Notes: Category: bricklaying study

Gilbreth image: GL290

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284

Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand

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318949.1270 Chronocyclegraph of bricklaying. '78' is visible. This is part of a large series, which goes from 318949.1338 to 318949.1359-- at least; there are other bricklaying GL series images in the database., undated

Notes:

Category: bricklaying study

Gilbreth image: GL366

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the

path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353

Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1271 Chronocyclegraph of handkerchief folding. Plaid curtain in background. This is not numbered, but is similar to the 618-G69 and 618-G70 series. There are more cycles represented in this image than on the stereographs, which can indicate habit; at the same time, though, there are some erratic motions. FBG could have used this to discuss either 'habit' of an experienced folder or the 'wasted' motions of an inexperienced folder--who knows., Oct. 1913

Notes:

Category: handkerchief folding study

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way.

Note that #618-G71-B shows an inexperienced girl; also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard

conditions. With the exception of these special deviations the path of Ahabit is very clearly shown.

618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1. 618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times, or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture.

618-G70-4 See 618-G69-4 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding. "Note that #618-G71-B shows an inexperienced girl; also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

318949.1272 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.152

318949.1273 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Copy negative:

Gilbreth image: 1700.152

318949.1274 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.159

318949.1275 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.16

318949.1276 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Copy negative: 99-30366

Gilbreth image: 1700.161

318949.1277 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.165

318949.1278 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18198

318949.1279 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.165

318949.1280 There are a number of these chronocyclegraph studies of locomotion , 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18189?

At least 9 studies, some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking.

318949.1281 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.16

318949.1282 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.159

Box 9 318949.1283 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking.

Box 9 318949.1284 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking.,

318949.1285 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18249

318949.1286 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18248

318949.1287 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18249--est.

318949.1288 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study

laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18286(?)

318949.1289 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.141?

318949.1290 Newer wooden storage units with inventory tags in front. Gilbreth Day blackboard says 'Gilbreth Day Mon 1914 17 XII 335.' In the bin are German language products in small packages. These say 'A.W. Faber Gelbstifte' among other things. Auer?, Dec. 17, 1914

Notes: Category: storage old and new

Copy negative: 99-30290

Gilbreth image: 335 (T355)

Information on photo: 17.XII.14 T335

318949.1291 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Copy negative:

Gilbreth image: 18244

318949.1292 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18252

318949.1293 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study

laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18253

318949.1294 Cyclegraph of--it might be foot measuring study, before the locomotion sets in, or else bayonet study., 1918

Notes: Category: military study

Gilbreth image: 18245

318949.1295 Locomotion cyclegraph from army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking. This particular image documents pretty straight forward walking., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18200

318949.1296, This cyclegraph is of Miss Gold typing. (There is a caption; find it.). This image, and those nearby in the 16000 series, were taken as part of the Gilbreth's Champions series--a documentation of the best motions of various champions from athletics, work, wherever. Most of this series documents typing and golf; it is not always easy to tell the difference., 1916

Notes: Category: misc./pure cyclegraphs or unidentified study; typing study

Copy negative:

Gilbreth image: 16355

318949.1297 This cyclegraph image, and those nearby in the 16000 series, were taken as part of the Gilbreth's 'Champions' series--a documentation of the 'best' motions of various 'champions' from athletics, work, wherever. Most of this series documents typing and golf; it is not always easy to tell the difference. This image, I think, is golf: note the small spot of light at the bottom, which is probably the club., 1916

Notes: Category: misc./pure cyclegraphs or unidentified study; golfing study

Gilbreth image: 16299

318949.1298 This cyclegraph image, and those nearby in the 16000 series, were taken as part of the Gilbreth's 'Champions' series--a documentation of the 'best' motions of various 'champions' from athletics, work, wherever. Most of this series documents typing and golf; it is not always easy to tell the difference. This image, I think, is golf: the upward arching curve is probably the club swinging., undated

Notes: Category: misc./pure cyclegraphs or unidentified study; golfing study

Gilbreth image: 16301

318949.1299 This cyclegraph image, and those nearby in the 16000 series, were taken as part of the Gilbreth's 'Champions' series--a documentation of the 'best' motions of various 'champions' from athletics, work, wherever. Most of this series documents typing and golf; it is not always easy to tell the difference., 1916

Notes: Category: misc./pure cyclegraphs or unidentified study

Gilbreth image: 16305

318949.1300, This cyclegraph image, and those nearby in the 16000 series, were taken as part of the Gilbreth's 'Champions' series--a documentation of the 'best' motions of various 'champions' from athletics, work, wherever. Most of this series documents typing and golf; it is not always easy to tell the difference., 1916

Notes: Category: misc./pure cyclegraphs or unidentified study

Gilbreth image: 16309

318949.1301 Locomotion cyclegraph from army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking. This particular image documents pretty straight forward walking, but you can see a bit of the set-up and one figure to the side., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18197

318949.1302 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head. This particular image is a close-up of the cyclegraph apparatus on the stocking feet., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18235

318949.1303 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. This particular image looks like it might document the movement of the knees in locomotion, since the light is a bit high up for feet; see the companion images to this one (at least Gilbreth image number 1700.153, 1700.156, and 1700.158; there may be others in the database)., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.156

318949.1304 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. This particular image looks like it might document the movement of the knees in locomotion, since the light is a bit high up for feet; see the companion images to this one (at least Gilbreth image number 1700.153, 1700.156, and 1700.158; there may be others in the database)., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.156

318949.1305 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. This particular image looks like it might document the movement of the knees in locomotion, since the light is a bit high up for feet; see the companion images to this one (at least Gilbreth image number 1700.153, 1700.156, and 1700.158; there may be others in the database)., 1918

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.158

318949.1306 There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. This particular image looks like it might document the movement of the knees in locomotion, since the light is a bit high up for feet; see the companion images to this one (at least Gilbreth image number 1700.153, 1700.156, and 1700.158; there may be others in the database)., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 1700.153

318949.1307 Locomotion cyclegraph from army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head; some of the wavy images suggest (intentionally) erratic walking. This particular image documents pretty straight forward walking., undated

Notes: Category: foot measuring study; military study; locomotion study

Gilbreth image: 18212

318949.1308 Chronocyclegraph of handkerchief folding. Very difficult to tell, but my hunch is that this is a pattern of an experienced folder using

'standard' motions; it may even be the pattern which the Gilbreths turned into a motion model of the 'right way.' There are fewer cycles than documented in the stereocards, and this image shows no background at all. Check against motion model images., fall 1913

Notes: Category: handkerchief folding study; motion models
Copy negative: 99-30398
Gilbreth image: 618-G6?

318949.1309 Chronocyclegraph of handkerchief folding. Very difficult to tell, but my hunch is that this is a pattern of an experienced folder using 'standard' motions; it may even be the pattern which the Gilbreths turned into a motion model of the 'right way.' There are fewer cycles than documented in the stereocards, and this image shows no background at all. Check against motion model images., fall 1913

Notes: Category: handkerchief folding study; motion models
Gilbreth image: 618-GB

318949.1310, Two children on a swing Nantucket at the Shoe. Bill and Frank on swing. See also the image acc. number 318949.0156, which has Tom Greaves in it, the hired man. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow for the related image, no. 318949.0156. Dave elaborates with Ernestine: 'At 'The Shoe' on Nantucket. c. 1919. Lighthouse (tower) smaller of the two (Mic and Cyc)--this one is Mic [pronounced 'Mike']., 1919

Notes: Gilbreth image: 19720

Related captions: This caption is for an image of 19737, an image that I have not seen but which sounds like it may have been taken on this trip to Nantucket?? given the image number. Experiments of picking blue berries, huckleberries and cranberries with children of various ages and with professional cranberry pickers. The results of these experiments showed that it would certainly be easy to enable them to pick five times as many berries with the same effort in the same length of time. Now, berry picking is one of the first things that man has ever done, and yet the One Best Way has not yet been discovered by the drifting process, showing that if the bricklayer, the cotton picker and the berry picker have not found the One Best Way in the last 500, 000 years it is fair to presume that the work must be done by the methods of the laboratory and by the drifting process. The scale cage here is for the purpose of the directions and locations and speed of motions, because with the clock and the scale cage, which permits the cross sectioned back ground to be put in at any time, all the information necessary regarding the path and speed of motions can be determined.

Location of subject: Nantucket, MA

Subject names: Bill and Frank Gilbreth

318949.1311 This image is identical to 318949.0224; see also 318949.0904 and 318949.0967. Family picture of Frank, Lillian, Frank's mother, an unidentified woman, and four children standing on grass near a large body of water. Clockwise Frank Sr., Anne, Lillian Sr., Bill, Carrol Cross, Grandma

Gilbreth, Martha, Ernestine, Frank Jr. taken at Buttonwoods, RI. [Ernestine Carey via Peter Liebhold?] People in photo identified by Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: From left, back row: Frank B. Gilbreth, Anne Gilbreth (child), Lillian M. Gilbreth, Bill Gilbreth (baby), Carol Cross (cousin) (holding baby), Martha Bunker Gilbreth. Front Row, from left: Frank B. Gilbreth Jr. (in front of his dad), Ernestine Gilbreth, Martha Gilbreth (with beads). Jane Lancaster writes: 'Ernestine told me this was Carol Cross--she seemed v. sure--but also about the next image [318949.0155] which is only a year or two earlier--and Carol Cross must have grown up fast.' Also Jane Lancaster reports this image taken somewhere in Rhode Island, Summer 1915, probably August since Frank and Lillian were in Germany in June and July, 1915. Also, Bill was born in Dec. 1912, and Frank born March 1911. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: the IDs she gives are the same except she identifies the woman holding Bill as Anne Cross, not Carol Cross., 1913

Notes: Category: Gilbreth Family

318949.1312 Martha Gilbreth wearing a necklace standing outside with water in background. Identical to image acc. 318949.1904; see also 318949.0967 and all the other Buttonwoods images. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Martha Gilbert, RI 1913 (see image 0224 for necklace).' Buttonwoods, RI, I am almost positive. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: agrees that this Martha. c. 1913-14., 1913 c.

Notes: Category: Gilbreth Family

Location of subject: Buttonwoods, RI

Subject names: Martha Gilbreth

318949.1313 Martha Gilbert on left with Frank Jr., c. 1913-1914, probably at Buttonwoods, RI summerhouse. See for example 318949.0967, as well as the nearly identical image 318949.1212., undated

Notes: Category: Gilbreth Family

Location of subject: Buttonwoods RI

318949.1314 Martha Gilbert on left with Frank Jr., c. 1913-1914, probably at Buttonwoods, RI summerhouse. See for example 318949.0967, as well as the nearly identical image 318949.1313., 1913-1914

Notes: Category: Gilbreth Family

Location of subject: Buttonwoods, RI?

318949.1315 Lillian Gilbreth seated in rocking chair on porch, with Martha Gilbreth in the foreground and another girl, probably Ernestine, in the background also seated. Looks like the porch of the Buttonwoods, RI summerhouse, summer 1913 or 1914., 1913, 1914

Notes: Category: Gilbreth Family

Location of subject: Buttonwoods, RI

Subject names: Martha, Ernestine, and Lillian Gilbreth

318949.1316 Three Gilbreth children standing in a shoreline meadow. The kids are, from left to right, Martha Gilbreth, Anne Gilbreth, and Frank Jr, as IDed by Elspeth Brown. Probably Buttonwoods, RI summer of 1914. see 318949.0967; 318949.1215-8., undated

Notes: Category: Gilbreth Family
Location of subject: Buttonwoods, RI

318949.1317 Three Gilbreth sitting in a meadow with the large Buttonwoods (?) house in background. From left to right: Frank Jr., Martha, and Ernestine, as IDed by Elspeth Brown while working with comparable images. Probably 1914 at Buttonwoods, RI summer house., undated

Notes: Category: Gilbreth Family
Location of subject: Buttonwoods, RI

318949.1318 Two Gilbreth children, Frank Jr. and Martha Gilbreth, standing in seashore meadow, probably Buttonwoods RI, summer 1914. IDed by Elspeth Brown., undated

Notes: Category: Gilbreth Family

318949.1319 Four adults and three children stand in a field near the shore picking flowers. The adults are, from left to right: unidentified woman (possibly LMG sister); William Moller; unidentified woman (possible another LMG sister); and Carol Cross, I think. The children are, from left to right: Martha, Anne, and Frank Jr. Location: either Buttonwoods RI summer 1914, probably. See also 318949.1213-1216., 1914?

Notes: Category: Gilbreth Family

318949.1320, Three adult women and three Gilbreth children stand in a shoreline meadow. , undated

Notes: Category: Gilbreth Family
Adults, from left to right: Carol Cross, and two unidentified women, perhaps Lillian's sisters, or one might be Anne Cross, FBG's sister. Children, left to right: Frank, Anne, and Martha. Location: either Buttonwood RI or Inverness CA, summer 1914 probably. Taken at same time as 318949.1217.

318949.1321 Three Gilbreth children look at corn in a field. They are, left to right: Martha, Frank Jr., and Anne. Taken at either Buttonwoods RI. summer 1914., undated

Notes: Category: Gilbreth Family

318949.1322 Martha Gilbreth with a doll, standing in a meadow near the shore. Probably or Buttonwoods RI, summer 1914. [ID Elspeth Brown]., undated

Notes: Category: Gilbreth Family

Box 9

318949.1323 two Gilbreth daughters standing

318949.1324 Three Gilbreth children play in the surf with unidentified female adult, at Block Island summer 1915. Kids: left to right Martha, Ernestine, and Frank Jr. see acc. 318949.1325 and 318949.0978 and 318949.1326., undated

Notes: Category: Gilbreth Family
Information on photo: Block Island summer 1915
Location of subject: Block Island

318949.1325 Three Gilbreth children play in the surf with unidentified female adult, at Block Island summer 1915. Kids: left to right Martha, Ernestine, and Frank Jr. see acc. 318949.1324., 1915

Notes: Category: Gilbreth Family
Information on photo: Block Island summer 1915

318949.1326 Ernestine Gilbreth in front of merry-go-round, August 1915, probably Block Island. See 318949.1324-1326 ., 1915 Aug

Notes: Category: Gilbreth Family
Information on photo: Aug-15

318949.1327 Two unidentified men sit on a porch in mountains playing stringed instruments while a third man, seated, looks on. Taken at Inverness, CA, at the Moller summer cottage (you can tell by the pergola and mountains). . See 318949.0601. These men may be married to LMG's sisters, or they might be Brown cousins; man seated in rear might be William Moller, LMG's dad. [EHB ID]. c. 1915, undated

Notes: Category: Gilbreth Family

318949.1328 Entrance to 'Wildwood,' the Moller summer 'cottage' in Inverness, CA., undated

Notes: Category: Gilbreth Family

318949.1329 Lillian and four of the kids stand near Narragansett Pier, July 1915. From left to right the kids are: Frank Jr., Anne, Ernestine, and Martha. [ID EHB], 1915 July

Notes: Category: Gilbreth Family
Information on photo: July 1915 Narragansett Pier
Location of subject: Narragansett RI

318949.1330 Martha Gilbreth stands in walkway in back yard of Moller house in Oakland, c. 1915., undated

Notes: Category: Gilbreth Family
Subject names: Martha Gilbreth

318949.1331 see also 318949.0938. Male, probably Fred Moller, in military uniform standing on garden path holding a small child--maybe his own, or maybe Fred. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'c. 1917 or 1918, one of Lillian's brothers. Possibly baby Fred (b. August 1916). I believe all three of them served in WWI.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Fred Moller with Family' [Fred Moller was LMG's brother]., 1917

Notes: Category: Gilbreth Family

318949.1332 see also 318949.0938. Two men hold two small children in front of the Moller house in Oakland. They are Moller men, and not sure who the babies are. In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Fred Moller with Family' [Fred Moller was LMG's brother]., undated

Notes: Category: Gilbreth Family

318949.1333 Two females standing on porch of house (Lillian and her mother, I am pretty sure). See also 318949.0990 and 318949.0868. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Anne Delger Moller [Lillian's mother] and Lillian, porch of 77 Brown Street, Providence.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Providence RI. Grossie and LMG.' As for location: Dave's notes (not sure his observation or Ernestine's: 'Annie Moller and Lillian Gilbreth, in front of Anne Cross' house (Frank's sister, who lived around the corner in Providence.)' [But note that Ernestine labels this house as both 77 Brown St and Angel Street, (rented), Providence]; see acc. # 318949.0990., 1913?

Notes: Category: Gilbreth Family

Gilbreth image: GF76

318949.1334 Three females standing on porch of house (one may be Lillian). See also 318949.0990 and 318949.0868. Info from Jane Lancaster, Gilbreth biographer, June 2000 in correspondence with Elspeth Brown, Gilbreth scholar: 'Anne Delger Moller [Lillian's mother] and Lillian, porch of 77 Brown Street, Providence.' In the summer of 2000, Elspeth Brown sent Dave Ferguson, of the Gilbreth Network, a set of photos and xeroxes for him to bring to Ernestine Gilbreth Carey, for ID purposes. Her comments follow: 'Providence RI. Grossie and LMG.' As for location: Dave's notes (not sure his observation or Ernestine's: 'Annie Moller and Lillian Gilbreth, in front of Anne Cross' house (Frank's sister, who lived around the corner in Providence.)' [But note that Ernestine labels this house as both 77 Brown St and Angel Street, (rented), Providence]; see acc. # 318949.0990., 1913? 1915?

Notes: Category: Gilbreth Family

Gilbreth image: GF74

318949.1335 Moller house in Oakland, CA., undated

Notes: Category: Gilbreth Family

318949.1337 pure cyclegraph. Hard to figure out, but I think it might be Jane Bunker's dentistry motions. This is based on the fact that related captions are for both bricklaying and dentistry, and these do not look like bricklaying., 1916?

Notes: Category: surgical & dental study

Gilbreth image: GL 66

Related captions: GL-60 "Record of skilled orthodontist showing admirable decision."

GL-68 "Studying orthodonture work of Dr. Jane G. Bunker."

318949.1338 Chronocyclegraph of laying bricks. This is part of a large series, which goes from 318949.1338 to 318949. 1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 288

Original caption: GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the

pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall, - light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1339 chronocyclegraph of laying bricks. The number is broken off, but it looks like it would be around GL 288. This is part of a large series, which goes from 318949.1338 to 318949. 1359., undated

Notes:

Category: bricklaying study

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note

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laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick.[Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.]GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.]GL-348 Laying three bricks (old method).GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks.GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture.GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time.GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand.GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1340, chronocyclegraph of laying bricks. The number is broken off, but it looks like it would be around GL 288. This is part of a large series, which goes from 318949.1338 to 318949. 1359., undated

Notes:

Category: bricklaying study

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).]GL-286 Chronocyclegraph of bricklayer reaching for one brick.

It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar,

but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1341 chronocyclegraph of laying bricks, 3 cycles. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 322

Original caption: This is for the image that came before, and I suspect it is the same:

GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel

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motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1342 Chronocyclegraph of laying bricks; same as 318949.1341.

This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 322

Original caption: This is for the image that came before, and I suspect it is the same:

GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand.GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped

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318949.1343 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 324

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318949.1344 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 325

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318949.1345 Chronocyclegraph of motions of head, right hand, trowel, and left hand in laying one brick by the old method. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 328

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318949.1346 Chronocyclegraph of motions of head, right hand, trowel, and left hand in laying one brick by the old method. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 329

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318949.1347 Chronocyclegraph of motions of head, right hand, trowel, and left hand in laying one brick by the old method. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

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Gilbreth image: GL 330

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318949.1348 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 333

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318949.1349 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 334

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318949.1350, Looks like GL 334, but the number is missing.

Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

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318949.1351 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

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Category: bricklaying study

Gilbreth image: GL 334

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318949.1352 Chronocyclegraph of laying bricks, more than 3 cycles. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated
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Category: bricklaying study

Gilbreth image: GL 342

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Notes: Category: bricklaying study
Gilbreth image: GL350
Information in photo: 72

Related captions: The following captions are FBG's, and are from the N file at Purdue: GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions. GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands, - each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph

of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-336 Model showing positioning before transportation.GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick.[Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.]GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.]GL-348 Laying three bricks (old method).GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks.GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but doe not show in this picture.GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time.GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand.GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1355 Chronocyclegraph of laying bricks, more than 3 cycles. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 362

Information in photo: 73

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks

are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet. Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction. [The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand. GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting. GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head. GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously. GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand.

[Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.]GL-348 Laying three bricks (old method).GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks.GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture.GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time.GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand.GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1356 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes:

Category: bricklaying study

Gilbreth image: GL 366

Information in photo: 68

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).]GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand.GL-288 Laying one

brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously.GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot.Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously.GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-336 Model showing positioning before transportation.GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick.[Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.]GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall,- light on head and on hand.[Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.]GL-348 Laying three bricks (old method).GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks.GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but doe not show in this picture.GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks.GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time.GL-365 Bricklaying

chronocyclegraph, brick being lifted from packet to wall, -light on head and hand.GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1357 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).--pretty sure this would be accurate, judging from adjacent captions. This is part of a large series, which goes from 318949.1338 to 318949.1359., undated

Notes: Category: bricklaying study

Gilbreth image: GL 368

Related captions: The following captions are FBG's, and are from the N file at Purdue:GL-283 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-284 Chronocyclegraph of the motions of the head and left hand of an expert bricklayer laying ten bricks in the old way. Note the pointed ends of the spots indicate the directions of the motions.GL-285 Chronocyclegraph of brickwork. The upper lines show the path of the head, and the lower lines show the paths of right and left hands,- each hand picking up a brick simultaneously and depositing the brick on the wall simultaneously. The bricks are piled upon a Gilbreth Packet and consequently there is no hesitation at the time the bricks are picked up, for the reason that four fingers run in under the bricks on account of the peculiar construction of the packet.Chronocyclegraph of the motions of the head and two hands of an expert bricklayer laying ten bricks, one in each hand, in the new way from a packet. Note the pointed ends of the spots indicate the direction.[The upper lines show the path of the head and the lower lines show the paths of right and left hands. (or 10 bricks--one in each hand--stringing?).] GL-286 Chronocyclegraph of bricklayer reaching for one brick. It will be noticed that he did not pick up the brick and mortar at the same time and that the delay of the left hand for the brick, by reason of the right hand picking up the mortar is very noticeable and the line on the head shows that it also is affected by the delay of the left hand.GL-288 Laying one brick (old method). Showing first one hand and then the other picking up the brick and mortar.--unnecessary waiting.GL-321 Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick the old way. Note that when the brick was positioned in the hand, causes the motion of it caused stopping and starting of the right hand, the trowel and the head.GL-326 Chronocyclegraph of the motions of the head, right hand, trowel head and left hand laying one brick in the old way. Note that positioning the brick twice has twice stopped the right hand trowel and the head. This illustrates the general principle that any motion of any part of the body affects many other parts simultaneously.GL-327 Motions of head, right hand, trowel, and left hand in laying one brick by the old method. Note the left hand picking up the brick after the right hand picked up

the mortar. This can be seen due to the distance apart of the spots and of the supplementary time spot which are seen in pairs every twentieth spot. Note that the direction shown by the pointed end of the spot. Chronocyclegraph of the motions of the head, right hand, trowel and left hand laying one brick in the old way. Note that the mortar was picked up first and while the left hand waited. The right hand and trowel then waited while the left hand picked up the brick. This is what happens, when anyone, regardless whether he is bricklayer or surgeon, picks up two things nearly but not quite at the same time. For least fatigue and greatest outputs complementary motions should be performed in rhythm simultaneously. GL-332 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-336 Model showing positioning before transportation. GL-339 Motions of the head, right hand, trowel and left hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick. Chronocyclegraph of the motions of the head, right hand, trowel and left hand, laying three bricks in the old way. Note the total absence of hesitation, because both hands grasped their loads at the same time. Note also the effect in the path of the head right of the positionings of the brick. [Chronocyclegraph of bricklaying--bricks being lifted from packet to wall--light on head and hand.] GL-339 Chronocyclegraph of bricklaying. Bricks being lifted from a packet to the wall, - light on head and on hand. [Motions of head, rt. hand, trowel and lt. hand in laying three bricks in the old method. Note the effect on the head and the right hand when the left hand is flopping the brick.] GL-348 Laying three bricks (old method). GL-352 Chronocyclegraph of the head and two hands while using the fountain trowel for transporting and spreading mortar for 18 bricks. GL-353 Chronocyclegraph of head and left hand laying ten brick the new way. Note automaticity due to absence of necessity for positioning the brick. The right hand is handling the mortar, but does not show in this picture. GL-362 Chronocyclegraph of head and 2 hands using fountain trowel for transporting and spreading mortar for 18 bricks. GL-363 Chrono head, lt. & rt. hands lay one brick -- old method. Note head when mortar and brick not picked up at same time. GL-365 Bricklaying chronocyclegraph, brick being lifted from packet to wall, -light on head and hand. GL-370 Studies in bricklaying showing the motion of flopping a brick affects the motions of the trowel, hand, head and body (old method).

318949.1358 Chronocyclegraph. Not sure of what, though. Perhaps typing, with light on head and carriage return hand?, undated
Notes: Category: typing study
Gilbreth image: GL 704

318949.1359 Cyclegraph--not sure of what. GL 1733 is of Dr. Myrtelle Canavan, Assistant Pathologist of Mass., in the act of inoculating a test tube with typhoid germs. Very similar to 318949.1360, undated

Notes: Category: surgical & dental study
 Gilbreth image: GL 1730
 Related captions: GL-1733 This is the best cyclegraph that I have ever seen in my life. It is of Dr. Myrtelle Canavan, Assistant Pathologist of Mass., in the act of inoculating a test tube with typhoid germs. Note that the care with which the operation must be done has caused the motions to be identical with those that denote grace and skill shown in other pictures.

318949.1360, Cyclegraph--not sure of what. GL 1733 is of is of Dr. Myrtelle Canavan, Assistant Pathologist of Mass., in the act of inoculating a test tube with typhoid germs. Very similar to 318949.1359., undated

Notes: Category: surgical & dental study
 Gilbreth image: GL 1738
 Related captions: GL-1733 This is the best cyclegraph that I have ever seen in my life. It is of Dr. Myrtelle Canavan, Assistant Pathologist of Mass., in the act of inoculating a test tube with typhoid germs. Note that the care with which the operation must be done has caused the motions to be identical with those that denote grace and skill shown in other pictures.

318949.1361 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes: Category: fencing study
 Job name: Auergesellschaft
 Job number: 621
 Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
 "F78 Cyclegraph of the point of the rapier in fencing."
 "F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
 "F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
 "F 98 is another cyclegraph of the fence."
 "F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
 "F 107. Chronocyclegraph of expert fencer."
 "F 130. Chronocyclegraph of expert fencer."
 "F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1362 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes: Category: fencing study

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1363 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes: Category: fencing study

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1364 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes:

Category: fencing study

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

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"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1365 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the

fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes:

Category: fencing study

Job name: Auergesellschaft

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"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1366 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes:

Category: fencing study

Job name: Auergesellschaft

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"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1367 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes:

Category: fencing study

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin

318949.1368 Chronocyclegraph of a fencer. This is one of 8 images in this series, all of which are faded and not numbered (acc. no. 318949.1361-1369). All but one of the images depict the motions of a fencer who has lights attached to his thigh, knee and calf (three lines) as well as the tip of the fencing rapier. This image does not reflect forward motion however; light attached to head and fence tip. See related fencing images in the collection. These images taken in Berlin while on contract with the Auergesellschaft company, January 15-27 1915. Murero OR Neralitsch, Berlin Fencers., 1915, Jan.

Notes: Category: fencing study
 Job name: Auergesellschaft
 Job number: 621
 Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
 "F78 Cyclegraph of the point of the rapier in fencing."
 "F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
 "F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
 "F 98 is another cyclegraph of the fence."
 "F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
 "F 107. Chronocyclegraph of expert fencer."
 "F 130. Chronocyclegraph of expert fencer."
 "F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)
 Location of subject: Berlin

318949.1369 Pure chronocyclegraph. Not sure of what, though. Nearby captions suggest golf or typing; certainly does not look like the golf series. Lines are pretty scribbly; perhaps it is typing., undated

Notes: Category: misc./pure cyclegraphs or unidentified study
 Gilbreth image: 16298

318949.1370, Locomotion study , undated

Notes: Category: foot measuring study; military study; locomotion study

From the Army. Chronocyclegraph to test for a supposed malingerer's gait, taken while FBG was in the Army. There are a number of these chronocyclegraph studies of locomotion (at least 9), some of which are numbered 1700.152 (etc.) and some of which are numbered in the 18000 series, such as 18198. FBG took these as part of his shoe-fitting investigations in the military motion study laboratory. It appears lights were attached to each foot, the belt, and the head.

318949.1371 Pure chronocyclegraph, not sure of what, Long sweeping motion of five cycles., undated

Notes: Category: misc./pure cyclegraphs or unidentified study
 Gilbreth image: T 811

318949.1372 This is one of three images taken about the same time, Gilbreth image 17818 or so. One of the images (this one, acc. no. 318949.1372) shows a motion study set-up with a gridded background (dark) and a

penetrating screen and a raised platform with three Gilbreth clocks and a placard that says '105). The other images are pure chronocyclegraphs of a worker, seated, with a light at the head and light on the hands. In 1917, when the image was taken, the Gilbreths had contracts at Remington, Cluet-Peabody, and a few other places., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

318949.1373 This is one of three images taken about the same time, Gilbreth image 17818 or so. One of the images shows a motion study set-up with a gridded background (dark) and a penetrating screen and a raised platform with three Gilbreth clocks and a placard that says '105). The other images (including this one as well as 318949.1374) are pure chronocyclegraphs of a worker, seated, with a light at the head and light on the hands. In 1917, when the image was taken, the Gilbreths had contracts at Remington, Cluet-Peabody, and a few other places., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

318949.1374 This is one of three images taken about the same time, Gilbreth image 17818 or so. One of the images shows a motion study set-up with a gridded background (dark) and a penetrating screen and a raised platform with three Gilbreth clocks and a placard that says '105). The other images (including this one as well as 318949.1373) are pure chronocyclegraphs of a worker, seated, with a light at the head and light on the hands. In 1917, when the image was taken, the Gilbreths had contracts at Remington, Cluet-Peabody, and a few other places., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

318949.1375 One of two images (the other is 318949.3176) which show an executive at his office desk doing stamping. This may have been at Remington, though I am not sure., 1917

Notes: Category: office study

Gilbreth image: 1759?

Related captions: 17583 Cyclegraph of executive who keeps his rubber stamp in the upper right hand drawer of his desk. 17590 [Male (executive) wearing cyclegraph lights seated at a desk piled high with papers. Cyclegraph equipment visible off to right.]

318949.1376 One of two images (the other is 318949.1375) which show an executive at his office desk doing stamping. This may have been at Remington, though I am not sure., 1917

Notes: Category: office study

Gilbreth image: 17596

Related captions: 17583 Cyclegraph of executive who keeps his rubber stamp in the upper right hand drawer of his desk. 17590 [Male (executive) wearing cyclegraph lights seated at a desk piled high with papers. Cyclegraph equipment visible off to right.]

318949.1377 cyclegraph of measuring for shoes in army., 1918

Notes: Category: foot measuring study

Gilbreth image: 18213

Related captions: 18220 Pictures taken for the Army of modern shoe fitting methods. These Micromotion studies are now part of the standard instructions for the army. @ 18223 Micromotion studies for determining the One Best Way to fit soldiers shoes. The War Office records show that 92% of all officers and privates in the war had shoes that did not fit and the resulting studies gave less than 1 percent misfit. Pictures taken for the Army of modern shoe fitting methods. These Micromotion studies are now part of the standard instructions for the army. Motion study laboratory under direction of Col. W.O. Owen standardizing methods and motions of teaching Army Officers to fit shoes of soldiers. 18229 Pictures taken for the Army of modern shoe fitting methods. These Micromotion studies are now part of the standard instructions for the army. 18233 Motions used for fitting a shoe with the Resco shoe-fitting machine.--This and 18265 represent the new method and equal the outcome of work done in #18242. 18235 Chronocyclegraph of motions used for foot-measuring device in the One Best Way. Motion study laboratory under direction of Col. W.O. Owen standardizing methods and motions of teaching Army Officers to fit shoes of soldiers. 18236 Motion study laboratory under direction of Col. W.O. Owen standardizing methods and motions of teaching Army Officers to fit shoes of soldiers. 18238 Motion study laboratory under direction of Col. W.O. Owen standardizing methods and motions of teaching Army Officers to fit shoes of soldiers.

318949.1378 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here says 188). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C20. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.12

318949.1379 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here says 189). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C21. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study
Gilbreth image: 1700.119

318949.1380, This is one of eleven slides that the Gilbreths clearly used as a slideshow. , 1917

Notes: Category: assembly study
Gilbreth image: 1700.124

They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here says 190). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C22. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out.

318949.1381 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here says 192). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C24. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study
Gilbreth image: 1700.123

318949.1382 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here says 192). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C25. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study
Gilbreth image: 1700.121

318949.1383 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each

image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does: C29. Also, each of these slides have a Gilbreth number as well. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.136

318949.1384 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does not have a number. Also, each of these slides have a Gilbreth number as well, on the slide. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.137

318949.1385 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does not have a number. Also, each of these slides have a Gilbreth number as well, on the slide. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.138

318949.1386 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does have a number: C30. Also, each of these slides have a Gilbreth number as well, on the slide. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.139

318949.1387 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does have a number: C31. Also, each of these slides have a Gilbreth number as well, on the slide. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.144

318949.1388 This is one of eleven slides that the Gilbreths clearly used as a slideshow. They depict a woman assembling something at a workstation with a gridded background; my instinct says something having to do with buttons or collars at Cluet-Peabody in 1917, but it might be Remington. Within each image is a placard number that goes from 188 through 192 and probably higher, but cannot see (the placard number here cannot be seen). On many of the slides in the series there is a small piece of brown paper affixed to the slide which designates a number ; these numbers go from C20 through C33, though not all slides have them. This particular slide does have a number: C33. Also, each of these slides have a Gilbreth number as well, on the slide. The problem is that these slides are really really washed out., 1917

Notes: Category: assembly study

Gilbreth image: 1700.14

318949.1389 This is one of two images (the other is 318949.3190) which shows a gridded worktable with shoe parts and shoe making equipment. There is a blackboard in the photo which reads: 646 16 May '17 ball and socket holder for last, made by Reid B. Scott.' This is job 646, for U.S. Rubber., 1917, May 16

Notes: Category: shoe making study

Gilbreth image: 17443

Job name: US Rubber

Job number: 646

318949.1390 This is one of two images (the other is 318949.3189) which shows a gridded worktable with shoe parts and shoe making equipment. On the other image, there is a blackboard in the photo which reads: 646 16 May '17 ball and socket holder for last, made by Reid B. Scott.' This is job 646, for U.S. Rubber., 1917, May 16

Notes: Category: shoe making study

Gilbreth image: 17354

Job name: US Rubber

Job number: 646

318949.1391 This is one of two washed out slides that Gilbreth used as a slideshow, since they both have stickers that say B17, etc (this one is B17).

You can detect a gridded background, white with black lines, and the number on the slide (17938) suggests it was taken at Remington, around the same time Gilbreths were photographing the handicapped worker, Mr. Case: image no, 17954: Man (Mr. Case) on crutches in front of gridded background. Two motion clocks visible. But in this image, all you can see is a dim cyclograph line., March 1916-December 1917 (dates of Remington contract)

Notes: Category: misc./pure cyclographs or unidentified study

Collection: NMAH

Gilbreth image: 17938

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See also caption for 17972 (not in NMAH collection) but quite relevant here: "This picture shows Mr. Case's usual walking attitude. Note that the crutch of the right arm does not come up under the shoulder but terminates in a ring mounted on trunnions which enables him to do his work in a standing position and carry his crutch to whatever place his arm reaches. Otherwise an ordinary crutch would fall to the floor when he made free use of his arm. The other, held in the left hand, is pointed at its upper end and he uses it for pushing off his shoes and stockings." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See caption for a related image (17968): "Remarkable crutches for walking. None needed for standing. Using the arms does not necessitate dropping the crutches." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98). The caption for a related image of this subject (17966) is as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." Also, a related caption for the same subject, (17973), is as follows: Dressing comes under the Motion Study laws of assembling. This man has designed and built for himself long handle tongs for putting on his underclothes, stockings, and trousers. He has also designed and built for himself special long handled hooks

for putting on his shoes. He had to consider the motions of undressing and dressing. If you will see the motions that you take to undress yourself, you will be much surprised at what you can do to reduce the time of dressing and undressing. You should at first dress as usual, and see how long it takes you. You should then see what can be done by merely arranging all of your clothes, 1, in an obvious sequence, 2, within easy reach, 3, pre-positioned for easiest grasp, 4, arranged for ease [sic] positioning. Count every motion, and make each motion count. With a little practice you can cut your time in halves without any speeding up." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally). see Case photographs in the frontispiece and facing page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, *Motion Study for the Handicapped*, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. ne of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his infirmities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very little motion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.1392 This is one of two washed out slides that Gilbreth used as a slideshow, since they both have stickers that say B17, etc (this one is B18). You can detect a gridded background, white with black lines, and the number on the slide (17935) suggests it was taken at Remington, around the same time Gilbreths were photographing the handicapped worker, Mr. Case: image no, 17954: Man (Mr. Case) on crutches in front of gridded background. Two motion clocks visible. But in this image, all you can see is a dim cyclegraph line., March 1916-December 1917 (dates of Remington contract)

Notes: Category: misc./pure cyclegraphs or unidentified study

Collection: NMAH

Gilbreth image: 17935

Job name: Remington Typewriter Works, Illion NY (captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown 10.24.98).

Original caption: See caption for 17951 (not in NMAH collection) but which explains who the subject is: "This picture and the next two following ["17972" an "A"] are of a cripple named Case. As the result of rheumatic fever some 25 years ago he became a cripple and he has no motions whatever from his neck to his knees except in his arms. In spite of this handicap he has learned the machinist's trade and is a model maker and is one of the highest priced workers at the Remington Typewriter Works at Illion, NY He has invented crutches of a peculiar shape and tongs that enable him to dress himself and he does everything for himself that a well man can do and is well and happy. His case illustrates what perseverance will do and shows that any cripple can make good in spite of his handicap." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See also caption for 17972 (not in NMAH collection) but quite relevant here: "This picture shows Mr. Case's usual walking attitude. Note that the crutch of the right arm does not come up under the shoulder but terminates in a ring mounted on trunnions which enables him to do his work in a standing position and carry his crutch to whatever place his arm reaches. Otherwise an ordinary crutch would fall to the floor when he made free use of his arm. The other, held in the left hand, is pointed at its upper end and he uses it for pushing off his shoes and stockings." (FBG captions for glass diapositives, NF1/0019, vol. III, Purdue University, via Elspeth Brown, 10.24.98). See caption for a related image (17968): "Remarkable crutches for walking. None needed for standing. Using the arms does not necessitate dropping the crutches." (FBG, captions, NF1/0019 vol. III, Purdue University, via EHB 10.24.98). The caption for a related image of this subject (17966) is as follows: "Undressing comes under the motion study law of dis-assembling. This man has designed for himself special crutches which he uses for many different purposes. He pushes off his shoes and stockings and other clothes that he cannot otherwise reach. This picture shows him bending forward as far as he can move." Also, a related caption for the same subject, (17973), is as follows: Dressing comes under the Motion Study laws of assembling. This man has designed and built for himself long handle tongs for putting on his underclothes, stockings, and trousers. He has also designed and built for himself special long handled hooks for putting on his shoes. He had to consider the motions of undressing and dressing. If you will see the motions that you take to undress yourself, you will be much surprised at what you can do to reduce the time of dressing and undressing. You should at first dress as usual, and see how long it takes you. You should then see what can be done by merely arranging all of your clothes, 1, in an obvious sequence, 2, within easy reach, 3, pre-positioned for easiest grasp, 4, arranged for ease [sic] positioning. Count every motion, and make each motion count. With a little practice you can cut your time in halves without any speeding up." (FBG captions from Morley/NMAH files, f.888-1 Motion Study, typescript ARM 1/27/20--from Purdue, originally). see Case photographs in the frontispiece and facing

page 27 of Frank B. Gilbreth and Lillian B. Gilbreth, Motion Study for the Handicapped, (Easton PA: Hive Publishing, 1973 [1920]) with the following captions: frontispiece: "What Pluck Did for A Cripple. This man's joints solidified from his neck to his knees some years ago. He made special appliances to enable him to dress himself, and crutches for walking. ne of the latter, when reversed, is used to push off his boots, stickings, etc. In spite of his informities, he is to-day one of the most highly waged mecahnics of the Remington Typewriter Co., Ltd." And facing page 27: "Special devices for helping the handicapped. Mr. Case, whose picture is shown here, has had complete stiffening of the joints since 23 years of age. He is what is sometimes called a "hopeless case" because he has had very little use of his legs and very littlemotion in his back and neck. He has, however, invented and made for his own use special devices such as peculiar shaped crutches, long handled hooks for pullin on his shoes, and tongs for pulling on his trousers, etc. He has learned tow trades and is earning high pay as class model maker. His life is a fine example of what a cripple can do if what is left of him is of the right kind of stuff."

Location of subject: Illion, NY

Subject names: "Case", a model maker at Remington Typewriter Works, Illion NY

318949.1393 This is one of a series of four cyclegraphs (two are cyclegraphs, two are chronocyclegraphs) of a surgeon at New York hospital in 1913. This image is a cyclegraph, and looks like a tying of a knot; there is a no. 11 in the picture, which looks like the placards Gilbreth had the surgeons and staff wear., 1913

Notes:

Category: surgical & dental study

Gilbreth image: 615-127

Job name: New York Hospital

Job number: 615

Related captions: 615-113 Surgeon sewing up wound. Two and one half stitches thru the right hand; forceps holding tissue with left hand. Needle pulled thru the tissue with index and thumb of left hand.615-114 Two stitches with medium hagedorn needle and needle holder. The stitch was not tied and caught in the middle of the movement making it irregular.*615-115 Sewing with right hand. Needle passed towards operator. Forceps holding tissue in the left hand.615-115A Cyclegraph of sewing in dummy operation in surgery.Practicing surgery in dummy operations. ASewing up and abdomen.615-118 shows motion studies of surgeons performing a dummy operation in our laboratory. Note the two clocks. One revolves in three seconds and the other in one minute. By the use of two clocks we are enabled to insure having no error in the time, as it would be quite out of the question for the two clocks to be wrong and still agree. This picture shows the motions of tying a suture.*615-119 Studying signals for positioning and grasping of tools in surgery.615-120 This series are positioning and also surgery.615-121 Taking ligature from assistant and tying two

knots around artery clamp.615-122 Medium sized hagedorn needle held on the flat between thumb and middle finger. In the preceding pictures the needle was held on edge.615-122A Pictures of sewing an abdominal operation taken on a dummy operation.Operator taking clamps from assistant and placing the clamps on blood vessels.615-123 Cyclegraph of two hands of an expert surgeon on a dummy operation imitating sewing.Two and one half stitches, small hagedorn needle passed with right hand. Forceps holding tissue with left hand. Needle pulled thru tissue with index and thumb of left hand.615-128 Right hand left wound. Took sponge stick from nurse. Returned to wound. Sponged twice. Put sponge stick on tray and returned right hand to wound.615-129 Operator took gauze pad from nurse. Sponged wound. Removed pad from wound, and sponged again. Put pad on tray. All of this with right hand which then returns to wound.615-132 Chronocyclegraph of famous surgeons in their work of standardizing surgery; taking artery clamp off the artery and putting it on the tray. Takes it off with left hand.615-133 Assistant puts artery clamp on hand of operator. Operator attaches it to artery and drops it.615-134 ASignal for scissors.615-138 Signal for scissors.615-142 Motions of a doctor stitching an abdominal wound. This is not an actual operation.Motion Study in Surgery. Practice surgery on dummies. Sewing an abdomenStudies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.615-144 Studies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.

318949.1394 This is one of a series of four cyclegraphs (two are cyclegraphs, two are chronocyclegraphs) of a surgeon at New York hospital in 1913. This image is a cyclegraph, and looks like a tying of a knot; there is a no. 11 in the picture, which looks like the placards Gilbreth had the surgeons and staff wear., 1913

Notes:

Category: surgical & dental study

Gilbreth image: 615-127

Job name: New York Hospital

Job number: 615

Related captions: 615-113 Surgeon sewing up wound. Two and one half stitches thru the right hand; forceps holding tissue with left hand. Needle pulled thru the tissue with index and thumb of left hand.615-114 Two stitches with medium hagedorn needle and needle holder. The stitch was not tied and caught in the middle of the movement making it irregular.*615-115 Sewing with right hand. Needle passed towards operator. Forceps holding tissue in the left hand.615-115A Cyclegraph of sewing in dummy operation in surgery.Practicing surgery in dummy operations. ASewing up and abdomen.615-118 shows motion studies of surgeons performing a dummy operation in our laboratory. Note the two clocks. One revolves in three seconds and the other in one minute. By the use of two clocks we are enabled to insure having no error in the time, as it would

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318040.1395 This is one of a series of four cyclegraphs (two are cyclegraphs, two are chronocyclegraphs) of a surgeon at New York hospital in 1913. This image is a chronocyclegraph, and looks like the mark of the hand as it moves through space to pick something up (scissors?); there is a no. 4 in the picture, which looks like the placards Gilbreth had the surgeons and staff wear., 1913

Notes: Category: surgical & dental study

Gilbreth image: 615-135

Job name: New York Hospital

Job number: 615

Related captions: 615-113 Surgeon sewing up wound. Two and one half stitches thru the right hand; forceps holding tissue with left hand. Needle pulled thru the tissue with index and thumb of left hand.615-114 Two stitches with medium hagedorn needle and needle holder. The stitch was not tied and caught in the middle of the movement making it irregular.*615-115 Sewing with right hand. Needle passed towards operator. Forceps holding tissue in the left hand.615-115A Cyclegraph of sewing in dummy operation in surgery.Practicing surgery in dummy

operations. ASewing up and abdomen.615-118 shows motion studies of surgeons performing a dummy operation in our laboratory. Note the two clocks. One revolves in three seconds and the other in one minute. By the use of two clocks we are enabled to insure having no error in the time, as it would be quite out of the question for the two clocks to be wrong and still agree. This picture shows the motions of tying a suture.*615-119 Studying signals for positioning and grasping of tools in surgery.615-120 This series are positioning and also surgery.615-121 Taking ligature from assistant and tying two knots around artery clamp.615-122 Medium sized hagedorn needle held on the flat between thumb and middle finger. In the preceding pictures the needle was held on edge.615-122A Pictures of sewing an abdominal operation taken on a dummy operation.Operator taking clamps form assistant and placing the clamps on blood vessels.615-123 Cyclegraph of two hands of an expert surgeon on a dummy operation imitating sewing.Two and one half stitches, small hagedorn needle passed with right hand. Forceps holding tissue with left hand. Needle pulled thru tissue with index and thumb of left hand.615-128 Right hand left wound. Took sponge stick from nurse. Returned to wound. Sponged twice. Put sponge stick on tray and returned right hand to wound.615-129 Operator took gauze pad from nurse. Sponged wound. Removed pad from wound, and sponged again. Put pad on tray. All of this with right hand which then returns to wound.615-132 Chronocyclegraph of famous surgeons in their work of standardizing surgery; taking artery clamp off the artery and putting it on the tray. Takes it off with left hand.615-133 Assistant puts artery clamp on hand of operator. Operator attaches it to artery and drops it.615-134 ASignal for scissors.615-138 Signal for scissors.615-142 Motions of a doctor stitching an abdominal wound. This is not an actual operation.Motion Study in Surgery. Practice surgery on dummies. Sewing an abdomenStudies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.615-144 Studies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.

318040.1396 This is one of a series of four cyclegraphs (two are cyclegraphs, two are chronocyclegraphs) of a surgeon at New York hospital in 1913. This image is a chronocyclegraph, and looks like the mark of the hand as it moves through space to pick something up (scissors?); there is a no. 4 in the picture, which looks like the placards Gilbreth had the surgeons and staff wear., 1913

Notes:

Category: surgical & dental study

Gilbreth image: 615-137

Job name: New York Hospital

Job number: 615

Related captions: 615-113 Surgeon sewing up wound. Two and one half stitches thru the right hand; forceps holding tissue with left hand. Needle pulled thru the tissue with index and thumb of left hand.615-114 Two stitches with medium hagedorn needle

and needle holder. The stitch was not tied and caught in the middle of the movement making it irregular.*615-115 Sewing with right hand. Needle passed towards operator. Forceps holding tissue in the left hand.615-115A Cyclegraph of sewing in dummy operation in surgery.Practicing surgery in dummy operations. ASewing up and abdomen.615-118 shows motion studies of surgeons performing a dummy operation in our laboratory. Note the two clocks. One revolves in three seconds and the other in one minute. By the use of two clocks we are enabled to insure having no error in the time, as it would be quite out of the question for the two clocks to be wrong and still agree. This picture shows the motions of tying a suture.*615-119 Studying signals for positioning and grasping of tools in surgery.615-120 This series are positioning and also surgery.615-121 Taking ligature from assistant and tying two knots around artery clamp.615-122 Medium sized hagedorn needle held on the flat between thumb and middle finger. In the preceding pictures the needle was held on edge.615-122A Pictures of sewing an abdominal operation taken on a dummy operation.Operator taking clamps from assistant and placing the clamps on blood vessels.615-123 Cyclegraph of two hands of an expert surgeon on a dummy operation imitating sewing.Two and one half stitches, small hagedorn needle passed with right hand. Forceps holding tissue with left hand. Needle pulled thru tissue with index and thumb of left hand.615-128 Right hand left wound. Took sponge stick from nurse. Returned to wound. Sponged twice. Put sponge stick on tray and returned right hand to wound.615-129 Operator took gauze pad from nurse. Sponged wound. Removed pad from wound, and sponged again. Put pad on tray. All of this with right hand which then returns to wound.615-132 Chronocyclegraph of famous surgeons in their work of standardizing surgery; taking artery clamp off the artery and putting it on the tray. Takes it off with left hand.615-133 Assistant puts artery clamp on hand of operator. Operator attaches it to artery and drops it.615-134 ASignal for scissors.615-138 Signal for scissors.615-142 Motions of a doctor stitching an abdominal wound. This is not an actual operation.Motion Study in Surgery. Practice surgery on dummies. Sewing an abdomenStudies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.615-144 Studies of the motions of surgeons of the New York Hospital in our work of revolutionizing the work of surgeons.

318949.1397 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a message that reads 'Herr ??? Happy Birthday.', Dec. 4, 1914

Notes:

Category: assembly study

Gilbreth image: T252

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1398 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a message that reads 'Congratulations Herr Gruder?', Dec. 4, 1914 approx.

Notes: Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1399 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a bit of FBG, 2 clocks, and an indecipherable message., Dec. 4, 1914 approx.

Notes: Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1400, This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a bit of an unidentified man and a swirly handwriting message. On the slide someone has written TED., Dec. 4, 1914 approx.

Notes: Category: assembly study

Information on photo: TED

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1401 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a bit of an unidentified man and a handwriting message that reads 'congratulations...????', Dec. 4, 1914

Notes: Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1402 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, a camera, and a big part of the room, along with a bit of two unidentified men and a handwriting message that reads ???, Dec. 5, 1914

Notes: Category: assembly study

Gilbreth image: T309

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1403 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, a camera, and a big part of the room, along with a bit of an unidentified man and a handwriting message that reads something about Merry christmas and happy new year, in English., Dec. 1914

Notes: Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1404 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, a camera, and a big part of the room, along with a bit of two unidentified men and a handwriting message that is indecipherable., Dec. 1914

Notes: Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1405 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, and a big part of the room, along with a bit of an unidentified man and a handwriting message that says something about congratulations herr gruder ?, Dec. 4, 1914

Notes: Category: assembly study

Gilbreth image: T240

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1406 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows the grid, the big light hanging overhead, a movie camera, and a big part of the room, along with a bit of an unidentified man and a handwriting message that says something like 'Goobye Mr. ??? and Merry Christmas, F. Gilbreth 1914', Dec. 5, 1914

Notes:

Category: assembly study

Gilbreth image: T306

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1407 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan. 1915. This image shows a close-up of the background grid and the horizontal grid, and to the side a small Gilbreth clock. The handwriting message that says something like 'My best wishes to Mr. Schlupman for a Happy Christmas and a Happy New Year. Gilbreth, Berlin, 1914.', Nov. 28, 1914

Notes:

Category: assembly study

Gilbreth image: T185

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1408 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and to the side a small Gilbreth clock. The handwriting message that says something like 'Merry Christmas Herr Meir..? ..?', Nov. 28, 1914--est.

Notes:

Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1409 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This

image shows a close-up of the background grid and the horizontal grid, and a handwriting message is hard to read., 4-Jan-15

Notes: Category: assembly study
Gilbreth image: T448
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1410, This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting message is hard to read, but looks like 'Professor Unisismode in Germany, by Gilbreth Berlin ? ., January 4, 1915-est

Notes: Category: assembly study
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1411 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows the penetrating grid as transparent, so that you can see through it to the wall behind, which shows a clock etc. The handwriting is suspended in space; looks almost like a double exposure. Cannot read message., Nov. 14. 1914 est

Notes: Category: assembly study
Gilbreth image: T92
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1412 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows the penetrating grid as transparent, so that you can see through it to the wall behind, which shows a clock etc. The handwriting is suspended in space; looks almost like a double exposure. Cannot read message., Nov. 14. 1914 est

Notes: Category: assembly study
Gilbreth image: T115
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1413 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows the penetrating grid as transparent, so that you can see through it to the wall behind. The handwriting is suspended in space; looks almost like a double exposure. Message: Dr. Lowen.... I think this will be all right. Gilbreth', Nov. 14. 1914 est

Notes: Category: assembly study
Gilbreth image: T169
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1414 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting pattern that is a series of circles, not a message., January 4, 1915-est

Notes: Category: assembly study
Gilbreth image: TE1
Information on photo: TE1
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1415 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting pattern that is a series of circles, not a message., January 4, 1915-est

Notes: Category: assembly study
Gilbreth image:
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1416 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting pattern that is a series of squiggles not a message., 4-Jan-15

Notes: Category: assembly study
Gilbreth image: T445

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1417 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting pattern that is a series of grand abstract flourishes, no written message., 4-Jan-15

Notes:

Category: assembly study

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1418 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and a handwriting pattern that is a series of grand abstract flourishes, no written message., 4-Jan-15

Notes:

Category: assembly study

Gilbreth image: T475

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1419 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows the penetrating grid as transparent, so that you can see through it to space behind, where three men hover. The handwriting is suspended in space; looks almost like a double exposure. Message: 'Mr. schelesinger...', Nov. 14. 1914 est

Notes:

Category: assembly study

Gilbreth image: T178

Job name: Auergesellschaft

Job number: 621

Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."

Location of subject: Berlin

318949.1420, This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid, and to the side a small Gilbreth clock. The handwriting message that says something

like 'Director Prggm, we are ready with our motion studies..?', Nov. 28, 1914--est.

Notes: Category: assembly study
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1421 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of abstract, circular flourished; you cannot see the grid at all., 4-Jan-15

Notes: Category: assembly study
Gilbreth image: T474
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1422 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of abstract, circular flourished; you cannot see the grid at all., 4-Jan-15

Notes: Category: assembly study
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

318949.1423 This is one of a series of images that show handwriting experiments at the Auergesellschaft company in Berlin, Nov-Jan 1915. This image shows a close-up of the background grid and the horizontal grid,. The handwriting message that says something like 'Happy New Year to All My Good Friends.', Dec. 1914--est.

Notes: Category: assembly study
Job name: Auergesellschaft
Job number: 621
Related captions: T301 "Studies for demonstrating the possibilities of the penetrating screen and the cyclegraph."
Location of subject: Berlin

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Box 12, Item 38-110	Pure light cyclegraphs, undated
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Box 1, Folder 10	Book 1, Disabled study
Box 1, Folder 11	Book 1, Golfing study, undated
Box 1, Folder 12	Book 1, Light assembly study, undated
Box 1, Folder 13	Book 2, Machine shop study, undated
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Box 2, Folder 18	Duplicate photoprints (318949.0700 to 318949.0739), undated
Box 2, Folder 19	Duplicate photoprints (318949.0740 to 318949.0799), undated
Box 2, Folder 20	Duplicate photoprints (318949.0800 to 318949.0849), undated
Box 2, Folder 21	Duplicate photoprints (318949.0850 to 318949.0895), undated
Box 2, Folder 22	Duplicate photoprints (80.0785.014 to 80.0785.159), undated
Box 2, Folder 23	Duplicate photoprints (80.20595), undated

Box 2, Folder 24	Duplicate photoprints (81.5450 to 81.5452), undated
Box 2, Folder 25	Duplicate photoprints (85.122), undated
Box 2, Folder 26	Duplicate photoprints (88.17952), undated
Box 2, Folder 27	Duplicate photoprints (89.1258 to 89.1276), undated
Box 2, Folder 28	Duplicate photoprints (89.11378 to 89.11402), undated
Box 2, Folder 29	Duplicate photoprints (89.12391 to 89.12396), undated
Box 2, Folder 30	Duplicate photoprints (89.14252), undated
Box 2, Folder 31	Miscellaneous (unidentified), undated

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Series 4: Stereo Autochromes, undated

Box 14, Folder 1-5	Unidentified, undated
Box 15, Folder 1-6	Unidentified, undated
	<p>318949.0502 LMG sitting on rail of deck or porch and reading a book, wooded hill in background. Taken at Inverness CA, her parents' summer home., undated</p> <p>Notes: Card Number: 781 Category: Gilbreth Family Copy negative: 93-5128</p>
	<p>318949.0503 Two dolls placed on table top with flowers in background., undated</p> <p>Notes: Card Number: 673 Category: misc.views Copy negative: 93-5141</p>
	<p>318949.0504 Lillian Gilbreth sitting on a chair on a porch holding and infant (possibly Bill), Frank Jr. in sailor suit on her right, Ernestine partially behind her. At Buttonwoods, RI, c. 1914., undated</p> <p>Notes: Card Number: 654 Category: Gilbreth Family Copy negative: 93-5127</p>
	<p>318949.0505 Frank, two adults, and four kids at shore, Buttonwoods RI c. 1913. Adults: woman on left in blue scarf could be Carol Cross, and the other woman her mother Anne Cross (Frank's sister). The kids: left to right: Ernestine; ??; Frank Jr. and Martha., undated</p> <p>Notes: Category: Gilbreth Family Copy negative: 93-5925</p>
	<p>318949.0506 Frank Gilbreth and four children standing on grass with water in background. Three childre are wearing swimsuits., undated</p> <p>Notes: Card Number: 658 Category: Gilbreth Family Copy negative: 93-5132</p>
	<p>318949.0506 Frank Jr and 2 sisters at the RI shore in c. 1916 (at Buttonwoods, RI). In background on left: Ernestine or Anne with Martha, and flags., undated</p> <p>Notes: Category: Gilbreth Family Copy negative: 93-5132</p>
	<p>318949.0507 Anne Gilbreth at beach holding flag c. 1916, Buttonwoods, RI., undated</p> <p>Notes: Card Number: 852</p>

Category: Gilbreth Family

Copy negative: 93-5118

318949.0508 Frank, holding flag, and four kids at shore, Buttonwoods, RI c. 1916. Kids left to right: Frank, Ernestine, ??, Martha., undated

Notes: Category: Gilbreth Family

Copy negative: 93-5929

318949.0509 Martha Gilbreth holding two American flags that are steaming in the wind. Buttonwoods, RI c. 1915-1916, undated

Notes: Card Number: 660

Category: Gilbreth Family

Copy negative: 93-5145

318949.0510 Interior of house, china cabinet prominently featured., undated

Notes: Card Number: 666

Category: misc.views

Copy negative: 93-5133

318949.0511 Backyard scene showing tulip garden, fence and neighbors house., undated

Notes: Card Number: 667

Category: misc.views

Copy negative: 93-5119

318949.0512 Either Ernestine or Anne Gilbreth, holding flag, shore scenery behind her. At Buttonwoods, RI in c. 1915-1916., undated

Notes: Card Number: 656

Category: Gilbreth Family

Copy negative: 93-5131

318949.0513 Male child in sailor suit (Frank Jr.) and female child (Lillian) sitting on Lillian Gilbreth's lap. Lillian is sitting on a chair on a porch at summer house in Buttonwoods, RI. c. 1915., undated

Notes: Card Number: 853

Category: Gilbreth Family

Copy negative: 93-5120

318949.0514 View of city take from a 2nd or 3rd floor window. Large house in foreground., undated

Notes: Card Number: 665

Category: misc.views

Copy negative: 93-5134

318949.0514 View of city take from a 2nd or 3rd floor window. Large house in foreground., undated

Notes: Card Number: 668

Category: misc.views

Copy negative: 93-5121

318949.0515 Frank Gilbreth sitting on porch of seaside house at Buttonwood RI, c. 1915., undated

Notes: Card Number: 659
Category: Gilbreth Family
Copy negative: 93-5136

318949.0516 Lillian Gilbreth and five children on porch. From left to right: Ernestine; Lillian in LBG's lap; Frank Jr.; Anne standing in rear, and in front of her, Martha. Buttonwoods RI seaside house, c. 1915-1916., undated

Notes: Card Number: 651
Category: Gilbreth Family
Copy negative: 93-5122

318949.0517 Portrait of three female children in seaside setting: from left to right, Martha, Anne, Ernestine. c. 1914., undated

Notes: Card Number: 676
Category: Gilbreth Family
Copy negative: 93-5125

318949.0518 Frank Gilbreth holding child, three children, one unidentified female adult, all standing in front of water. From left to right the adults are: FBG and perhaps his sister Anna Cross. The kids left to right are: Bill (held by FBG); Anne; Martha; Frank Jr., undated

Notes: Card Number: 661
Category: Gilbreth Family
Copy negative: 93-5138

318949.0519 Lillian Gilbreth and five children on a porch. From left to right: Ernestine; Frank Jr.; Anne (in back); Martha. On porch of summer house at Buttonwoods, RI. Emulsion loss in center of both images., undated

Notes: Card Number: 653
Category: Gilbreth Family
Copy negative: 93-5126

318949.0520 Pyramid of eight children holding American flags in seaside setting., undated

Notes: Card Number: 662
Category: Gilbreth Family
Copy negative: 93-5139

318949.0521 Three female children and one male child holding American flags. Automobile and shore scenery in background. From left to right children are: Ernestine, Anne, Frank Jr., and Martha., undated

Notes: Card Number: 860
Category: Gilbreth Family
Copy negative: 93-5135

318949.0522 Lillian Gilbreth and two children on porch. Children are probably Frank Jr. and Bill, so date would be c. 1914; at Buttonwoods RI? Left side of plate is broken, undated

Notes: Card Number: 790
Category: Gilbreth Family
Copy negative: 93-5123

318949.0523 Interior of house showing piano and wicker table. See 318949.0522. I think this is the interior of the Buttonwoods RI house [EB]., undated

Notes: Card Number: 672
Category: Gilbreth Family
Copy negative: 93-5137
Location of subject: Buttonwoods, RI?

318949.0524 Family standing in seaside setting, Frank, Lillian, two unidentified females, four children, and one infant. From left to right back row: I think it's FBG; Anne Cross (his sister); Carol Cross (her daughter); LMG holding Bill; in front row left to right: Martha, Anne, Ernestine, and Frank Jr., 1914

Notes: Card Number: 877
Category: Gilbreth Family
Copy negative: 93-5140
Location of subject: Buttonwoods RI

318949.0524 Family standing in seaside setting. Frank, Lillian, two unidentified adult females, four children, and an infant., undated

Notes: Card Number: 675
Category: Gilbreth Family
Copy negative: 93-5124

318949.0525 Overall view of 1915 Panama Pacific Exposition (?) showing grounds and several large buildings., 1915 (?)

Notes: Card Number: 670
Category: 1915 Panama-Pacific Exposition
Copy negative: 93-5142

318949.0525 Exterior stereo view of PPIE, undated

Notes: Category: scenic view
Copy negative: 93-5124

318949.0526 Exterior stereo view of PPIE; Palace of Fine Arts in background., undated

Notes: Category: 1915 Panama-Pacific Exposition
Copy negative: 93-5928

318949.0528 Rose arbor over entrance to house., undated

Notes: Card Number: 669

Category: misc.views

Copy negative: 93-5143

318949.0529 Rose arbor by entrance to house, undated

Notes: Card Number: 663

Category: misc.views

Copy negative: 93-5130

318949.0530 View of walkways and pavilion buildings of 1915 Panama Pacific Exposition (?), undated

Notes: Card Number: 671

Category: 1915 Panama-Pacific Exposition

Copy negative: 93-5144

318949.0530 stereo exterior view of PPIE grounds, 1915

Notes: Category: 1915 Panama-Pacific Exposition

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Series 5: Stereograph Cards, 1911-1914

Box 17	Cyclegraphs
Box 17	Signage
Box 17	Storage and Stacking
Box 17	Machinery
Box 17	Assembly boards
Box 18	Furniture
Box 18	Motion subjects (female)
Box 18	Construction
Box 18	Frank Gilbreth, Gilbreth Family and friends
Box 18	Miscellaneous (unidentified)

1980.0785.204 Pure chronocyclegraph. One half of an unmounted stereo view. On the back of the photograph are the numbers '3 100,' the signature 'Gilbreth,' and the word 'Surgery' stamped in small letters., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30102

Gilbreth image: 618-G66

Information on photo: 618-G66

1980.0785.011 Five standing laborers mixing motar (?) Two wheelbarrows and three shovels visible., 6-Apr-11

Notes: Card Number: 35

Category: bricklaying study

Copy negative: 93-2608

Information on photo: 601-154

1980.0785.011 Five male laborers mixing concrete (?), Apr. 6, 1911

Notes: Card Number: 90

Category: bricklaying study

Copy negative: 93-

Information on photo: 601-154Apr 6 - 11

1980.0785.012 One mason laying a brick wall while a helper delivers bricks. Bricks are in packets and motar mpan sits on a stand to reduce bending for the mason., Mar. 3, 1911

Notes: Card Number: 388

Category: bricklaying study
Copy negative: 93-2620
Information on photo: 601-79

1980.0785.012 Two masons building a brick wall. Packets for bricks and booster for mortar pans visible., 3-Mar-11
Notes: Card Number: 342
Category: bricklaying study
Copy negative: 93-
Information on photo: 601-79Mar. 3-11

1980.0785.014 Construction site showing ramp up into scaffolding., undated
Notes: Card Number: 426
Category: bricklaying study
Copy negative: 93-2616

1980.0785.014 Construction project showing scaffolding ramp to get materials up into scaffolding., undated
Notes: Card Number: 549
Category: bricklaying study
Copy negative: 93-

1980.0785.016 Stereo pair of 15 motion picture frames contact printed on a stereo card. Images show male wiping bars of soap (?) to be packed. Gridded background., undated
Notes: Card Number: 388
Category: stacking & packing study
Copy negative: 93-2621

1980.0785.016 Male packing soap (?). Micromotion example. Stereo card with fifteen 16mm motion picture frames contact printed. Two motion clocks visible., undated
Notes: Card Number: 544
Category: Misc. or Unidentified study
Copy negative: 93-

1980.0785.018 Male drill press operator wear a cyclegraph light harness. Three other males watch., 1912-1913
Notes: Card Number: 31
Category: machine shop study
Copy negative: 93-2611
Gilbreth image: 610-G37
Job name: New England Butt Company
Job number: 610
Original caption: "This shows Mr. Whitaker, Mr. Spinney and Tommy Perrotti having their pictures taken in 1913 at the beginning of the work." Drill Press captions, NFile 1/0019, vol. 1

part 1 of 2, p. 17. [note that there are four people in the picture, though].

Related captions: "This series started in 1912 [1913?] and continued from time to time until 1915. The original conditions required a fast workman nine and one-half seconds for all the motions necessary to countersink a hole on a latch handle for a braider, and more often the time was fifteen seconds than nine and a half, the best times that we found, being nine and one half seconds, which was eventually reduced to four and one half seconds. The toteboxes were supported by any means whatever without any attempt at standard location, and the piece was usually picked up in the left hand and countersunk, and then passed to the right hand, which threw it on the right hand side, while the left hand proceeded to pick up another piece." Drill Press captions, NFile 1/0019, vol. 1 part 1 of 2, p. 1."

The adaptation of these cyclegraphs to the work has resulted in some of the most unexpected economies, not the least of which are the direct results of invention, which is suggested as a direct result and also as a byproduct of this method of visualization, analysis, and measurement. In 1913 I took a number of records of different kinds of workmen operating a drill press. The operation consisted of drilling cast iron latch handles for braiders manufactured by the New England Butt Company. The usual thought in connection with such work is that the material should go into one side of the machine and come out the other end. The investigation proved this a mistake, and that instead of having the thought of a continuous straight line moving the thought should be the functionalization of the hands.. 610-G148 is a cyclegraph of an operation on these latch handles. The man is one of the most expert workmen in the entire factory, and his function is that of a teacher. He is also a man who sees that the various machines run at the speed called for by the planning department. BNote in this picture that the portion of the cyclegraph that jumps up in the air is coincident with the dropping of the finished latch handle into the box the line is very wavy, and after it is dropped, the line is quite as straight. The man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, and he has had but one short practice in making decisions, and you will, therefore, notice that the light at the bottom of the cyclegraph, where he picks up the latch handle, shows a mental process similar to the traditional animal between the two bales of hay, and starved to death because he could not decide upon the sequence in which he should eat the bales of hay. Here is apparently great indecision, although there is no reason whatever for choice. This same indecision is shown in all the pictures of this man taken at this time, but was afterwards completely removed, as is shown in photographs taken of the same man on the same operation a few hours, a few days, and also a year later. Examination of these cycles immediately suggested that the length of motions should be reduced by having a higher table, and such a table was temporarily secured by bolstering up

the totebox as shown in 610-G37. Still further examination of these cyclegraphs showed that the orbit could be very much reduced by having the incoming latch handles in a box that tilted about thirty degrees toward the operator, this, because the latch handles should always slide to the lower end of the box so that they can be found in a constant location without calling for the eye as well as than hand of the worker to find them. Immediately after the hole was countersunk the fingers opened, and it catapulted sideways down the inclined table in use, and into a box on the floor. This cut the time of the operation from approximately nine seconds to four and three quarters seconds with much less fatigue to the workman. The arc of light running in the direction of the upper left hand corner from the visor of the worker's cap shows the light on the finger of the right hand which operates the lever of the drill press. This is shown in 610-G146." Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Photographs sent to Mr. Robert Moulton; typescript MG 1/30/15.

"610-G131. This picture is a double cycle of the speed boss at the New England Butt Company. This picture is interesting for several reasons. One is as follows: The cycles are almost exactly alike. The dropping of the latch handle makes the same upward wave in each one, and the upward course of the motion shows the extreme evenness of great skill and practice, and the downward course shows the unevenness that attends mental operations, such as attention and decision. It will be seen that up to the time that he drops this into the box the line is very wavy, and, after they are dropped, the line is quite as straight as the upward curve. This man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, but he has had short practice in making decisions.....[repeats above anecdote about hay]" Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Pictures sent to Mr. Lewis Ellison; typescript MG 12/9/15

Location of subject: New England Butt Company, Providence, RI

Subject names: Mr. Whitaker, Mr. Spinney, and Tommy Perroti. The man at press: either Tommy Perroti or John Alrich. NF 1/0019 vol. 1, part 1 of 2.

1980.0785.018 Male drill press operator shown with lights for making cyclegraphs attached to his arm. Three men visible in background. Note that the latch handle boxes are on the same level, not tilted, on the same side., 1913

Notes:

Card Number: 93

Category: assembly study

Copy negative: 93-

Gilbreth image: 610-G37

Information on photo: 610-G37

Job name: New England Butt Company

Job number: 610

Original caption: "This shows Mr. Whitaker, Mr. Spinney and Tommy Perrotti having their pictures taken in 1913 at the beginning of the work." Drill Press captions, NFile 1/0019, vol. 1 part 1 of 2, p. 17. [note that there are four people in the picture, though].

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"The adaptation of these cyclegraphs to the work has resulted in some of the most unexpected economies, not the least of which are the direct results of invention, which is suggested as a direct result and also as a byproduct of this method of visualization, analysis, and measurement. In 1913 I took a number of records of different kinds of workmen operating a drill press. The operation consisted of drilling cast iron latch handles for braiders manufactured by the New England Butt Company. The usual thought in connection with such work is that the material should go into one side of the machine and come out the other end. The investigation proved this a mistake, and that instead of having the thought of a continuous straight line moving the thought should be the functionalization of the hands.. 610-G148 is a cyclegraph of an operation on these latch handles. The man is one of the most expert workmen in the entire factory, and his function is that of a teacher. He is also a man who sees that the various machines run at the speed called for by the planning department. BNote in this picture that the portion of the cyclegraph that jumps up in the air is coincident with the dropping of the finished latch handle into the box the line is very wavy, and after it is dropped, the line is quite as straight. The man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, and he has had but one short practice in making decisions, and you will, therefore, notice that the light at the bottom of the cyclegraph, where he picks up the latch handle, shows a mental process similar to the traditional animal between the two bales of hay, and starved to death because he could not decide upon the sequence in which he should eat the bales of hay. Here is apparently great indecision, although there is no reason whatever for choice. This same indecision is shown in all the pictures of this man taken at this time, but was afterwards completely removed, as is shown in photographs taken of the same man on the same operation a few hours, a few days, and also a year later.

Examination of these cycles immediately suggested that the length of motions should be reduced by having a higher table, and such a table was temporarily secured by bolstering up the totebox as shown in 610-G37. Still further examination of these cyclegraphs showed that the orbit could be very much reduced by having the incoming latch handles in a box that tilted about thirty degrees toward the operator, this, because the latch handles should always slide to the lower end of the box so that they can be found in a constant location without calling for the eye as well as than hand of the worker to find them. Immediately after the hole was countersunk the fingers opened, and it catapulted sideways down the inclined table in use, and into a box on the floor. This cut the time of the operation from approximately nine seconds to four and three quarters seconds with much less fatigue to the workman. The arc of light running in the direction of the upper left hand corner from the visor of the worker's cap shows the light on the finger of the right hand which operates the lever of the drill press. This is shown in 610-G146." Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Photographs sent to Mr. Robert Moulton; typescript MG 1/30/15.

"610-G131. This picture is a double cycle of the speed boss at the New England Butt Company. This picture is interesting for several reasons. One is as follows: The cycles are almost exactly alike. The dropping of the latch handle makes the same upward wave in each one, and the upward course of the motion shows the extreme evenness of great skill and practice, and the downward course shows the unevenness that attends mental operations, such as attention and decision. It will be seen that up to the time that he drops this into the box the line is very wavy, and, after they are dropped, the line is quite as straight as the upward curve. This man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, but he has had short practice in making decisions.....[repeats above anecdote about hay]" Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Pictures sent to Mr. Lewis Ellison; typescript MG 12/9/15

Location of subject: New England Butt Company, Providence RI

Subject names: Mr. Whitaker, Mr. Spinney and Tommy Perrotti

1980.0785.030 Two females seated at benches with gravity chutes feeding reams of paper (?) to them. (Reverse of card has image also.), undated

Notes:

Card Number: 420

Category: stacking & packing study

Copy negative: 93-2609

1980.0785.030 Two female workers folding handkerchiefs (?). Specially design ramps for feeding the work are visible. [image on reverse of card], undated

Notes:

Card Number: 91

Category: Packing study

Copy negative: 93-

Job name: HA

1980.0785.036 Work bench and packet board for assembly of braider.
Arrangement of packet final assembly 12str no 2 braider, New England Butt, Co. Gridded floor and background., Oct. 18, 1912

Creator: W.G. Le Boeuf, George

Notes: Card Number: 477

Category: light assembly study

Copy negative: 93-2619

Gilbreth image: 1054

Information in photo: 1054Arrangement of packet final assembly 12str no 2 braider, New England But, Co., by W.G. Le Boeuf

Job name: New England Butt Company, Providence RI

Job number: 610

Related captions: general information about the series: "142, 157, 1042 show three different types of braiders made at the New England Butt Company of Providence, R.I. Braiders similar to these are used for such work as making braid for ladies' dresses, show strings, window cord, clothes lines, braided straw for hats, insulated and other coverings for wires, etc. It was on these vraidiers that we developed our micro-motion process of determining methods of least waste. In spite of the fact that the method of least waste never lies in the consecutive acts of any one person with our micro-motion process we are able to select the motions of least waste and synthesize them into a standard cycle to be followed as nearly as the peculiarities of the individual will permit." (NF 1/0019 vol. III, GPP).

regarding the packet and the bench:"1053. This picture shows the Gilbreth table which is made for assemblies. It permits a truck to run under it and pick it up, whether standing on end or lying on its side. This means that assemblies can be made on this table, and the move man can transport whatever is set up on top of the table from the assembly room station to the place the machine is tested, and from there to the place where it is painted, without detatching it from the truck." (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American. (Morley/NMAH 816-181).

610-1056. Assembling upper works of a braiding machine. The component parts and sub groups of the upper works are arranged in an obvious sequence on a vertical packet. The carriers which hold the bobbins are arranged on a gravity packet so that they will slide down hill automatically as fast as the lower carrier is removed by the assembler. (Motion Study folder, from Morley/NMAH, f. 888-1.)

1219. shows the arrangement of parts for assembling base group of a 13-strand braider [note: image shows a 13 string braider]of the New England Butt Co. This shows a Gilbreth bench and a Gilbreth packet, with the parts for assembly

arranged in the standard method, and determined by their sequence, and with the greatest speed and facility in picking up. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American, (Morley/NMAH 816-181)). 1219 shows the Gilbreth table used in connection with the Gilbreth packet, the universal packet for assembling. It is made of pieces of wood approximately two inches by seven-eighths of an inch, arranged vertically and horizontally with holes for removable pins located at each intersection of the vertical and horizontal strips. There are also various kinds of clamps and tables that can be attached to this packet with one motion of the hand. The loading of the packet is done by a supply boy who can fill up or load a complete packet with our standard truck and other devices in less than a minute, and saves much more that time of the high-priced assembler. The parts are arranged in the sequence of picking up in order to eliminate the time, effort and fatigue of making a decision as to which piece should be selected." (NF1/0019 vol. III, GPP).

"1020 shows the "Gilbreth" table standing in its higher position, and 1059 shows the table laid down in its lower position. This table is particularly adapted for a work bench or table where it is desired to have two different heights for different kinds of work. The table can be picked up with a booster truck in either position simply by operating the lever of the booster truck and without touching the table at all. 1049 shows the table used in its low position for holding up an inward totebox thus enabling the workman to use the shortest motions in reaching for materials to be used in the machine." (GPP NF 1/0019 vol. III).

"1241 shows a Gilbreth packet, a Gilbreth bench, and a Johnson-Littlefield carrier-packet arranged for the assembly of a 13-string braider at the new England Butt Company, Prov., R.I. (Descriptions of photographs sent to Mr. A Russell Bond, Scientific American (816-181))."

"1239 shows the rigging of a typical Gilbreth packet, as used for the assembly of braiders and cord machines at the new England Butt Co. This picture shows the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed, and are arranged for picking up parts with both hands, simultaneously, and in an obvious sequence. Much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are so arranged in an obvious sequence on this packet, such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand, or in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one-half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work. (Descriptions

of photographs sent to Mr. A Russell Bond, Scientific American 816-181, Morley/NMAH)."

"610-267. This shows a typical "Gilbeth" packet, as used for the assembly of braiders and cord machines at the New England Butt Company. This picture shows only the supporting devices. The length of the supporting device is determined by what is to be held upon them. They are standardized and are but few in number. They are specially designed and arranged for picking up parts with both hands, simultaneously in an obvious sequence. In other words, we have all heard of the jackass who starved to death before he could decide which of the two bales of hay to eat first. And so it is with all of us in our daily pursuits and vocations. While we do not have to wait quite as long to decide as did the jackass, nevertheless, much time is wasted every day by all of us in making useless decisions every time a motion is made. Here we have endeavored to standardize certain practical ones for all, and the parts are arranged in an obvious sequence on this packet; such, for example, as beginning at the lower left hand corner and running horizontally on the lower board, picking up each piece in its turn, if with one hand; or, in pairs with both hands. For example, some of the rods will be seen as being suitable for holding eight, one half inch, hexagonal nuts. These can then be picked up eight at a time with each hand, and right side up for ambidextrous work." (NF 1/0019 vol. III, typescript MG 6/7/16, description of pictures sent to Mr. Engel, GPP, pg. 1).

Location of subject: New England Butt Company, Providence RI

1980.0785.074 Gilbreth designed chair, undated

Notes: Card Number: 57

Category: ergonomics

Copy negative: 93-2613

1980.0785.074 Chair designed to reduce fatigue, undated

Notes: Card Number: 552

Category: ergonomics

Copy negative: 93-

1980.0785.077 Office with three gridded desks. Image annotated standard desks and standard desk equipment of our staff. Note the Andree pencil holder. Piling-up board in the background. Sub-functional chart in the background to the extreme right., 25-Apr-14

Notes: Card Number: 53

Category: office study

Copy negative: 93-2617

Information in photo: 39622

1980.0785.077 Office showing three gridded desks. Standard desks and standard desk equipment of our staff. Note the Andree pencil holder. Piling

up board in the background. Sub-functional chart in the background to the extreme right., Apr. 25, 1914

Notes: Card Number: 92
Category: office study
Copy negative: 93-
Information in photo: 3925-4-14622

1980.0785.095 Image annotated Block Model. This is the first step in visualizing the problem. I shall have elevations of the buildings (drawings or blue prints) pasted on the outside when they get around to it. It is for the vertical visualization where the route model is for horizontal visualization. The tall building is 12 stories high., 25-Apr-14

Notes: Card Number: 397
Category: business and apparatus of motion study
Copy negative: 93-2614
Information in photo: 4/14/3725
Information on photo: (see above)

1980.0785.096 The card is captioned - Block model. This is the first step in visualizing the problem. I shall have elevations of the buildings (drawings or blue prints) pasted on the outside when they get around to it. It is for the vertical visualization where the route model is for horizontal visualization. The tall building is 12 stories high., Apr. 25, 1914

Notes: Card Number: 551
Category: Misc.
Copy negative: 93-
Information in photo: 4/14/3925

1980.0785.101 Planning department job board - many spindles with job tickets on different spindles marked with status of job, ie jobs at machine ready to be done., undated

Notes: Card Number: 422
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 93-2615

1980.0785.101 Rack of job cards, undated

Notes: Card Number: 550
Category: Factory documentation
Copy negative: 93-

1980.0785.104 route model of factory leaning up against a gridded wall., Sept. 16, 1912

Notes: Card Number: 29
Category: business and apparatus of motion study
Copy negative: 93-2618
Information in photo: Route model photo no. 135 by W.G. Le Boeuf

1980.0785.104 Route model for planning production flow of materials at New England Butt Co., Sept. 16, 1993

Notes: Card Number: 91
Category: Factory documentation
Copy negative: 93-
Information in photo: Route model, photo no. 135, by W.G. Le Beouf.

1980.0785.106 Bar chart of time to fold handkerchieves (?). [not a stereo image], undated

Notes: Card Number: 33
Category: business and apparatus of motion study
Copy negative: 93-2610

1980.0785.106 Simultaneous motion chart for folding of handkerchiefs. (this is a single copy photo mounted on stereo card stock.), undated

Notes: Card Number: 15
Category: Misc.
Copy negative: 93-
Job name: HA

1980.0785.107 Chronocyclegraph of a female figure folding pieces of cloth against a gridded background. A slate reading "Photo Number 125, HFK No. 3445" is in the foreground. In the background a partially visible slate reads: 'Esther Les???, Oct 10 (?) '13, 10X10 Fold.', October 10 (?), 1913

Notes: Category: handkerchief folding study
Copy negative: 99-30000
Gilbreth image: 125
Information in photo: ESTHER LES???OCT 10 '13 10X10 FOLD PHOTO NUMBER 125HFK NO 3445
Job name: Herrmann-Aukam Co.
Job number: 613
Original caption: 125 is a chronocyclegraph of the motions of the best worker in folding cloth in a textile factory.
Location of subject: South River NJ or Lebanon, PA
Subject names: Esther Lesley

1980.0785.109 Chronocyclegraph of a woman folding handkerchiefs on a wood table. A female figure is partially visible in the background., c. Fall 1913

Notes: Category: handkerchief folding study
Copy negative: 99-30001
Gilbreth image: 618-G71-D
Information on photo: 618-G71-D
Job name: Herrmann-Aukam Co.
Job number: 618
Original caption: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This

picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4]618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.110 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., Fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30002

Gilbreth image: 618-G70-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of Ahabit is very clearly shown. 618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1. 618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times,- or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.110 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., undated

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30002

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions

are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less hitchy and the more even the acceleration and retardation in the time between spots. Shows folding a piece of cloth with 16 motions. 618-G69-2 Motions of the two hands of an expert girl folding handkerchiefs. oCorrect motions of an expert worker folding square pieces of cloth in a textile factory. oLeft side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill. 618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory. 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.111 Chronocyclegraph of a person moving pieces of cloth on a wood table. A female figure is partially visible in the background., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30003

Gilbreth image: 618-G71-C

Information on photo: 618-G71-C

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle.

This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle.

"Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4]618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.112 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible in the background. A hand against a checkered curtain and a rough brick wall are also visible in the background. Probably 10 cycles. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30004

Gilbreth image: 618-G70-4

Information on photo: 618-G70-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: "Shows an operator folding square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NF 01/0019 v.1). 618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown. 618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1.618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times, or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.113 Seated male (?) folding (?) unidentified material., undated

Notes: Card Number: 34

Category: stacking & packing study

Copy negative: 93-2607

1980.0785.113 Cyclegraph of female (?) worker doing light assmbly (?) work., undated

Notes: Card Number: 88

Category: Light assembly study

Copy negative: 93-

1980.0785.114 Chronocyclegraph of a person moving pieces of cloth on a wood table. A female figure is partially visible in the background., c. fall 1913

Notes: Category: handkerchief folding study

Copy negative: 99-30005

Gilbreth image: 618-G71-C

Information on photo: 618-G71-C

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show

in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4]618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.115 Chronocyclegraph of a person moving pieces of cloth on a wood table. A female figure is partially visible in the background., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30006

Gilbreth image: 618-G71-C

Information on photo: 618-G71-C

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given

the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4]618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.116 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30007

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less

hitchy and the more even the acceleration and retardation in the time between spots. Shows folding a piece of cloth with 16 motions. 618-G69-2 Motions of the two hands of an expert girl folding handkerchiefs. oCorrect motions of an expert worker folding square pieces of cloth in a textile factory. oLeft side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill. 618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory. 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.116 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30007

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less hitchy and the more even the acceleration and retardation in the time between spots. Shows folding a piece of cloth with 16 motions.

618-G69-2 Motions of the two hands of an expert girl folding handkerchiefs. "Correct motions of an expert worker folding square pieces of cloth in a textile factory." Left side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill.

618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory.

618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.117 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are partially visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30008

Gilbreth image: 618-G70-4

Information on photo: 618-G70-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: "Shows an operator folding square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NF 01/0019 v.1).618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown.618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1.618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times,- or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.118 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. Two young males are present in the background and one is holding up a slate which reads: 'WITHOUT MARKED STEELS.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'marked steel' means, but at this point Gilbreth was working on

the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., c. October 18, 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30009

Information in photo: WITHOUT MARKED STEELS

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

1980.0785.119 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30010

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less hitchy and the more even the acceleration and retardation in the time between spots. Shows folding a piece of cloth with 16 motions.

618-G69-2 Motions of the two hands of an expert girl folding handkerchiefs. "Correct motions of an expert worker folding square pieces of cloth in a textile factory." Left side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill.

618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory.

618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.120 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30011

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less hitchy and the more even the acceleration and retardation in the time between spots. Shows folding a piece of cloth with 16 motions. 618-G69-2 Motions of the two hands of an expert

girl folding handkerchiefs.oCorrect motions of an expert worker folding square pieces of cloth in a textile factory.oLeft side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill. 618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory.618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.121 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., Fall, 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30012

Gilbreth image: 618-G69-4

Information on photo: 618-G69-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Related captions: 618-G69-1 Motions of an expert worker, folding handkerchiefs. It will be noted that the motions of skill or super-practice are invariably smooth and the acceleration and retardation at the turning point in the path of the motions are gradual and they're not jumpy, junky paths as shown by the amateurs and beginners. We have also noticed that the more highly educated the operator is, such, for example, as in the cases of women college graduates who have been set to work in the laboratory at the tasks of the factory workers the more smooth the curves of the cyclegraph and the less hitchy and the more even the acceleration and retardation in the time between spots.Shows folding a piece of cloth with 16 motions.618-G69-2 Motions of the two hands of an expert girl folding handkerchiefs.oCorrect motions of an expert worker folding square pieces of cloth in a textile factory.oLeft side view of girl folding handkerchief after she was taught. Note that the lines of spots have all the indications of skill. 618-G69-3 Chronocyclegraph of motions of the most expert folder in a textile factory.618-G69-4 Inexperienced operator (in 618-G68-4) after one hour of training in our method.

Location of subject: South River NJ or Lebanon, PA

1980.0785.122 Chronocyclegraph of a person moving pieces of cloth. A motion clock is partially visible. A checkered curtain and a rough stone wall are visible in the background., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30013

Gilbreth image: 618-G68-4

Information on photo: 618-668-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: "Shows an operator making more than one hundred and fifty motions in folding one piece of cloth that should have been done with sixteen motions." (From the Purdue Archives, NF 01/0019 v.1)."

"Shows an operator making more than 150 motions in folding one piece of cloth that should be done with 16 motions. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion." (From the Purdue Archives, NF 01/0019 v.1).

Location of subject: South River NJ or Lebanon, PA

1980.0785.123 Chronocyclegraph of a woman folding handkerchiefs.

A motion clock i1980.0785.123 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method.s partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30014

Gilbreth image: 618-G70-4

Information on photo: 618-G70-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: "Shows an operator fodling square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NF 01/0019 v.1).618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown.618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The

single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1.618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times,- or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.124.a Chronocyclegraph of a person moving pieces of cloth against a gridded background., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30015

Information on photo: G78-G27

Job name: Herrmann-Aukam Co.

Job number: 618

Location of subject: South River NJ or Lebanon, PA

1980.0785.124.b Chronocyclegraph of a person moving pieces of cloth against a gridded background., c. fall 1913

Notes: Category: handkerchief folding study

Copy negative: 99-30016

Job name: Herrmann-Aukam Co.

Job number: 618

Location of subject: South River NJ or Lebanon, PA

1980.0785.125.a Chronocyclegraph of a female folding pieces of cloth against a gridded background. Terrible condition., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30017

Job name: Herrmann-Aukam Co.

Job number: 618

Location of subject: South River NJ or Lebanon, PA

1980.0785.125.b Chronocyclegraph of a female folding pieces of cloth against a gridded background. A slate in the foreground reads 'Photo Number 115, HFK NO 3445.' In the background a partially visible slate reads

'Esther Les??? Oct 10 (?) '13, 10X10 Fold' The subject, Esther Lesley, is an experienced worker., 10-Oct-13

Notes: Category: handkerchief folding study
Collection: NMAH
Copy negative: 99-30018
Gilbreth image: 618-G-115
Information in photo: ESTHER LES??? OCT 10 (?) '13 10X10 FOLD PHOTO NUMBER 115HFK NO 3445
Job name: Herrmann-Aukam Co.
Job number: 618
Related captions: 125 is a chronocyclegraph of the motions of the best worker in folding cloth in a textile factory.
Location of subject: South River NJ or Lebanon, PA
Subject names: Esther Lesley

1980.0785.126.a Chronocyclegraph of person moving pieces of cloth. Motion clock partially visible, rough brick wall and checkered curtain in background., c. fall 1913

Notes: Category: handkerchief folding study
Collection: NMAH
Copy negative: 99-30019
Gilbreth image: 618-G7?-4
Information on photo: 618-G7?-4
Job name: Herrmann-Aukam Co.
Job number: 618
Original caption: 618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]
Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown. 618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.
Right view of operation of 618-G70-1. 618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times,- or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of

the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.126.b Chronocyclegraph of person moving pieces of cloth on a wood table. A female figure is partially visible in the background., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30020

Gilbreth image: 618-G71-D

Information on photo: 618-G71-D

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4]618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where

there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.127 Chronocyclegraph of a woman folding handkerchiefs. A motion clock is partially visible. A hand against a checkered curtain and a rough brick wall are visible in the background. 618-G69-4 and 618-G70-4 both show the same thing: the same operator after an hour of training in the new Gilbreth method., c. fall 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30021

Gilbreth image: 618-G70-4

Information on photo: 618-G70-4

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: "Shows an operator folding square pieces of cloth after one hour of training by our method." (From the Purdue Archives, NP 01/0019 v.1). 618-G70-4 See 618-G69-4 [caption to 618-G69-4 is: Inexperienced operator (in 618-G68-4) after one hour of training in our method.]

Related captions: 618-G70-1 Shows the front view of woman folding pieces of cloth; or, in other words, ten cycles of the same operation as shown as one in 618-69-1 and as shown from her right side in 618-G70-3, and from her left side in 618-G70-2. It will be seen in each one of these pictures that there are certain deviations from the standard paths, and this is due to the fact that the pieces of cloth were not handed to the operator under standard conditions. With the exception of these special deviations the path of habit is very clearly shown. 618-G70-2 This picture shows ten cycles of folding ten handkerchiefs. The single motion of execution shown on top of this cyclegraph is for turning handkerchiefs around that were not brought to the worker in the standard relative position with the rest of the pile.

Right view of operation of 618-G70-1. 618-G70-3 618-G68-2 shows left side view of motions of folding handkerchiefs and 618-70-3 shows right hand view of same motions repeated ten times,- or the folding of ten similar handkerchiefs. The marks of habit are strongly shown in this photograph, and the exception motions are due to the necessity of turning over handkerchiefs that were supplied with the initial in the wrong corner. The camera was moved slightly sideways during the process of the folding, showing the chronocyclegraph stretched in order to more easily count the different lines. This is shown by the double lines on the boxes in the right hand side of the picture. 618-G70-4 See 618-G69-4

Location of subject: South River NJ or Lebanon, PA

1980.0785.128 Chronocyclegraph of a person moving pieces of cloth on a wood table. A female figure is partially visible in the background., c. fall 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30022

Gilbreth image: 618-G71-C

Information on photo: 618-G71-C

Job name: Herrmann-Aukam Co.

Job number: 618

Original caption: 618-G71-C Shows an untrained worker folding material. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. This picture shows a cyclegraph where there is an ideal illustration of awkwardness, clumsiness, mental hesitation and indecision at each turning point of the cycle. Shows an operator making more than 150 motions in folding one of these pieces of cloth. The operator was an expert in this type of folding.

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Related captions: 618-G71-A Shows an operator making more than 150 motions in folding one piece of cloth that should be done in 16 motions.

[See 618-G68-4] 618-G71-B Shows the wrong motions of an inexperienced worker folding pieces of cloth in a textile factory. Left side view of chronocyclegraph of motions of girl folding handkerchief and before she was taught. Note that this has all the indications of awkwardness and lack of training, such as lack of smooth curves and uneven positive and negative acceleration of speed of motions. 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

Location of subject: South River NJ or Lebanon, PA

Subject names: Milanda?

1980.0785.129 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. A young male in the background holds up a slate which reads: 'WITHOUT MARKED STEELS.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'marked steel' means, but at this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., Oct-13

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30023

Information in photo: WITHOUT MARKED STEELS

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

1980.0785.130 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. A slate in the background reads 'WITH COVERED CLIPS.' A sign directly beneath the slate reads '613 PHOTO NO 20, HERRMANN AUKAM CO. SR, TEMP 75 HUM 62.' There is an ink drawing of geometric shapes on the back of the card. The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'covered clips' mean, but at this point Gilbreth was working on the women's folding boards

by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. Note the material neatly arranged to the right of the folder on a 'move' table; this was a Gilbreth addition. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980;0785.130., c. October 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30024

Information in photo: WITH COVERED CLIPS613 PHOTO NO 20HERRMANN AUKAM CO SR.TEMP 75 HUM 62

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D"Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

1980.0785.131 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. A slate in the background reads 'WITH COVERED CLIPS.' A sign directly beneath the slate reads '613 PHOTO NO 20, HERRMANN AUKAM CO. SR, TEMP 75 HUM 62.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'covered clips' mean, but at this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. Note the material neatly arranged to the right of the folder on a 'move' table; this was a Gilbreth addition. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980;0785.130., October 1913?

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30025

Information in photo: WITH COVERED CLIPS613 PHOTO NO
20HERRMANN AUKAM CO SR.TEMP 75 HUM 62

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D"Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

Subject names: Esther Lesley?

1980.0785.132 A poor quality chronocyclegraph of two females working with pieces of cloth on a bench against a gridded background. A young male in the background holds up a slate which reads: 'WITHOUT MARKED STEELS.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'marked steel' means, but at this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., c. October 18 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30026

Information in photo: WITHOUT MARKED STEELS

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D"Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and

dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

Subject names: Esther Lesley?

1980.0785.133 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. A young male is visible in the background. The lines are somewhat jerky, indicating new motions of an inexperienced worker; note the 'move table' to the woman's right for finished work, which Gilbreth introduced to the folders' workstations. At this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., c. October 18, 1913

Notes:

Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30027

Job name: Herrmann-Aukam Co.

Job number: 613 or 618

Related captions: 125 is a chronocyclegraph of the motions of the best worker in folding cloth in a textile factory.

Location of subject: South River NJ or Lebanon, PA

1980.0785.134 A poor quality chronocyclegraph of two females working with pieces of cloth on a bench against a gridded background. A young male in the background holds up a slate which reads: 'WITHOUT MARKED STEELS.' Written in pencil on reverse: 'Chronocyclegraph Spanning (?) Cloth.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'marked steel' means, but at this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118;

1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., October, 1913?

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30028

Information in photo: WITHOUT MARKED STEELS

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D "Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl; also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference shown in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

Subject names: Esther Lesley?

1980.0785.135 A poor quality chronocyclegraph of two females folding handkerchiefs on a bench against a gridded background. A slate in the background reads 'WITH COVERED CLIPS.' A sign directly beneath the slate reads '613 PHOTO NO 20, HERRMANN AUKAM CO. SR, TEMP 75 HUM 62.' The cyclegraph lines are jumpy; for Gilbreth language relating to inexperienced workers, see 618-G71 series. I don't know what 'covered clips' mean, but at this point Gilbreth was working on the women's folding boards by, for example, covering them with rubber to prevent slipping, and putting finger holes in the folding boards to help with picking up the material. Note the material neatly arranged to the right of the folder on a 'move' table; this was a Gilbreth addition. There are a set of six of these cards taken at the same session, I imagine: 1980.0785.118; 1980.0785.133; 1980.0785.132; 1980.0785.134; 1980.0785.135; and 1980.0785.130., October, 1913

Notes: Category: handkerchief folding study

Collection: NMAH

Copy negative: 99-30029

Gilbreth image: 613-20

Information in photo: WITH COVERED CLIPS613 PHOTO NO
20HERRMANN AUKAM CO SR.TEMP 75 HUM 62

Job name: Herrmann-Aukam Co.

Job number: 613

Related captions: 618-G71-D"Wrong motions of an inexperienced worker folding cloth in a textile factory. This picture shows intermittent electric lights with the filament and the current so proportioned that the light brightens quickly and dies out slowly. This gives us a photograph of time in that the number of flashes per second is known. Moreover, the point on the spot shows the direction of the motion. It is very easy to check up the efficiency of the motions in this way."

"Note that #618-G71-B shows an inexperienced girl: also #618-G71-C and #618-G71-D. While #618-G69-2 and #618-G69-3 show girls with much greater experience. And it is here that our method is important; in that, in the scientific selection of the worker, we do not separate the workers into the two classes of those who are efficient and those who are not efficient, until we have determined the difference in their motions and have given the worker time to correct this difference. The difference show in these photographs is that the inexperienced worker does not even make curves; the lines are jerky, both in deviating from a straight or evenly curved line, or are jerky as to time. This latter can be told by the difference in spacing between the spots in any one line." (Purdue captions).

Location of subject: South River NJ or Lebanon, PA

Subject names: Esther Lesley

1980.0785.136 Pure cyclegraph. The interior of a room is faintly visible. The Gilbreth image number and date are too blurry and faded to read, probably at the beginning of the F series (fencing) when they were still figuring out the lighting. This represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. See as a comparative and numbered example 1980.0785.160., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30030

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/14 and F-78-Berlin, 1/15/14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particualrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.141 Pure chronocyclegraph, 1914-01-09

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30031

Gilbreth image: 620-8

Information on photo: 620-8JAN 9-14

1980.0785.142 Cyclegraph of seated male working., 9-Jan-14

Notes: Card Number: 32

Category: light assembly study

Copy negative: 93-2612

Information on photo: 620-9FBG

1980.0785.142 Drill press series: Cyclegraph of a male worker taking latch handles out of a box and boring holes in them with a drill press., Jan. 9, 1914

Notes: Card Number: 94

See related image 610-G37. Note that the boxes are adjacent to each other, on the same side of the worker, and at the same height. This was after Gilbreth changed the boxes from being on each side of the operator, and before he made the boxes slope in order to have gravity assist in moving the handles towards the end of the box.

Category: assembly study

Copy negative: 93-

Gilbreth image: 610-142

Information on photo: 620-9Jan 9 '14

Job name: New England Butt Company

Job number: 610

Related captions: "This series started in 1912 [1913?] and continued from time to time until 1915. The original conditions required a fast workman nine and one-half seconds for all the motions necessary to countersink a hole on a latch handle for a braider, and more often the time was fifteen seconds than

nine and a half, the best times that we found, being nine and one half seconds, which was eventually reduced to four and one half seconds. The toteboxes were supported by any means whatever without any attempt at standard location, and the piece was usually picked up in the left hand and countersunk, and then passed to the right hand, which threw it on the right hand side, while the left hand proceeded to pick up another piece." Drill Press captions, NFile 1/0019, vol. 1 part 1 of 2, p. 1.

"The adaptation of these cyclegraphs to the work has resulted in some of the most unexpected economies, not the least of which are the direct results of invention, which is suggested as a direct result and also as a byproduct of this method of visualization, analysis, and measurement. In 1913 I took a number of records of different kinds of workmen operating a drill press. The operation consisted of drilling cast iron latch handles for braiders manufactured by the New England Butt Company. The usual thought in connection with such work is that the material should go into one side of the machine and come out the other end. The investigation proved this a mistake, and that instead of having the thought of a continuous straight line moving the thought should be the functionalization of the hands.. 610-G148 is a cyclegraph of an operation on these latch handles. The man is one of the most expert workmen in the entire factory, and his function is that of a teacher. He is also a man who sees that the various machines run at the speed called for by the planning department. BNote in this picture that the portion of the cyclegraph that jumps up in the air is coincident with the dropping of the finished latch handle into the box the line is very wavy, and after it is dropped, the line is quite as straight. The man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, and he has had but one short practice in making decisions, and you will, therefore, notice that the light at the bottom of the cyclegraph, where he picks up the latch handle, shows a mental process similar to the traditional animal between the two bales of hay, and starved to death because he could not decide upon the sequence in which he should eat the bales of hay. Here is apparently great indecision, although there is no reason whatever for choice. This same indecision is shown in all the pictures of this man taken at this time, but was afterwards completely removed, as is shown in photographs taken of the same man on the same operation a few hours, a few days, and also a year later. Examination of these cycles immediately suggested that the length of motions should be reduced by having a higher table, and such a table was temporarily secured by bolstering up the totebox as shown in 610-G37. Still further examination of these cyclegraphs showed that the orbit could be very much reduced by having the incoming latch handles in a box that tilted about thirty degrees toward the operator, this, because the latch handles should always slide to the lower end of the box so that they can be found in a constant location without calling for the eye as well as than hand of the worker to find

them. Immediately after the hole was countersunk the fingers opened, and it catapulted sideways down the inclined table in use, and into a box on the floor. This cut the time of the operation from approximately nine seconds to four and three quarters seconds with much less fatigue to the workman. The arc of light running in the direction of the upper left hand corner from the visor of the worker's cap shows the light on the finger of the right hand which operates the lever of the drill press. This is shown in 610-G146." Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Photographs sent to Mr. Robert Moulton; typescript MG 1/30/15.

"610-G131. This picture is a double cycle of the speed boss at the New England Butt Company. This picture is interesting for several reasons. One is as follows: The cycles are almost exactly alike. The dropping of the latch handle makes the same upward wave in each one, and the upward course of the motion shows the extreme evenness of great skill and practice, and the downward course shows the unevenness that attends mental operations, such as attention and decision. It will be seen that up to the time that he drops this into the box the line is very wavy, and, after they are dropped, the line is quite as straight as the upward curve. This man is an Italian American, and has all the peculiarities and virtues popularly believed to be found in that race. His motions are extremely quick, but he has had short practice in making decisions.....[repeats above anecdote about hay]" Gilbreth Papers, Purdue, NFile 1/0019 vol. III. Description of Pictures sent to Mr. Lewis Ellison; typescript MG 12/9/15

Location of subject: New England Butt Company, Providence, RI.

Subject names: Tommy Perroti?

1980.0785.143.a Pure chronocyclegraph, 9-Jan-14
Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30032
Gilbreth image: 620-4
Information on photo: 620-4 Jan 9 '14

1980.0785.143.b Pure chronocyclegraph, 9-Jan-14
Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30033
Gilbreth image: 620-7
Information on photo: 620-7 Jan 9 '14

1980.0785.144.a Pure chronocyclegraph. Books and/or papers are faintly visible on the table in the background., 9-Jan-14
Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30131
Gilbreth image: 620-8
Information on photo: 620-8 JAN 9-14

1980.0785.144.b Pure chronocyclegraph. Books and/or papers are faintly visible on the table in the background., 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30132
Gilbreth image: 620-7
Information on photo: 620-7JAN 9-14

1980.0785.145.a Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30034
Gilbreth image: 620-13
Information on photo: 620-13Jan. 9 - 14

1980.0785.145.a Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30034
Gilbreth image: 620-13
Information on photo: 620-13Jan. 9 - 14

1980.0785.145.b Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30035
Gilbreth image: 620-8 (?)
Information on photo: 620-8 (?)JAN 9 - 14

1980.0785.146A Pure cyclegraph. Reverse side of card also has an image - see 80.0785.146B., 9-Jan-14

Notes: Card Number: 4
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-3030
Information on photo: 620-6Jan 9 14????
Location of subject: Berlin, Germany (?)

1980.0785.146B Cyclegraph of male standing at table removing unidentified items from box on right and box on left. Reverse side of card also has an image - see 80.0785.146A., 9-Jan-14

Notes: Card Number: 192
Category: misc.- pure cyclegraphs or unidentified study
Copy negative: 94-3031 (whole card)94-3030 (right card half)
Information on photo: 620-9Jan 9 '142B(??)
Location of subject: Berlin, Germany (?)

1980.0785.147.a Pure chronocyclegraph. A table with objects on it is faintly visible in the foreground., 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30036
Gilbreth image: 620-10

Information on photo: 620-10 JAN 9 '14

1980.0785.147.b Pure chronocyclegraph. Windows and a workbench are visible in the background., 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30037

Gilbreth image: 620-18

Information on photo: 620-18 Jan. 9 '14

1980.0785.148.a Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30038

Gilbreth image: 620-4

Information on photo: 620-4 Jan 9 '14

1980.0785.148.b Pure chronocyclegraph. A male figure is barely visible behind the lights., 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30039

Gilbreth image: 620-12

Information on photo: 620-12 Jan 9 '14

1980.0785.149 Pure cyclegraph. The interior of a room with a male figure sitting in the background is faintly visible. Faded and weak image. The Gilbreth image number and date are too blurry and faded to read, probably at the beginning of the F series (fencing) when they were still figuring out the lighting. This represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. See as a comparative and numbered example 1980.0785.160., 15-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30040

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.150.a Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30041

Gilbreth image: F764

Information on photo: F764 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head breast covering 3. 10 times." GPP NF 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering

5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.150.b Pure chronocyclegraph. Six small bright white squares are visible in the upper left corner. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30042

Gilbreth image: F724

Information on photo: F724 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head breast covering 6 flank." GPP NF 1/0019 vol. III.

Related captions: From this series:No. 700 Short head strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo. 703 Out of line, swung head stroke, position 3No. 704 Head stroke outside, position 3No. 705 Head stroke covering 2 face outsideNo. 706 Head stroke covering 2 swung headNo. 707 Flank stroke covering 3 breast strokeNo. 708 Breast covering 3 swung headNo. 709 Short head stroke covering 1 swung head strokeNo. 710 Short head stroke covering 5 swung head strokeNo. 711 Breast stroke covering 1 head strokeNo. 712 Breast stroke covering 5 breast strokeNo. 713 Short head stroke covering 4 head strokeNo. 714 Breast stroke covering 5 covering 2 face outsideNo. 715 Head feint breastNo. 716 Head breast covering 5 breastNo. 717 Head breast covering 5 headNo. 718 Head flank covering 3 breastNo. 719 Head flank covering 3 thrust blowNo. 720 Head breast covering 5 head flank (taken twice)No. 720 Head breast covering 5 head flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint short head covering 4 breastNo. 723 Thrust feint short head covering deep 3 short headNo. 724 Head breast covering 6 flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.151.a Pure chronocyclegraph. A figure is very faintly visible in the background. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30043

Gilbreth image: F769

Information on photo: F769 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 3 4 head. 12 times." GPP NF 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.151.b Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30044

Gilbreth image: F730

Information on photo: F730 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Circle stroke covering 2 face." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.152.a Pure cyclegraph in good condition. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30045

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.152.b Pure cyclegraph in good condition. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30046

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.153.a Pure cyclegraph in good condition. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30047

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.153.b Pure cyclegraph in good condition. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30048

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.154.a Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-15

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30049

Gilbreth image: F729

Information on photo: F729 BERLIN JAN 27 '15

Job name: Auergesellschaft

Job number: 621

Original caption: "Iron stroke covering 4 head covering 4 3 breast." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748

Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany.

Subject names: Fencer Murero, Berlin

1980.0785.154.b Pure cyclegraph. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. Note that he has not started using a pulsating light, generating a chronocyclegraph., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30050

Gilbreth image: F77

Information on photo: F77 BERLIN JAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.155.a Pure chronocyclegraph. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30051
Gilbreth image: F136
Information on photo: F136 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."
"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 98 is another cyclegraph of the fence."
"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
"F 107. Chronocyclegraph of expert fencer."
"F 130. Chronocyclegraph of expert fencer."
"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)
Location of subject: Berlin, Germany
Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.155.b Pure chronocyclegraph. A motion clock is visible mounted on the wall in the background. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30052
Gilbreth image: F148
Information in photo: xx
Information on photo: F148 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.156A Cyclegraph of standing male doing unidentified activity. Reverse side of card also has an image - see 80.0785.156B. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Copy negative: 94-3032 (whole card) 94-3033 (right card half)

Gilbreth image: F772

Information on photo: F772 Berlin Jan 27 '14

Job number: 621

Original caption: No. 772 Head breast. 10 times. [This caption does not accord with what the image looks like, even though the caption is accurate--EHB]

Related captions: F-761 Champion fencers. F-762 Champion fencers. F-763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light. F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body being in the way or the blade of the sword being in the light. F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are

broken is due to the fencers body being in the way or the blade of the sword being in the light. F-766 Champion fencers. Imperial and Royal Fencer Neralitsch, Berlin. No. 761 Continued head inside head outside. 12 times. No. 762 Below changed swings. 10 times. No. 763 Head flank. 11 times. No. 764 Head breast covering 3. 10 times. No. 765 Head covering 5. 10 times. No. 766 Breast covering 5 breast. 10 times. No. 767 Head short covering 4 head. 14 times. No. 768 Breast breast flank flank. 10 times. No. 769 Covering 3 4 head. 12 times. No. 770 Head flank. 10 times. No. 771 Head covering 2 face. 10 times. No. 772 Head breast. 10 times. No. 773 Covering 5 2. 10 times. No. 774 Breast face. 10 times. No. 775 Breast covering 3 flank. 12 times. No. 776 Continuing flank stroke. No. 777 Below changed swings. 10 times. No. 778 Flank covering 4 flank covering 4. 10 times. No. 779 has not been taken. No. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.156B Pure cyclegraph. Reverse side of card also has an image - see 80.0785.156A Pure cyclegraph. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. Note that he has not started using a pulsating light, generating a chronocyclegraph., 15-Jan-14

Notes:

Category: fencing study

Copy negative: 94-3033

Gilbreth image: F78

Information on photo: F78 Berlin Jan 15 '14 6

Job name: Auergesellschaft

Job number: 621

Original caption: "F78 Cyclegraph of the point of the rapier in fencing."

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany (?)

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.157.a Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30053

Gilbreth image: F 728

Information on photo: F 728 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head flank head covering deep 3 flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.157.b Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30054

Gilbreth image: F 727

Information on photo: F 728 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank face covering 4 breast." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.158.a Pure chronocyclegraph. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30055

Gilbreth image: F 764

Information on photo: F 764 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head breast covering 3. 10 times." GPP NFile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.158.b Pure chronocyclegraph. Six small white squares are visible in the background. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30056

Gilbreth image: F 724

Information on photo: F 724 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head breast covering 6 flank." GPP NFile 1/0019 vol. III.

Related captions: From this series: No. 700 Short head stroke No. 701 Breast stroke No. 702 Flank stroke position No. 703 Out of line, swung head stroke, position 3 No. 704 Head stroke outside, position 3 No. 705 Head stroke covering 2 face outside No. 706 Head stroke covering 2 swung head No. 707 Flank stroke covering 3 breast stroke No. 708 Breast covering 3 swung head No. 709 Short head stroke covering 1 swung head stroke No. 710 Short head stroke covering 5 swung head stroke No. 711 Breast stroke covering 1 head stroke No. 712 Breast stroke covering 5 breast stroke No. 713 Short head stroke covering 4 head stroke No. 714 Breast stroke covering 5 covering 2 face outside No. 715 Head feint breast No. 716 Head breast covering 5 breast No. 717 Head breast covering 5 head No. 718 Head flank covering 3 breast No. 719 Head flank covering 3 thrust blow No. 720 Head breast covering 5 head flank (taken twice) No. 720 Head breast covering 5 head flank No. 721 Breast feint covering 5 flank No. 722 Thrust feint short head covering 4 breast No. 723 Thrust feint short head covering deep 3 short head No. 724 Head breast covering 6 flank No. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.159 Chronocyclgraph (reverse side has another image.), 15-Jan-14

Notes:

Card Number: 186

Category: fencing study

Copy negative: 93-2676

Information on photo: F 121 Berlin

Location of subject: Berlin, Germany

1980.0785.159 Chronocyclegraph (reverse side has another image.), undated

Notes:

Card Number: 509

Category: misc.- pure cyclegraphs or unidentified study

Copy negative: 93-2603

1980.0785.159 Pure cyclegraph (no person visible).[reverse of card has another pure cyclegraph image], Jan. 15, 1914

Notes:

Card Number: 98

Category: fencing study

Copy negative: 93-

Gilbreth image: F121

Information on photo: F 121 Berlin Jan 15 '14

1980.0785.160.a Pure chronocyclegraph. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Copy negative: 99-30057
Gilbreth image: F 139
Information on photo: F 139 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing"
"F78 Cyclegraph of the point of the rapier in fencing."
"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 98 is another cyclegraph of the fence."
"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
"F 107. Chronocyclegraph of expert fencer."
"F 130. Chronocyclegraph of expert fencer."
"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)
Location of subject: Berlin, Germany
Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.160.b Pure cyclegraph. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., January 15, 1914

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30058
Gilbreth image: F 91
Information on photo: F 19 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.161 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30059

Gilbreth image: 620-2

Information on photo: 620-2 JAN 9 '14

1980.0785.162 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30060

Gilbreth image: 620-5

Information on photo: 620-5 JAN 9 '14

1980.0785.163 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30061

Gilbreth image: 620-3

Information on photo: 620-3 JAN 9 '14

1980.0785.164 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30062

Gilbreth image: 620-1

Information on photo: 620-1 JAN 9 '14

1980.0785.165 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30063

Gilbreth image: 620-6

Information on photo: 620-6 JAN 9 '14

1980.0785.166 Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30064

Gilbreth image: 620-4

Information on photo: 620-4 JAN 9 '14

1980.0785.167.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30065

Gilbreth image: F764

Information on photo: F764 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head breast covering 3. 10 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F-763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4

flank covering 4. 10 times.No. 779 has not been takenNo. 780
Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.167.b Pure cyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30066

Gilbreth image: F726

Information on photo: F726 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head flank head covering 5 thrust." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.168 Pure chronocyclegraph. Faded and weak image. The Gilbreth image number and date are too blurry and faded to read, probably F 130 or thereabouts. This represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. See as a comparative and numbered example 1980.0785.160., 14-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30130
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."
"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 98 is another cyclegraph of the fence."
"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
"F 107. Chronocyclegraph of expert fencer."
"F 130. Chronocyclegraph of expert fencer."
"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)
Location of subject: Berlin, Germany
Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.169 Pure chronocyclegraph. Faded and weak image. The Gilbreth image number and date are too blurry and faded to read, probably F 130 or thereabouts. This represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. See as a comparative and numbered example 1980.0785.160., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30129
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particulrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.170 Pure cyclegraph in poor condition. Some unintelligible words are scribbled in pencil on the back of the card. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., undated

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30067

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particulrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.171 Pure cyclegraph in poor condition. Some unintelligible words are scribbled in pencil on the back of the card. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30068

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.172 Chronocyclegraph of what appears to be someone writing in the air., undated

Notes:

Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30069

1980.0785.173 Pure cyclegraph in poor condition. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. I suspect these might

be the earliest images taken of the fencing, since they are not numbered, and they are cyclegraphs, not chronocyclegraphs., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30070

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.174.a Pure chronocyclegraph of the point of a fencing rapier. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30103

Gilbreth image: F120

Information on photo: F120 BERLIN JAN. 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particulalrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.174.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30104

Gilbreth image: F141

Information on photo: F141 BERLIN JAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegrpahs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particulalrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.175 Pure chronocyclegraph. A square has been drawn with a ball-point pen on the left photograph., undated

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30071

Gilbreth image: G18-G63

Information on photo: G18-G63

1980.0785.176.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30113

Gilbreth image: F 115

Information on photo: F 115 BERLIN Jan 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.176.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30114

Gilbreth image: F 132

Information on photo: F 132 BERLIN JAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.178.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30115

Gilbreth image: F 747

Information on photo: F 747 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 4 breast covering 6 flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3

breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.178.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30116

Gilbreth image: F 748

Information on photo: F 748 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Thrust feint head covering 2 arm outside." GPP NFile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust

covering 3 breast headNo. 745 Iron stroke covering 2 face
 covering 1 head breastNo. 746 Circle covering 4 flank covering
 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748
 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast
 covering 5 2 arm outsideNo. 750 Breast feint thrust covering
 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo.
 752 Head flank head covering 1 arm outsideNo. 753 Thrust
 double feint down up down covering 3 2 arm outsideNo. 754
 Thrust double feint up down up covering 2 3 arm outsideNo.
 755 Blow covering 2 arm outside covering 5 2 arm outsideNo.
 756 Iron stroke covering 4 head covering 5 2 arm outsideNo.
 757 Head breast covering 4 flankNo. 758 Thrust below swung
 head flank covering 3 head flankNo. 759 Breast breast covering
 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.179.a Pure chronocyclegraph. Faded and weak image. Point of
 a fencing rapier as wielded by a champion fencer, taken in Berlin while on
 contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30072

Gilbreth image: F766

Information on photo: F766 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Breast covering 5 breast. 10 times." GPP Nfile
 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion
 fencers.F763 Chronocyclegraph of champion fencer of the
 world. One light is on the hilt of the foil and the other is on the
 extreme point. Considering the flexibility of the blade, it will be
 noted that the motions coincide with unusual accuracy. Where
 the lines are broken is due to the fencer's body in the way of
 the light.F-764 is a chronocyclegraph of a champion fencer of
 the world. One light on the hilt and the other on the extreme
 point. Considering the flexibility of the blade of this sword, it
 will be noted that the motions coincide with unusual accuracy.
 Where the lines are broken is due to the fencers body being
 in the way or the blade of the sword being in the light.F-765
 is a chronocyclegraph of a champion fencer of the world. One
 light on the hilt and the other on the extreme point. Considering
 the flexibility of the blade of this sword, it will be noted that
 the motions coincide with unusual accuracy. Where the lines
 are broken is due to the fencers body being in the way or the
 blade of the sword being in the light.F-766 Champion fencers.in
 this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761
 Continued head inside head outside. 12 times.No. 762 Below
 changed swings. 10 times.No. 763 Head flank. 11 times.No.
 764 Head breast covering 3. 10 times.No. 765 Head covering

5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.179.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30073

Gilbreth image: F765

Information on photo: F765 BERLIN JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head covering 5. 10 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2

face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.180.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30074

Gilbreth image: F150

Information on photo: F150 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.180.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30075

Gilbreth image: F159

Information on photo: F159 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.181.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30076

Gilbreth image: F137

Information on photo: F137 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particulalrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.182.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30078

Gilbreth image: F90

Information on photo: F90 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegrpahs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of th fence."

"F-102, Jan. 15, '14. This picture is a cyclegra[h of fencing. It is particulalrly interesting due to the fact that is is taken of the champion fencer of the world."

"F 107. Chronocyclegra[h of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.182.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30079

Gilbreth image: F91

Information on photo: F91 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.183.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30080

Gilbreth image: F766

Information on photo: F766 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Breast covering 5 breast. 10 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.183.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30081

Gilbreth image: F761

Information on photo: F761 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Continued head inside head outside. 12 times." GPP NFile 1/0019 vol. III.

Related captions: F-761 Champion fencers.

F-762 Champion fencers.

F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.

F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.

F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.

F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.184.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30082

Gilbreth image: F85

Information on photo: F85 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.184.b Pure cyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30083

Gilbreth image: F78

Information on photo: F78 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "F78 Cyclegraph of the point of the rapier in fencing." GPP Nfile 1/0019 vol. III.

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.185.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company. The indicated date of January 27, above, does not make sense, since all studies of this lower number were taken on January 15., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30084

Gilbreth image: F30

Information on photo: F30 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.185.b Pure chronocyclegraph. Faded and weak image. 'UPSIDE DOWN' is written on the sides of the card. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30085

Gilbreth image: F727

Information on photo: F727 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank face covering 4 breast." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.186.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30086

Gilbreth image: F789

Information on photo: F789 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Continued short flank stroke. 10 times." GPP
Nfile 1/0019 vol. III.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit. Fencer Murero, Berlin. No. 781 Head dee covering 3 breast. 10 times. No. 782 Breast covering 1 breast. 10 times. No. 783 Flank face covering 3. 10 times. No. 784 Head covering 1 head. 10 times. No. 785 Flank covering 5 head. 10 times. No. 786 Flank head. 10 times. No. 787 Continued breast stroke. 10 times. No. 788 Continued short head stroke. 10 times. No. 789 Continued short flank stroke. 10 times. No. 790 Covering 1 2 5. 10 times. No. 791 Covering 1 2 5 4 3. 5 times. No. 792 Covering 1 2 3 4 5. 10 times. No. 793 Breast covering 5 head. 10 times. No. 794 Thrust head outside head. 10 times. No. 795 Head inside and outside (upper changed swings) 10 times. No. 796 Flank breast below changed swings. 10 times. No. 797 Short head stroke swung flank breast. No. 798 Head covering 1 flank covering 1 breast. No. 799 Breast covering 1 head. No. 800 Flank covering 3 head. No. 801 Short head covering 5 swung head. Twice. No. 802 Swung head covering 5 flank covering 3 until No. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.186.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30087

Gilbreth image: F788

Information on photo: F788 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Continued short head stroke. 10 times." GPP
Nfile 1/0019 vol. III.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit. Fencer Murero, Berlin. No. 781 Head dee covering 3 breast. 10 times. No. 782 Breast covering 1 breast. 10 times. No. 783 Flank face covering 3. 10 times. No. 784 Head covering 1 head. 10 times. No. 785 Flank covering 5 head. 10 times. No. 786 Flank head. 10 times. No. 787 Continued breast stroke. 10 times. No. 788 Continued short

head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.187.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30088

Gilbreth image: F769

Information on photo: F769 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 3 4 head. 12 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast

breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.187.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30089

Gilbreth image: F729

Information on photo: F729 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Iron stroke covering 4 head covering 4 3 breast." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung

head flank covering 3 head flankNo. 759 Breast breast covering
1 arm outsideNo. 760 Thrust head flank
Location of subject: Berlin, Germany

1980.0785.188.a Pure chronocyclegraph. Faded and weak image. Point of
a fencing rapier as wielded by a champion fencer, taken in Berlin while on
contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30090

Gilbreth image: F760

Information on photo: F760 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Thrust head flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank
head covering 5 thrustNo. 727 Flank face covering 4 breastNo.
728 Head flank head covering deep 3 flankNo. 729 Iron stroke
covering 4 head covering 4 3 breastNo. 730 Circle stroke
covering 2 faceNo. 731 Circle covering 4 head covering 4 3
breastNo. 732 Covering 3 breast stroke covering 4 face (taken
twice)No. 733 Covering 3 breast stroke covering 4 faceNo.
734 Circle stroke covering 3 2 face flankNo. 735 Covering 3
breast stroke covering 4 faceNo. 736 Head head covering 3 4
flankNo. 737 Head in head outside covering 5 head flankNo.
738 Head flank head covering 5 2 breastNo. 739 Head head
flank covering 3 2 faceNo. 740 thrust double feint covering
1 headNo. 741 head breast head covering 4 headNo. 742
Flank head flank covering 3 headNo. 743 circle covering 4
head covering 5 swung headNo. 744 circle covering 3 thrust
covering 3 breast headNo. 745 Iron stroke covering 2 face
covering 1 head breastNo. 746 Circle covering 4 flank covering
3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748
Thrust feint head covering 2 arm outsideNo. 749 Thrust breast
covering 5 2 arm outsideNo. 750 Breast feint thrust covering
3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo.
752 Head flank head covering 1 arm outsideNo. 753 Thrust
double feint down up down covering 3 2 arm outsideNo. 754
Thrust double feint up down up covering 2 3 arm outsideNo.
755 Blow covering 2 arm outside covering 5 2 arm outsideNo.
756 Iron stroke covering 4 head covering 5 2 arm outsideNo.
757 Head breast covering 4 flankNo. 758 Thrust below swung
head flank covering 3 head flankNo. 759 Breast breast covering
1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.188.b Pure chronocyclegraph. Faded and weak image. Point of
a fencing rapier as wielded by a champion fencer, taken in Berlin while on
contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30091

Gilbreth image: F759

Information on photo: F759 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Breast breast covering 1 arm outside." GPP
Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Subject names: Fencer Murero, Berlin

1980.0785.189.a Pure cyclegraph. Faded and weak image. What appears to be a door with a sign on it is very faintly visible in the background. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30092

Gilbreth image: F702

Information on photo: F702 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank stroke position." GPP NFile 1/0019 vol. III.

Related captions: Imperial and Royal Fencer Neralitsch, Berlin:No. 700 Short head strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo. 703 Out of line, swung head stroke, position 3No. 704 Head stroke outside, position 3No. 705 Head stroke covering 2 face outsideNo. 706 Head stroke covering 2 swung headNo. 707 Flank stroke covering 3 breast strokeNo. 708 Breast covering 3 swung headNo. 709 Short head stroke covering 1 swung head strokeNo. 710 Short head stroke covering 5 swung head strokeNo. 711 Breast stroke covering 1 head strokeNo. 712 Breast stroke covering 5 breast strokeNo. 713 Short head stroke covering 4 head strokeNo. 714 Breast stroke covering 5 covering 2 face outsideNo. 715 Head feint breastNo. 716 Head breast covering 5 breastNo. 717 Head breast covering 5 headNo. 718 Head flank covering 3 breastNo. 719 Head flank covering 3 thrust blowNo. 720 Head breast covering 5 head flank (taken twice)No. 720 Head breast covering 5 head flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint short head covering 4 breastNo. 723 Thrust feint short head covering deep 3 short headNo. 724 Head breast covering 6 flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.189.b Pure cyclegraph. Faded and weak image. What appears to be a door with a sign on it is very faintly visible in the background. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30093

Gilbreth image: F701

Information on photo: F701 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Breast stroke." GPP Nfile 1/0019 vol. III.

Related captions: Imperial and Royal Fencer Neralitsch, Berlin:No. 700 Short head strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo. 703 Out of line, swung head stroke, position 3No. 704 Head stroke outside, position 3No. 705 Head stroke covering 2 face outsideNo. 706 Head stroke covering 2 swung headNo. 707 Flank stroke covering 3 breast strokeNo. 708 Breast covering 3 swung headNo. 709 Short head stroke covering 1 swung head strokeNo. 710 Short head stroke covering 5 swung head strokeNo. 711 Breast stroke covering 1 head strokeNo. 712 Breast stroke covering 5 breast strokeNo. 713 Short head stroke covering 4 head strokeNo. 714 Breast stroke covering 5 covering 2 face outsideNo. 715 Head feint breastNo. 716 Head breast covering 5 breastNo.

717 Head breast covering 5 headNo. 718 Head flank covering 3 breastNo. 719 Head flank covering 3 thrust blowNo. 720 Head breast covering 5 head flank (taken twice)No. 720 Head breast covering 5 head flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint short head covering 4 breastNo. 723 Thrust feint short head covering deep 3 short headNo. 724 Head breast covering 6 flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.190.a Pure chronocyclegraph. Very faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30094

Gilbreth image: F734

Information on photo: F734 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Circle stroke covering 3 2 face flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung

head flank covering 3 head flankNo. 759 Breast breast covering
1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.190.b Pure chronocyclegraph. Very faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30095

Gilbreth image: F775

Information on photo: F775 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Breast covering 3 flank. 12 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.191.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30096

Gilbreth image: F722

Information on photo: F722 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Thrust feint short head covering 4 breast."
GPP Nfile 1/0019 vol. III.

Related captions: Imperial and Royal Fencer Neralitsch, Berlin:No. 700 Short head strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo. 703 Out of line, swung head stroke, position 3No. 704 Head stroke outside, position 3No. 705 Head stroke covering 2 face outsideNo. 706 Head stroke covering 2 swung headNo. 707 Flank stroke covering 3 breast strokeNo. 708 Breast covering 3 swung headNo. 709 Short head stroke covering 1 swung head strokeNo. 710 Short head stroke covering 5 swung head strokeNo. 711 Breast stroke covering 1 head strokeNo. 712 Breast stroke covering 5 breast strokeNo. 713 Short head stroke covering 4 head strokeNo. 714 Breast stroke covering 5 covering 2 face outsideNo. 715 Head feint breastNo. 716 Head breast covering 5 breastNo. 717 Head breast covering 5 headNo. 718 Head flank covering 3 breastNo. 719 Head flank covering 3 thrust blowNo. 720 Head breast covering 5 head flank (taken twice)No. 720 Head breast covering 5 head flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint short head covering 4 breastNo. 723 Thrust feint short head covering deep 3 short headNo. 724 Head breast covering 6 flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.191.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30097

Gilbreth image: F785

Information on photo: F785 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank covering 5 head. 10 times." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 781 Head dee covering 3 breast. 10 times.No. 782 Breast covering 1 breast. 10 times.No. 783 Flank face covering 3. 10 times.No. 784 Head covering 1 head. 10 times.No. 785 Flank covering 5 head. 10 times.No. 786 Flank head. 10 times.No. 787 Continued breast stroke. 10 times.No. 788 Continued short head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.192.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30098

Gilbreth image: F780

Information on photo: F 780 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank covering 1 head. 10 times." GPP Nfile 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are

broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.192.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30099

Gilbreth image: F781

Information on photo: F781 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No.

766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Fencer Neralitsch, Berlin

1980.0785.193.a Pure chronocyclegraph. Faded and weak image. The Gilbreth image number and location have been crossed out, but the back is F784. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30121

Information on photo: JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit.Fencer Murero, BerlinNo. 781 Head dee covering 3 breast. 10 times.No. 782 Breast covering 1 breast. 10 times.No. 783 Flank face covering 3. 10 times.No. 784 Head covering 1 head. 10 times.No. 785 Flank covering 5 head. 10 times.No. 786 Flank head. 10 times.No. 787 Continued breast stroke. 10 times.No. 788 Continued short head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Murero, Berlin Fencer

1980.0785.193.b Pure chronocyclegraph. Faded and weak image. The Gilbreth image number and the location have been crossed out. Point of

a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30122

Gilbreth image: F784

Information on photo: JAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: No. 784 Head covering 1 head. 10 times.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit. Fencer Murero, Berlin. No. 781 Head deee covering 3 breast. 10 times. No. 782 Breast covering 1 breast. 10 times. No. 783 Flank face covering 3. 10 times. No. 784 Head covering 1 head. 10 times. No. 785 Flank covering 5 head. 10 times. No. 786 Flank head. 10 times. No. 787 Continued breast stroke. 10 times. No. 788 Continued short head stroke. 10 times. No. 789 Continued short flank stroke. 10 times. No. 790 Covering 1 2 5. 10 times. No. 791 Covering 1 2 5 4 3. 5 times. No. 792 Covering 1 2 3 4 5. 10 times. No. 793 Breast covering 5 head. 10 times. No. 794 Thrust head outside head. 10 times. No. 795 Head inside and outside (upper changed swings) 10 times. No. 796 Flank breast below changed swings. 10 times. No. 797 Short head stroke swung flank breast. No. 798 Head covering 1 flank covering 1 breast. No. 799 Breast covering 1 head. No. 800 Flank covering 3 head. No. 801 Short head covering 5 swung head. Twice. No. 802 Swung head covering 5 flank covering 3 until No. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero

1980.0785.194.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30125

Gilbreth image: F 152

Information on photo: F 152 BERLIN JAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.194.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30126

Gilbreth image: F 77

Information on photo: F 77 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.195.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30127

Gilbreth image: F 792

Information on photo: F 792 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 1 2 3 4 5. 10 times." GPP Nfile 1/0019 vol. III.F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit.

Related captions: Fencer Murero, BerlinNo. 781 Head dee covering 3 breast. 10 times.No. 782 Breast covering 1 breast. 10 times.No. 783 Flank face covering 3. 10 times.No. 784 Head covering 1 head. 10 times.No. 785 Flank covering 5 head. 10 times.No. 786 Flank head. 10 times.No. 787 Continued breast stroke. 10 times.No. 788 Continued short head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.195.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30128

Gilbreth image: F 757

Information on photo: F 757 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "head breast covering 4 flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo. 728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.196.a Pure cyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30123

Gilbreth image: F 773

Information on photo: F 773 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 5 2. 10 times." GPP NF 1/0019 vol. III.

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.196.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30124

Gilbreth image: F 758

Information on photo: F 758 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Thrust below swung head flank covering 3 head flank." GPP Nfile 1/0019 vol. III.

Related captions: Fencer Murero, BerlinNo. 726 Head flank head covering 5 thrustNo. 727 Flank face covering 4 breastNo.

728 Head flank head covering deep 3 flankNo. 729 Iron stroke covering 4 head covering 4 3 breastNo. 730 Circle stroke covering 2 faceNo. 731 Circle covering 4 head covering 4 3 breastNo. 732 Covering 3 breast stroke covering 4 face (taken twice)No. 733 Covering 3 breast stroke covering 4 faceNo. 734 Circle stroke covering 3 2 face flankNo. 735 Covering 3 breast stroke covering 4 faceNo. 736 Head head covering 3 4 flankNo. 737 Head in head outside covering 5 head flankNo. 738 Head flank head covering 5 2 breastNo. 739 Head head flank covering 3 2 faceNo. 740 thrust double feint covering 1 headNo. 741 head breast head covering 4 headNo. 742 Flank head flank covering 3 headNo. 743 circle covering 4 head covering 5 swung headNo. 744 circle covering 3 thrust covering 3 breast headNo. 745 Iron stroke covering 2 face covering 1 head breastNo. 746 Circle covering 4 flank covering 3 4 headNo. 747 Covering 4 breast covering 6 flankNo. 748 Thrust feint head covering 2 arm outsideNo. 749 Thrust breast covering 5 2 arm outsideNo. 750 Breast feint thrust covering 3 headNo. 751 Head feint thrust covering 5 2 arm outsideNo. 752 Head flank head covering 1 arm outsideNo. 753 Thrust double feint down up down covering 3 2 arm outsideNo. 754 Thrust double feint up down up covering 2 3 arm outsideNo. 755 Blow covering 2 arm outside covering 5 2 arm outsideNo. 756 Iron stroke covering 4 head covering 5 2 arm outsideNo. 757 Head breast covering 4 flankNo. 758 Thrust below swung head flank covering 3 head flankNo. 759 Breast breast covering 1 arm outsideNo. 760 Thrust head flank

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.197.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30105

Gilbreth image: F703

Information on photo: F703 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Out of line, swung head stroke, position 3" GPP, NF1/0019 vol. III

Related captions: From this series:No. 700 Short head strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo. 703 Out of line, swung head stroke, position 3No. 704 Head stroke outside, position 3No. 705 Head stroke covering 2 face outsideNo. 706 Head stroke covering 2 swung headNo. 707 Flank stroke covering 3 breast strokeNo. 708 Breast covering 3 swung headNo. 709 Short head stroke covering 1 swung

head strokeNo. 710 Short head stroke covering 5 swung head
strokeNo. 711 Breast stroke covering 1 head strokeNo. 712
Breast stroke covering 5 breast strokeNo. 713 Short head
stroke covering 4 head strokeNo. 714 Breast stroke covering
5 covering 2 face outsideNo. 715 Head feint breastNo. 716
Head breast covering 5 breastNo. 717 Head breast covering
5 headNo. 718 Head flank covering 3 breastNo. 719 Head
flank covering 3 thrust blowNo. 720 Head breast covering 5
head flank (taken twice)No. 720 Head breast covering 5 head
flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint
short head covering 4 breastNo. 723 Thrust feint short head
covering deep 3 short headNo. 724 Head breast covering 6
flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.197.a Pure chronocyclegraph. Faded and weak image, 27-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study

Copy negative: 99-30105

Gilbreth image: F703

Information on photo: F703 BERLINJAN 27 '14

Location of subject: Berlin, Germany

1980.0785.197.b Pure chronocyclegraph. Faded and weak image. This study
represents the point of a fencing rapier, taken in Berlin while Frank Gilbreth
was at the end of his second contract with the Auergesellschaft company.,
January 27, 191

Notes: Category: fencing study

Collection: NMAH

Copy negative: 99-30106

Gilbreth image: F704

Information on photo: F704 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head stroke outside, position 3."GPP,
NF1/0019 vol. III

Related captions: From this series:No. 700 Short head
strokeNo. 701 Breast strokeNo. 702 Flank stroke positionNo.
703 Out of line, swung head stroke, position 3No. 704 Head
stroke outside, position 3No. 705 Head stroke covering 2 face
outsideNo. 706 Head stroke covering 2 swung headNo. 707
Flank stroke covering 3 breast strokeNo. 708 Breast covering
3 swung headNo. 709 Short head stroke covering 1 swung
head strokeNo. 710 Short head stroke covering 5 swung head
strokeNo. 711 Breast stroke covering 1 head strokeNo. 712
Breast stroke covering 5 breast strokeNo. 713 Short head
stroke covering 4 head strokeNo. 714 Breast stroke covering
5 covering 2 face outsideNo. 715 Head feint breastNo. 716
Head breast covering 5 breastNo. 717 Head breast covering
5 headNo. 718 Head flank covering 3 breastNo. 719 Head

flank covering 3 thrust blowNo. 720 Head breast covering 5 head flank (taken twice)No. 720 Head breast covering 5 head flankNo. 721 Breast feint covering 5 flankNo. 722 Thrust feint short head covering 4 breastNo. 723 Thrust feint short head covering deep 3 short headNo. 724 Head breast covering 6 flankNo. 725 Head head covering 5 thrust

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.198.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30107

Gilbreth image: F769

Information on photo: F 769 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Covering 3 4 head. 10 times." GPP, NF1/0019 vol. III

Related captions: F-761 Champion fencers.

F-762 Champion fencers.

F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.

F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.

F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.

F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head

breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.198.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30108

Gilbreth image: F 770

Information on photo: F 770 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head flank. 10 times."GPP, NF1/0019 vol. III

Related captions: F-761 Champion fencers.F-762 Champion fencers.F763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light.F-764 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4

flank covering 4. 10 times.No. 779 has not been takenNo. 780
Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.199 Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30119

Gilbreth image: F 797

Information on photo: F 797 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Short head stroke swung flank breast." GPP
Nfile 1/0019 vol. III.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit.Fencer Murero, BerlinNo. 781 Head dee covering 3 breast. 10 times.No. 782 Breast covering 1 breast. 10 times.No. 783 Flank face covering 3. 10 times.No. 784 Head covering 1 head. 10 times.No. 785 Flank covering 5 head. 10 times.No. 786 Flank head. 10 times.No. 787 Continued breast stroke. 10 times.No. 788 Continued short head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.199.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30120

Gilbreth image: F 796

Information on photo: F 796 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Flank breast (below changed swings) 10 times." GPP NFile 1/0019 vol. III.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit. Fencer Murero, Berlin. No. 781 Head deee covering 3 breast. 10 times. No. 782 Breast covering 1 breast. 10 times. No. 783 Flank face covering 3. 10 times. No. 784 Head covering 1 head. 10 times. No. 785 Flank covering 5 head. 10 times. No. 786 Flank head. 10 times. No. 787 Continued breast stroke. 10 times. No. 788 Continued short head stroke. 10 times. No. 789 Continued short flank stroke. 10 times. No. 790 Covering 1 2 5. 10 times. No. 791 Covering 1 2 5 4 3. 5 times. No. 792 Covering 1 2 3 4 5. 10 times. No. 793 Breast covering 5 head. 10 times. No. 794 Thrust head outside head. 10 times. No. 795 Head inside and outside (upper changed swings) 10 times. No. 796 Flank breast below changed swings. 10 times. No. 797 Short head stroke swung flank breast. No. 798 Head covering 1 flank covering 1 breast. No. 799 Breast covering 1 head. No. 800 Flank covering 3 head. No. 801 Short head covering 5 swung head. Twice. No. 802 Swung head covering 5 flank covering 3 until No. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.200.a Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30117

Gilbreth image: F 771

Information on photo: F 771 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head covering 2 face. 10 times." GPP NF1/0019 vol. III.

Related captions: F-761 Champion fencers. F-762 Champion fencers. F-763 Chronocyclegraph of champion fencer of the world. One light is on the hilt of the foil and the other is on the extreme point. Considering the flexibility of the blade, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencer's body in the way of the light. F-764 is a chronocyclegraph of a champion fencer of

the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-765 is a chronocyclegraph of a champion fencer of the world. One light on the hilt and the other on the extreme point. Considering the flexibility of the blade of this sword, it will be noted that the motions coincide with unusual accuracy. Where the lines are broken is due to the fencers body being in the way or the blade of the sword being in the light.F-766 Champion fencers.in this series:Imperial and Royal Fencer Neralitsch, BerlinNo. 761 Continued head inside head outside. 12 times.No. 762 Below changed swings. 10 times.No. 763 Head flank. 11 times.No. 764 Head breast covering 3. 10 times.No. 765 Head covering 5. 10 times.No. 766 Breast covering 5 breast. 10 times.No. 767 Head short covering 4 head. 14 times.No. 768 Breast breast flank flank. 10 times.No. 769 Covering 3 4 head. 12 times.No. 770 Head flank. 10 times.No. 771 Head covering 2 face. 10 times.No. 772 Head breast. 10 times.No. 773 Covering 5 2. 10 times.No. 774 Breast face. 10 timesNo. 775 Breast covering 3 flank. 12 times.No. 776 Continuing flank stroke.No. 777 Below changed swings. 10 times.No. 778 Flank covering 4 flank covering 4. 10 times.No. 779 has not been takenNo. 780 Flank covering 1 head. 10 times.

Location of subject: Berlin, Germany

Subject names: Neralitsch, Imperial and Royal fencer, Berlin

1980.0785.200.b Pure chronocyclegraph. Faded and weak image. Point of a fencing rapier as wielded by a champion fencer, taken in Berlin while on contract with the Auergesellschaft company., 27-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30118

Gilbreth image: F 798

Information on photo: F 798 BERLINJAN 27 '14

Job name: Auergesellschaft

Job number: 621

Original caption: "Head covering 1 flank covering 1 breast." GPP Nfile 1/0019 vol. III.

Related captions: F-792 Stereoscopic chronocyclegraph showing the path of the point and the hilt of a rapier in the hands of the champion fencer of the world, there being ten repetitions of the same cycle of motions. This picture is extremely interesting because it shows the accuracy that comes from practice and habit.Fencer Murero, BerlinNo. 781 Head dee covering 3 breast. 10 times.No. 782 Breast covering 1 breast. 10 times.No. 783 Flank face covering 3. 10 times.No. 784 Head covering 1 head. 10 times.No. 785 Flank covering 5 head. 10 times.No. 786 Flank head. 10 times.No. 787 Continued breast stroke. 10 times.No. 788 Continued short

head stroke. 10 times.No. 789 Continued short flank stroke. 10 times.No. 790 Covering 1 2 5. 10 times.No. 791 Covering 1 2 5 4 3. 5 times.No. 792 Covering 1 2 3 4 5. 10 times.No. 793 Breast covering 5 head. 10 times.No. 794 Thrust head outside head. 10 times.No. 795 Head inside and outside (upper changed swings) 10 times.No. 796 Flank breast below changed swings. 10 times.No. 797 Short head stroke swung flank breast.No. 798 Head covering 1 flank covering 1 breast.No. 799 Breast covering 1 head.No. 800 Flank covering 3 head.No. 801 Short head covering 5 swung head. Twice.No. 802 Swung head covering 5 flank covering 3 untilNo. 807 always the same as No. 802.

Location of subject: Berlin, Germany

Subject names: Fencer Murero, Berlin

1980.0785.201.a Pure chronocyclegraph. Faded and weak image. On the side of the card someone has written in pencil: "I never saw anything as bad as this in my life." This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes:

Category: fencing study

Collection: NMAH

Copy negative: 99-30109

Gilbreth image: F 153

Information on photo: F 153 BERLINJAN 15 '14

Job name: Auergesellschaft

Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Location of subject: Berlin, Germany

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.201.b Pure chronocyclegraph. Faded and weak image. A six-paned window is visible in the background. On the side of the card someone has written: 'Very bad.' This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30110
Gilbreth image: F 112
Information on photo: F 112 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."
"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 98 is another cyclegraph of the fence."
"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
"F 107. Chronocyclegraph of expert fencer."
"F 130. Chronocyclegraph of expert fencer."
"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)
Location of subject: Berlin, Germany
Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.201.b Pure chronocyclegraph. Faded and weak image. A six-paned window is visible in the background. On the side of the card someone has written: 'Very bad.', 15-Jan-14

Notes: Category: fencing study
Copy negative: 99-30110
Gilbreth image: F 112
Information on photo: F 112 BERLIN JAN 15 '14
Location of subject: Berlin, Germany

1980.0785.202.a Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of

his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30111
Gilbreth image: F 158
Information on photo: F 158 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."
"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."
"F 98 is another cyclegraph of the fence."
"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."
"F 107. Chronocyclegraph of expert fencer."
"F 130. Chronocyclegraph of expert fencer."
"F 133. Chronocyclegraph of expert fencer." (all above from GPP, Nfile 1/0019 vol. III.)
Location of subject: Berlin, Germany
Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.202.b Pure chronocyclegraph. Very faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30112
Gilbreth image: F 151
Information on photo: F 151 BERLIN JAN 15 '14
Job name: Auergesellschaft
Job number: 621
Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."
"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.203.a Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30100
Gilbreth image: 620-2
Information on photo: 620-2 JAN 9 '14

1980.0785.203.a Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30100
Gilbreth image: 620-2
Information on photo: 620-2 JAN 9 '14

1980.0785.203.b Pure chronocyclegraph, 9-Jan-14

Notes: Category: misc./pure cyclegraphs or unidentified study
Copy negative: 99-30101
Gilbreth image: 620-5
Information on photo: 620 #5 JAN 9 '14

1980.0785.181.b Pure chronocyclegraph. Faded and weak image. This study represents the point of a fencing rapier, taken during the first day of fencing studies in Berlin on January 15, 1914 while Frank Gilbreth was at the end of his first two-week, preliminary contract with the Auergesellschaft company., 15-Jan-14

Notes: Category: fencing study
Collection: NMAH
Copy negative: 99-30077
Gilbreth image: F136
Information on photo: F136 JAN 15 '14
Job name: Auergesellschaft
Job number: 621

Related captions: "F-75-Berlin, 1/15/'14 and F-78-Berlin, 1/15/'14. Cyclegraphs of the point of the rapier in fencing."

"F78 Cyclegraph of the point of the rapier in fencing."

"F 82 and F 107 are chronocyclegraphs of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 83 Chronocyclegraph of an expert fencer. There are fifty spots to the second in these pictures. One lamp is on the hand and one lamp is on the point of the rapier."

"F 98 is another cyclegraph of the fence."

"F-102, Jan. 15, '14. This picture is a cyclegraph of fencing. It is particularly interesting due to the fact that it is taken of the champion fencer of the world."

"F 107. Chronocyclegraph of expert fencer."

"F 130. Chronocyclegraph of expert fencer."

"F 133. Chronocyclegraph of expert fencer."(all above from GPP, Nfile 1/0019 vol. III.)

Subject names: Murero OR Neralitsch, Berlin Fencers

1980.0785.030 Standing male observing material in a gravity chute. (reverse of card has another image.), undated

Notes:

Card Number: 421

Category: stacking & packing study

Copy negative: 93-2604

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Series 6: Audiovisual Materials, 1968, 1990, 2000, and undated

Subseries 6.1: Audiovisual documentation, 1968 and undated

Box 1, Folder 6	Original Films of Frank B. Gilbreth The Quest for the One Best Way (supplemental documentation), 1968 and undated
Box 1, Folder 6B	Cheaper by the Dozen (book), 1948

Subseries 6.2: Moving images, 1968 and undated

	"Original Films of Frank B. Gilbreth The Quest of the One Best Way," (film production elements), 1968 3 Motion picture films (OF 803.1-2)
Box 19	"Original Films of Frank B. Gilbreth The Quest of the One Best Way," (DVD reference copy), 1968
Box 19	"Original Films of Frank B. Gilbreth The Quest of the One Best Way," (Beta Cam SP video master) Total Running Time: 25:16, 1968
Box 19, Video OV 803.1	Original films of Gilbreth (VHS)
Box 19	Original Films of Frank B. Gilbreth The Quest for the One Best Way (1" videotape), [1968?]

Subseries 6.3: Audio Recordings, 1980, 1990, 2000, and undated

Box 19, Cassette OTC 803.1	Radio Smithsonian Inside Cheaper by the Dozen (audio tape), 1980 June
Box 19, Reel OT 803.1	Radio Smithsonian Tips on the Art Market and Inside Cheaper by the Dozen, undated
Box 19	Fred and Bill Gilbreth Talk About Their Childhood, 1980 June Language: English.
Box 19	Ernestine Gilbreth Casey photograph identification audio recording, 2000
Box 1, Folder 6A	Ernestine Gilbreth Casey photograph identification index, 2000

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Glass Plate Negatives

1995.0249.01, undated

Notes: Copy negative: 96-1177

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