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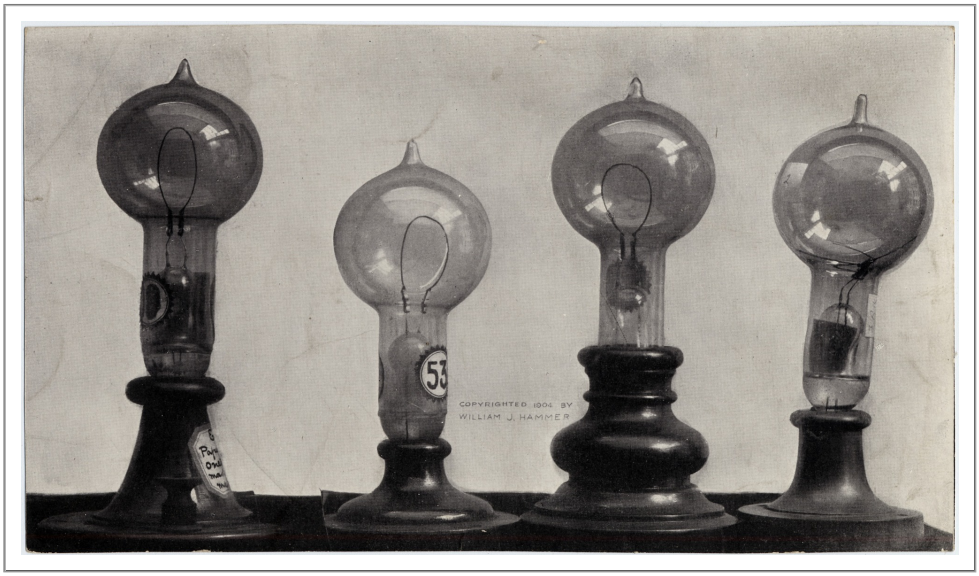
Guide to the William J. Hammer Collection

NMAH.AC.0069

Robert S. Harding

1996



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Collection Overview

Repository:	Archives Center, National Museum of American History
Title:	William J. Hammer Collection
Date:	circa 1847-1989
Identifier:	NMAH.AC.0069
Source:	National Museum of American History (U.S.). Division of Electricity and Modern Physics
Creator:	Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Extent:	36 Cubic feet (124 boxes, 3 map-folders)
Language:	English .
Summary:	Original documents and papers generated by William J. Hammer and by various companies and individuals with whom he was associated. Includes material related to the research and inventions of Edison, Bell, Tesla, the Curies, etc.

Administrative Information

Acquisition Information

Collection donated by IBM, 1962.

Provenance

Collection transferred to the Archives Center from the Division of Electricity and Modern Physics (now Division of Work and Industry), September 9, 1983.

Processing Information

Collection processed by Robert Harding, 1996.

I would like to thank the staff of the Division of Electricity for their help and cooperation in the transfer of the collection, particularly Dr. Bernard Finn, Ray Hutt, Eliot Sivowitch, and Anastasia Atsiknoudas.

Several members of the Archives Center have helped me process this collection: Fuabeh Fonge and Elena Lawrence worked consistently over a summer arranging and describing portions of the collection; Don Darroch and Mumia Shimaka-Mbasu worked on the correspondence; and Evon Underhill has likewise worked on the collection and typed most of this register.

I would like to thank Bob Selim for his editing of this document. I would also like to particularly thank John Fleckner for his continuing guidance in this project.

Preferred Citation

William J. Hammer Collection, Archives Center, National Museum of American History

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Biography of William J. Hammer

William Joseph Hammer, assistant to Thomas Edison and a consulting electrical engineer, was born at Cressona, Schuylkill County, Pennsylvania, February 26, 1858, and died March 24, 1934. His parents were Martha Augusta Bech (1827-1861) and William Alexander Hammer (1827-1895). He attended private and public schools in Newark, New Jersey, and university and technical school lectures abroad.

On January 3, 1894, Hammer married Alice Maud White in Cleveland, Ohio. They had one daughter, Mabel (Mrs. Thomas Cleveland Asheton). Alice Hammer died in 1906.

In 1878 Hammer became an assistant to Edward Weston of the Weston Malleable Nickel Company. In December 1879 he began his duties as laboratory assistant to Thomas Edison at Menlo Park, New Jersey. He assisted in experiments on the telephone, phonograph, electric railway, ore separator, electric lighting, and other developing inventions. However, he worked primarily on the incandescent electric lamp and was put in charge of tests and records on that device. In 1880 he was appointed Chief Engineer of the Edison Lamp Works. In this first year, the plant under general manager Francis Upton, turned out 50,000 lamps. According to Edison, Hammer was "a pioneer of Incandescent Electric Lighting"! (Hammer's memoranda and notes, Series 2).

In 1881 Edison sent Hammer to London as Chief Engineer of the English Electric Light Co. In association with E. H. Johnson, general manager, Hammer constructed the Holborn Viaduct Central Electric Light Station in London. This plant included three, thirty-ton "Jumbo" steam-powered dynamos (generators), and operated 3,000 incandescent lamps. Holborn was the first central station ever constructed for incandescent electric lighting. Hammer began its operation on January 12, 1882, by lighting the Holborn Viaduct.

In 1882 Hammer also installed a large isolated lighting plant containing twelve Edison dynamos at the Crystal Palace Electric Exposition and the Edison Exhibit at the Paris Electrical Exposition.

At this time Hammer also designed and built the first electric sign. The sign spelled the name "Edison" in electric lights, and was operated by a hand controlled commutator and a large lever snap switch. It was erected over the organ in the Crystal Palace concert hall.

In 1883 Hammer became Chief Engineer for the German Edison Company (Deutsche Edison Gesellschaft), later known as Allegemeine Elektricitaets Gesellschaft. Hammer laid out and supervised the installations of all Edison plants in Germany. While in Berlin he invented the automatic motor-driven "flashing" electric lamp sign. The sign, which flashed "Edison" letter by letter and as a whole, was placed on the Edison Pavilion at the Berlin Health Exposition in 1883.

On his return to the United States in 1884, Hammer took charge of some of Edison's exhibits, including Edison's personal exhibit, at the International Electrical Exhibition held under the authority of the Franklin Institute in Philadelphia. There he built the first flashing "Column of Light." He also became confidential assistant to E. R. Johnson, president of the parent Edison Electric Light Company. Together with Johnson and Frank J. Sprague, he became an incorporator of the Sprague Electric Railway and Motor company. He also was elected a trustee and the company's first secretary.

Hammer installed an all-electric house at Newark, New Jersey in 1884 and he devised various electrical devices and contrivances for an unusual party for friends and colleagues. (See "Electrical Diablerie" beginning on page 6).

At the end of 1884 Hammer became chief inspector of central stations of the parent Edison Electric Light Company. For over two years he made financial, mechanical, and electrical reports on the various stations throughout the United States. During 1886-87 he was chief engineer and general manager of the Boston Edison Electric Illuminating Company. He also acted as contractor for the company. He laid $140,000 of underground tubing and installed Sprague Electric Motors.

In 1888, acting as an independent engineer, he was placed in charge of completing the 8,000 light plant of the Ponce de Leon Hotel in St.Augustine Florida. At the time this was the largest isolated incandescent lighting plant ever constructed. Also in 1888 Hammer was appointed consulting electrical engineer to the Cincinati Centennial Expostition, and as a contractor designed and installed over $40,000 worth of electrical effects.

Hammer was appointed Edison's personal representative remarked, "There are a lot of crowned heads in the Edison business. How many of them am I subservient to?" Mr. Edison answered "You take no instructions except from Thomas A. Edison." Hammer asked "What are your instructions?" Mr. Edison replied, 'Hammer, I haven't any. Go and make a success of it.' In Paris he set up and operated all of Edison's inventions, which embraced nineteen departments and covered 9,800 square feet of space. He also built a huge Edison lamp forty-five feet high employing 20,000 lamps. Edison remarked, 'He had entire charge of my exhibit at the Paris Exposition, which was very successful." This was the largest individual exhibit at the Exposition, costing $100,000. Mr. Edison replied, "I want you to go right out and have a card engraved William J. Hammer, Representative of Thomas A. Edison. You are the only representative I have here," and he complimented him on his work adding, "The French government will do something handsome for you for your work." Hammer replied that he would not raise his hand to get it and did not believe in giving such honors to people who seek them. Mr. Edison said, "You are wrong. You are a young man and such things are valuable. At any rate if there's anyone in this exhibition who deserves recognition, you do, and I'm going to see you get it' (Hammer's memoranda and notes, Series 2). Thirty-four years later, in 1925, through the personal influence of Edison, Hammer was made Chevalier of the Legion of Honor by the French government.

In 1890 Hammer returned to the United States and opened an office as a consulting electrical engineer. He was in private practice until 1925, making reports, conducting tests, and giving expert testimony in patent suits.

On January 31, 1890, Hammer formed the Franklin Experimental Club of Newark where boys could come and carry on experiments, build apparatus, and listen to lectures. Hammer equipped the laboratory at his own expense. One side was an electrical laboratory and the other a chemical laboratory. About forty-five boys joined. Each boy had a key to the club and a section of a bench with his own drawer for keeping notes, tools, and other equipment. In 1892 the structure was destroyed by fire from a saloon next door, ending Hammer's plans for a large and useful institution.

In 1896 Hammer was elected president of the National Conference of Standard Electrical Rules, which prepared and promulgated the "National Electric Code."

In 1902 in Paris, Hammer visited Pierre and Marie Curie, the discoverers of radium and polonium. They gave him nine tubes of radium and one of polonium to bring back to the United States. He also acquired some sulphide of zinc, with which he mixed radium carbonates, producing a beautifully luminous powder. This was the first radium-luminous material ever made. By mixing the powder with Damar varnish he produced the first radium-luminous paint. He was also the first person to make colored (and white) luminous materials. In 1907 he invented and patented a process for producing colored phosphorescent materials by combining phosphorescent and fluorescent substances.

Back in the United States in the fall of 1902 and into 1903, Hammer applied his radium-luminous materials to thirty different objects: luminous dials for clocks and watches, toys, artificial flowers, radium luminous gun sights, taps and pulls for lamp sockets, switches, keyholes, push buttons, telephone transmitters, poison bottle labels, a small plaster figure, push pins, and writing implements among others. He did not patent the invention due to the scarcity and high cost of radium, but later in an important suit involving foreign and American patents of radium-luminous materials, his testimony and that of other noted scientists and professionals of the day who had visited his home and laboratory proved that his work completely anticipated that of all inventors both in the United States and abroad. In 1902 he was one of the first persons to be burned with radium.

Hammer gave eighty-eight lectures on the Curies' work and on radium and radioactive substances. He wrote the first book published on radium, *Radium and other Radioactive Substances*, 1903. Hammer proposed and used radium for cancer and tumor treatment, successfully treating and curing a tumor on his own hand in July 1903. Tie also

supplied several hospitals with radioactive water he had made and conducted extensive experiments with x-rays, cathode-rays, radium-rays, ultraviolet lights, phosphorescence, fluorescence, and cold-light. He was probably the first to suggest many wartime uses for radium-luminous materials, such as airplanes, instruments, markers, barbed-wire, and landing fields.

Hammer also did important work with selenium, a nonmetallic element that resembles sulphur and tellurium chemically. It is obtained chiefly as a by-product in copper refining, and occurs in allotropic forms. A grey stable form varies in electrical conductivity depending on the intensity of its illumination and is used in electronic devices. Hammer invented selenium cells and apparatus, and suggested industrial uses for selenium and other light-sensitive cells.

In 1886 Hammer devised a system for automatically controlling street and other lights by use of a selenium cell. In 1892 he designed a torpedo that could be steered by searchlight and selenium cell. In the early 1900s he suggested many other uses for "light" cells, including burglar alarms, dynamo control, buoy, railroad signaling, automatic gun firing, transmission of music, stethoscope recorder, automatic operating shutters, automatic boiler feed, snow recorder, and electric motor control.

At the St. Louis Exposition of 1904 Hammer was Chairman of the Jury for Telegraphy, Telephony, and Wireless. He was also a member of the "Departmental" Jury ("Applied Science: Electricity") and of the committee appointed to organize the International Electrical Congress at St. Louis in 1904.

In 1906 Hammer received the "Elliott Cresson" gold medal from the Franklin Institute for his "Historical Collection of Incandescent Electric Lamps," accumulated over thirty-four years. This collection received a special silver medal at the International Electrical Exposition at the Crystal Palace, London, England, in 1882, and "the Grand Prize" at the St. Louis Exposition of 1904.

During the First World war Hammer served as a major on the General Staff of the, Army War College, Washington, D.C., where he was attached to the Inventions Section of the War Plans Division and later to the operations Division at the war Department in charge of electrical and aeronautical war inventions. He did special work at the U.S. Patent office, marking and delaying patents that might be useful to the enemy and served on the Advisory Board of Experts attached to the Alien Property Commission. He was elected Historian general of the Military order of the World War (1926-1928) and was a member of the Society of American Military Engineers.

Hammer was an early aeronautics enthusiast and became the owner of one of the first airplanes sold in the United States to an individual. Even in his last few years of his life, Hammer's interest in airplanes did not wane. In 1931, by the permission of the Secretary of the -Navy, Hammer made a twelve-hour flight in the Los Angeles dirigible from the Lakehurst, New Jersey airdrome along the coast of the Atlantic Ocean to New York, flying over New York City at night.

Hammer served on numerous committees. In 1916 he was a member of a special committee, appointed by the Aeronautical Society of America. one of his responsibilities on this committee was to recommend methods for the formation of a reserve force of civilian aviators for the Army. At the start of World War I, Hammer was appointed chairman of a committee on camouflage by the Aeronautical Society. During the war, he flew airplanes and tested sound devices and was also among the first five selected out of thousands for the dissemination of propaganda into many countries. He also examined documents and papers captured from spies and prisoners of war to see if these material contained any technical matter of value to the U. S. Army.

Hammer traveled extensively as a delegate of the Military Order of World War I. For example, in 1922 he attended the aeronautical Congress and Flying Meet in Detroit, Michigan. In the same year he also attended Immigration Conferences of the National Civic Federation in New York.

Between 1922 and 1928 Hammer intensified his efforts in collecting and organizing autographed portraits of eminent scientific men, a project he had been working on for over forty-five years. Tie displayed many of these portraits with his Historical Collection of Incandescent Electrical Lamps in -his New York home. At this time he also prepared an elaborate bibliography on selenium and its industrial and scientific applications.

Major William Joseph Hammer, described by Edison as "my most valuable assistant at Menlo Park" died of pneumonia March 24, 1934.

Scope and Contents

This collection includes original documents and papers generated by Hammer and by various companies and individuals and various secondary sources assembled by Hammer between 1874 and 1934. Hammer's lifelong association with the foremost scientists of his day -- Edison, Bell, Maxim, the Curies, the Wright brothers, and others - afforded him a unique opportunity to collect materials about the development of science along many lines.

This collection, which includes rare historical, scientific, and research materials, was donated by the International Business Machine Corporation to the Museum of History and Technology in 1962 and held by the Division of Electricity. In 1983 it was transferred to the -Archives Center. The collection was badly disorganized when received and contained many fragile documents in poor condition. The collection was organized and arranged as reflected in this register.

The collection documents in photographs, manuscripts, notes, books, pamphlets, and excerpts, the beginnings of electrical technology. In its present state, it comprises four series: Series 1 contains twenty-two boxes of the William J. Hammer Papers, containing both biographical and autobiographical material; Series 2 has twenty boxes of material on Edison; Series 3 consists of thirty-three boxes of reference material; and Series 4 holds twenty-one boxes of photographs and portraits. See the container list beginning on page 39 for more detailed information on the contents of the collection.

Most of the material in the collection is chronologically arranged. However, in some cases alphabetical arrangement has been employed, for example, in the arrangement of portraits of eminent men of electrical science (Series 4, Boxes 78-80, 100-101), and the arrangement of publications (by authors' last names).

Hammer did original laboratory work upon selenium, radium, cathode rays, x-rays, ultra-violet rays, phosphorescence, fluorescence, cold light, and wireless. These aspects of his career are reflected in many parts of the collection: in Series 1 there are articles, notes, diagrams, sketches, graphs,, and correspondence; in Series 3 articles, magazines, news clippings, and bound pamphlets. Tie contributed many technical writings, some of which are found in Series 1.

Papers detailing Hammer's aeronautical activities were transferred to the National Air and Space Museum. They consist of two scrapbooks and one cubic foot of aeronautical photographs of balloons, airplanes, and gliders and one-half cubic foot of correspondence. For further information contact the National Air and Space Museum Archives at (202) 357-3133.

Arrangement

The collection is divided into four series.

Series 1: William J. Hammer Papers, 1851-1957

Series 2: Edisonia, 1847-1960

Series 3: Reference Materials, 1870-1989

Series 4: Photographs, 1880-1925

'Electrical Diablerie'

"ELECTRICAL DIABLERIE"

N.Y. World, January 3, 1885 and Newark, *N.J. Daily Advertiser and Journal*, January 3, 1885

Some years ago, (1884) on New Year's eve, an entertainment was given at the home of Mr. William J. Hammer, in Newark, N.J., which, for the display of the powers of electricity has seldom, if ever, been equaled. Mr. Hammer, who has for years been associated with Mr. Edison, both in this country and in Europe, desiring to give his old classmates, the "Society of Seventy-Seven," a lively and interesting time, invited them to "an electrical dinner"at his home.

The invitations which were sent out were written upon Western Union telegram blanks with an Edison electric pen. When the guests arrived and entered the gate, the house appeared dark, but as they placed foot upon the lower step of the veranda a row of tiny electric lights over the door blazed out, and the number of the house appeared in bright relief. The next step taken rang the front door bell automatically, the third threw open the door, and at the same time made a connection which lit the gas in the hall by electricity.

Upon entering the house the visitor was invited to divest himself of his coat and hat, and by placing his foot upon an odd little foot-rest near the door, and pressing a pear-shaped pendant hanging from the wall by a silken cord, revolving brushes attached to an electric motor brushed the mud and snow from his shoes and polished them by electricity. As he was about to let go of the switch or button, a contact in it connected with a shocking coil, caused him to drop it like a hot potato. Up-stairs was a bedroom which would be a fortune to a lazy man; he had only to step on the door sill and the gas was instantly lighted. The ceiling was found to be covered with luminous stars, arranged to represent the principal constellations in the heavens-while comets, moons, etc., shone beautifully in the dark. By placing one's head on the pillow, the gas, fifteen feet away, would be extinguished and the phosphorescent stars on the ceiling would shine forth weirdly, and a phosphorescent moon rose from behind a cloud over the mantel and slowly describing a huge arch disappeared behind a bank of phosphorescent clouds on the other side of the room; by pressing the toe to the foot-board of the bed the gas could again be relit.

Pouring a teacup of water into the water clock on the mantel and setting the indicator would assure the awakening of the sleeper at whatever hour he might desire. There was also in the hall outside the room a large drum, which could be set to beat by electricity at the hour when the family wished to arise. The whole house was fitted throughout with electric bells, burglar alarms, fire alarms, telephones, electric cigar lighters, medical coils, phonographs, electric fans, thermostats, heat regulating devices, some seven musical instruments, operated by electricity, etc.

Upon the evening referred to nearly every. piece of furniture in the parlor was arranged to play its part. Sit on one chair and out went the gas, take another seat and it would light again; sitting on an ottoman produced a mysterious rapping under the floor; pressure on some chairs started off drums, triangles, tambourines, cymbals, chimes and other musical instruments; in fact, it seemed unsafe to sit down anywhere. The quests stood about in groups and whispered, each hoping to see his neighbor or a new comer caught napping.

One visitor (Brown) secured an apparently safe seat, and was telling a funny story--he had left electricity far behind--but just as he reached the climax, a pretty funnel-shaped Japanese affair like a big dunce cap, that seemed but a ceiling ornament which was held in place by an electromagnet, dropped from overhead and quietly covered him up, thus silently extinguishing the story and the story-teller.

A big easy chair placed invitingly between the folding doors joining the double, parlors sent the unwary sitter flying out of its recesses by the sudden deafening clamor of twenty-one electric bells hidden in the folds of the draperies hanging in the doorway. In a convenient position stood the silver lemonade pitcher and cup, the former was filled with the tempting beverage, but no matter how much a guest might desire to imbibe one touch convinced him that the pitcher and cup were so heavily charged with electricity as to render it impossible for him to pour out a drink or even to let go until the electricity was switched off from the hidden induction coil.

Some one proposed music, and half a selection had been enjoyed when something seemed to give way inside the piano, and suddenly there emanated from that bewitched instrument a conglomeration of sounds that drowned the voices of the singers, and the keys seemed to beat upon a horrible jangle of drums, gongs and various noise-producing implements which were fastened inside of and underneath the piano.

After the guest were treated to a beautiful display of electrical experiments, under the direction of Mr. Hammer, and Professor George C. Sonn, they were escorted to the dining-room, where an electrical dinner had been prepared and was presided over by 'Jupiter," who was in full dress, and sat at the head of the table, where by means of a small phonograph inside of his anatomy he shouted, "Welcome, society of Seventy-Seven and their friends to Jove's festive board." The menu was as follows: "Electric Toast," "Wizard Pie," "Sheol Pudding," "Magnetic

Cake," "Telegraph Cake," "Telephone Pie," "Ohm-made Electric Current Pie," "Menlo Park Fruit," "Incandescent Lemonade," "'Electric Coffee" and "Cigars," etc., and music by Prof. Mephistopheles' Electric Orchestra.

About the table were pretty bouquets, and among the flowers shone tiny incandescent lamps, while near the center of the table was placed an electric fan which kept the air cool and pure, and at each end was a tiny Christmas tree lighted with small incandescent lamps, planted in a huge dish of assorted nuts and raisins. Each lamp had a dainty piece of ribbon attached to it upon which the initials of the Society and the date were printed, and each guest received a lamp to take away with him as a souvenir of the occasion. Plates of iced cakes made in the form of telephones, switches, bells, electric lamps, batteries, etc., stood on each side of the center piece.

Promptly at 12 o'clock, as the chimes of the distant churches came softly to the ears of the assembled quests, pandemonium seemed to change places with the modest dining-room. A cannon on the porch, just outside the door, and another inside the chimney, were unexpectedly discharged; and at this sudden roar, every man sprang back from the table; the lights disappeared; huge fire-gongs, under each chair beat a tattoo. The concussion produced by the cannon in the fireplace caused several bricks to come crashing down the chimney, and as the year of 1884 faded away, the table seemed bewitched. The "Sheol Pudding" blazed forth green and red flames illuminating the room, tiny tin boxes containing 'Greek" fire which had been placed over each window and door were electrically ignited by spirals of platinum iridium wire heated by a storage battery and blazed up suddenly; the "Telegraph Cake" clicked forth messages said to be press reports of the proceedings (it was also utilized to count the guests and click off the answers to various questions put to it); bells rang inside the pastry; incandescent lamps burned underneath the colored lemonade; the thunderbolt pudding discharged its long black bolts all over the room (long steel spiral springs covered with black cloth) and loud spirit rapping occurred under the table. The silver knives, forks and spoons were charged with electricity from a shocking coil and could not be touched, while the coffee and toast (made by electricity) were made rapidly absorbed; the "Magnetic Cake' disappeared; the "Wizard" and "Current Pies' vanished, and 'Jupiter" raising a glass to his lips began to imbibe.

The effect was astonishing! The gas instantly went out, a gigantic skeleton painted with luminous paint appeared and paraded about the room, while Jupiter's nose assumed the color of a genuine toper! His green eyes twinkled, the electric diamonds in his shirt front (tiny lamps) blazed forth and twinkled like stars, as he phonographically shouted "Happy New Year'. Happy New Year!" This "Master of Cererionies' now becoming more gentle, the guests turned their attention to the beautiful fruit piece, over four feet high, that stood in the center of the table. From the fruit hung tiny electric lamps, and the whole was surmounted by a bronze figure of Bartholdils "Statue of Liberty;" uplifted in "Miss Liberty's" right hand burned an Edison lamp no larger than a bean.

The dinner finished, and there was much that was good to eat, notwithstanding the "magical" dishes which they were first invited to partake of, speeches were delivered by Messrs. Hammer, Rutan, McDougall, 'Brown, Duneka, and Dawson, and an original poem was read by Mr. Van Wyck. Upon repairing to the parlors the guest saw Mr. Hammer's little sister, May, dressed in white and mounted upon a pedestal, representing the "Goddess of Electricity:" tiny electric lamps hung in her hair, and were also suspended as earrings, while she held a wand surmounted by a star, and containing a very small electric lamp.

Not the least interesting display of electricity took place in front of the house, where a fine display of bombs, rockets, Roman candles, Greek fire and other fireworks were set off by electricity, which was by the way, the first time this had been accomplished. The guests were requested to press button switches ranged along the front veranda railing thus causing electricity from a storage battery to heat to a red heat tiny platinum iridium spirals attached to each fuse of the various pieces of fireworks thus sending up rocket after rocket, as well as igniting the other pieces which had been placed in the roadway in front of the house.

An attempt was made to send up a large hot air balloon to which was attached a tiny storage battery and an incandescent signal lamp but a sudden gust of wind caused the ballon to take fire as it rose fr(xn the ground. This constituted the only experiment made during the evening which was not an unqualified success. The innumerable electrical devices shown during the progress of the dinner were all operated by Mr. Hammer, who controlled various switches fastened to the under side of the table and attached to a switchboard, which rested on his lap, while the two cannons were fired by lever switches on the floor, which he operated by the pressure of the foot. Electricity was supplied by primary and storage batteries placed under the table. After an exhibition of electrical apparatus and

experiments with a large phonograph, the guests departed with a bewildered feeling that somehow they had been living half a century ahead of the new year."

Expositions and Exhibitions

The many Expositions held at the end of the 19th and the beginning of the 20th centuries were important for the Edison Electric Company's future business. In particular the Paris Electrical Exposition, 1881, and the Crystal Palace Exposition in London in 1892 were introductions for the company's international business enterprises. Edison, therefore, sent his ablest men from the Menlo Park staff (Batchelor, Hammer, Jehl, Johnson) to Europe to oversee the installation and promotion of the company's exhibits.

THE INTERNATIONAL PARIS EXPOSITION OF 1881

The International Paris Electrical Exposition was held during the summer of 1881. Many of Edison's electric lighting systems, ranging from arc lights to incandescent devices, were exhibited. A model of the Edison central-station lighting system showed an arrangement of incandescent lights within a complete electrical distributing system, including novel appliances and controls of the Edison system. "The completeness of its conception made a profound impression on the foremost European electrical engineers of that era." (Josephson, Matthew. *Edison, A Biography*. p. 252). Edison also exhibited his first "Jumbon generator. It was "direct-connected" to its driving engine, another area in which Edison pioneered. Edison improved upon the original design of William Wallace's "Telemachon' - a generator coupled to a water-powered turbine. Wallace had earlier in the decade produced the first dynamo in America.

Charles Batchelor headed the Edison exhibits within Paris. Edison received many gold medals and diplomas and was awarded the ribbon of the Legion of Honor.

The William J. Hammer Collection contains various reports and catalogues exhibited at the International Exposition of Electricity. (Series 3, Box 44, Folders 1-4)

THE CRYSTAL PALACE EXHIBITION OF 1882

At the Crystal Palace Exhibition of 1882 in London, Edison displayed a great many of his inventions, including: the steam dynamo; specimens of street pipes and service boxes used in the Edison underground system of conductors, and the system of house conductors with devices for preventing abnormal increase of energy in house circuits; apparatus for measuring the resistance of his lamps, for measuring the energy consumed in lamps, and rheostats for restoring currents; also thermogalvano-meters, carbon rheostats, dynamometers, photometers, carbon regulators, Weber meters,, current regulators, and circuit breakers for controlling electric light circuits; the carbon relay, the pressure relay, and the expansion relay; the telegraph system in Morse characters; and the Roman character automatic telegraph.

Thomas Edison also exhibited the carbon telephone, the musical telephonograph, telephone repeater, and numerous apparatus for demonstrating the method of varying the resistance of a closed circuit by contact with carbon, illustrative of the experimental factors of the Edison carbon transmitter. Incandescent lamps, the process of the manufacture of lamps, and various designs of electric light chandeliers were also on display.

Hammer won the silver medal at the exposition for the first complete development of the incandescent electric lamp from its initial stages to date. At the exhibition the first hand-operated flashing electric lamp sign was displayed, which was invented and built by Hammer.

The collection contains photographs of the Edison dynamo, and the Edison Electric Lighting Plant of 1882 erected by Hammer. The official Catalogue of the International Electric and Gas Exhibition, and various articles from the Daily Telegraph, Daily Chronicle, and Daily News are also included within the collection (Series 4, Box 99 and Series 3, Box 42, Folder 1-2).

THE BERLIN EXPOSITION OF 1883.

The Berlin Exposition of 1883 had the first motored flashing electric sign designed, built and operated by Hammer. The electric sign spelled out the word "Edison" letter by letter and was used on the Edison pavilion in the Health Exposition. It has most features of today's flashing sign.

The collection contains two photographs of the first flashing sign (Series 4, Box 99).

THE FRANKLIN INSTITUTE INTERNATIONAL ELECTRICAL EXHIBITION OF 1884

The Franklin Institute International Electrical Exhibition was held in Philadelphia from September 2 to October 14, 1884. Many of Edison's companies had display booths at the exhibition. The Edison Electric Light Company showed in operation their system of house lighting as supplied from a central station. The Edison Company for Isolated Lighting exhibited their system of lighting factories, hotels, hospitals, and other places situated beyond the reach of a central lighting station. A full assortment of Edison lamps and dynamos also made up parts of other exhibits. Also displayed at the exhibition was the first flashing column of light, which Hammer designed and built.

Included within the collection are a variety of photographs of the exhibitions. Four pamphlets also are contained in the collection (Series 3, Box 1, Folder 3), (Series 4, Box 99).

THE EXPOSITION OF THE OHIO VALLEY AND THE CENTRAL STATES OF 1888

The Exposition of the Ohio Valley and Central States, in Cincinnati from July 4 to October 27, was in honor of the one hundredth anniversary of the settlement of Cincinnati. The exposition showed the progress and ramifications of the first hundred years of this settlement.

The space occupied by permanent buildings was greater than that covered by any building for exhibiting purposes on the Western continent. T',ie exposition developed the Electric Light Plant to make a special feature of electric lighting in the evening. Several companies used this opportunity to make exhibits of their apparatus and for their equipment to be used for illumination. The Edison Lamps were used for displays in showcases and pavilions of exhibitors of the Park Building.

The collection contains photographs of the halls of the exposition and a poster which is a souvenir of the electrical display of the exposition. An official Guide of the Centennial Exposition of the Ohio Valley and Central States is included within the collection. (Series 4, Box 99), (Series 3, Box 42, Folder 4).

THE SUMMER CARNIVAL AND ELECTRICAL EXHIBITION, ST. JOHN, NEW BRUNSWICK, 1889

The Summer Carnival and Electric Exhibition held at St. John, New Brunswick, Canada was to celebrate the opening of the Canadian Pacific Short Line to St. John and Portland. The Electrical Exhibition was the most popular of the displays present, containing the Monster Edison Lanm, the Mysterious Electric Fountain, and many other inventions.

The William J. Hammer Collection contains a poster that illustrates some of the leading exhibits at the Electrical Exhibition (Series 4, Box 99).

PARIS UNIVERSAL EXPOSITION OF 1889

The Universal Exposition of 1889 held in Paris was larger than all previous expositions held there. The famous Eiffel Tower was its principal attraction.

A large portion of the exhibit hall within the Palace of Mechanical Industries contained Thomas Edison's electrical inventions, including various electric lamps for use in houses. Variations of the telephone also were shown. During the Paris Exposition Europeans were exposed to the phonograph for the first time. Hammer represented Edison's interests at the Paris Exhibition.

The collection contains articles from New York World, New York Herald and Electrical World on Edison's exhibits at the Paris Exposition (Series 3 , Box 44, folder 6). A scrapbook of photographs from the exhibition showing exhibit buildings and halls and loose photographs showing Edison's exhibits are included in the collection (Series 4, Box 98).

THE CRYSTAL PALACE EXHIBITION OF 1892

The Crystal Palace Exhibition of 1892 was held in London. Hammer displayed a great variety of products in the machine room of the Electrical Exhibition. Sockets for controlling individual incandescent lamps on alternating currents and the Ward Arc Lamp for use on incandescent circuits were just a few of the items displayed. Edison's

companies displayed specimens of all types of incandescent electric lamps for public and private illumination. They also displayed primary batteries for use in telegraphy, telephony, household work, and engines.

The William, J. Hammer Collection contains a variety of photographs of the electrical exhibition. The Official Catalogue and Guide of the Electrical Exhibition is also contained within the collection (Series 4, Box 99), (Series 3, Folder 2, Box 42).

LOUISIANA PURCHASE EXPOSITION, 1904

The Louisiana Purchase Expostition of 1904, held in St. Louis, Missouri from April 30 to December 1, celebrated the centennial of the Louisiana Purchase. The nineteen million people who attended made it the largest exposition ever. The year 1904 marked the twenty-fifth anniversary of Edison's invention of the carbon filament lamp and central power station system.

F.J.V. Skiff, the exhibits classifier for the fair, developed a twofold classificatory arrangement. He organized exhibits in a sequential synopsis corresponding to the sixteen different departments of the exposition. The principal exhibition buildings were built in the shape of a fan. The departments of education, art, liberal arts, and applied sciences-including electricity - headed the classification, Skiff noted, because they "equip man for the battle and prepare him for the enjoyments of life.' Departments devoted to displays of raw materials such as agriculture, horticulture, !inning, forestry, fish and game came next. Anthropology, social economy, and physical culture concluded the classification.

The Hammer collection contains photographs of Hammer with other Chairmen of Domestic and Foreign Jurors of the Electricity Section of the International Jury of Awards of the Louisiana Exposition and Hammer as chairman of the jury on telegraphy, telephony, and wireless. (Series 4, Box 102). A pamphlet by the American Telephone and Telegraph Company on the exhibit of the Radiophone at the Department of Applied Science is also part of the collection (Series 3, Box 42, Folder 5).

THE PANAMA-PACIFIC EXPOSITION OF 1915

The Panama Pacific Exposition celebrated the opening of the Panama Canal and the four hundredth anniversary of the European discovery of the Pacific Ocean. It was held in San Francisco from February 20 to December 4, 1915. Approximately nineteen million people attended the exposition.

The eleven main buildings of the exposition were grouped around a central court of the Sun and Stars at the entrance of which was the famous Tower of Jewels. The main group of exhibits comprised the Palaces of Education, Liberal Arts, Manufactures, Varied Industries, Mines,

Transportation, Agriculture, Horticulture and all kinds of food products. During the exposition special days were set aside to honor industrialists Henry Ford and Thomas Edison. The Pacific Gas and Electric Company provided a large searchlight to flash out a Morse code greeting on the nighttime sky for their arrival.

The William J. Hammer Collection contains a pamphlet on the "Illumination of the Panama-Pacific International Exposition." The pamphlet describes the lighting of the exposition, and the use of arc lamps ' searchlights, incandescent electric lamps, and gas lamps (Series 4, Box 99), (Series 3, Box 43).

Names and Subject Terms

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

Subjects:

Cathode rays
Electrical engineering
Fluorescence
Incandescent lamps
Phosphorescence
Radium

Selenium cells
X-rays

Types of Materials:

Correspondence -- 1930-1950
Photographs -- 1850-1900
Photographs -- 20th century

Names:

Batchelor, George
Bell, Alexander Graham, 1847-1922
Berliner, Emile, 1851-1929
Curie, Marie
Curie, Pierre
Edison, Thomas A. (Thomas Alva), 1847-1931
Jehl, Francis
Johnson, Edward H.
National Museum of American History (U.S.). Division of Electricity and Modern Physics
Sprague, Frank J.
Tesla, Nikola, 1856-1943
Upton, Francis R.

Container Listing

Series 1: William J. Hammer Papers, 1851-1957

Scope and Contents: This series consists of correspondence, mostly incoming, from 1879-1935, but also includes diaries, notebooks, biographical information, patent material, pamphlets, writings by Hammer, and a badge, 1925. The correspondence consists mostly of letters to and from Hammer regarding his project of thirty-four years, his Historical Collection of Incandescent Electric Lamps for which he built a permanent home in New York City. There are also many letters from companies and businesses, universities and individuals, for whom Hammer served as a consultant. Some of Hammer's correspondents were well known scientists of the day: Alexander Graham Bell, Henri Becquerel, Pierre and Madam Curie, Lord Kelvin, and Secretary S.P. Langley of the Smithsonian Institution, to mention a few. There is extensive correspondence related to Hammer's research, including his work on selenium and radium. Also included is correspondence between Hammer and professional societies in which he held membership. The correspondence between 1925 and 1935 is devoted to the cataloguing of his collection and to the establishment of a museum at Dearborn, Michigan, in honor of Thomas A. Edison, a project Henry Ford agreed to fund.

Arrangement: The correspondence is arranged in two chronological subseries: Boxes 1-9, Incoming and outgoing, 1879-1935; and Boxes 9-9A, outgoing, 1902-1928. The reason for this arrangement is not known. Each document is numbered and a calendar listing of each letter showing names of correspondents and date has been prepared. (See "List of Correspondence" in control file)

Subseries 1.1: Correspondence, 1873-1957

Scope and Contents: Individual letters have been numbered

Box 1	Incoming and outgoing, 1879-1895
Box 2	Incoming and outgoing, 1896-1903
Box 3	Incoming and outgoing, 1904-1913
Box 3, Folder 10	[Orville Wright to William Hammer [letter], July 17, 1913 1 Item (Ink on paper.; 11.0" x 8.5") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000013 (AC scan number) Thank you note for the copies of "Chronolgy [sic] of Aviation." Duplicate, marked 900. Names: Wright, Orville, 1871-1948 Genre/Form: Correspondence
Box 3, Folder 10	[Orville Wright to William Hammer : letter], July 17, 1913 1 Item (Ink on paper.; 7.1" x 7.3") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)

	Author: Wright, Orville, 1871-1948 Language: English. Notes: AC0069-0000014 (AC scan number) Acknowledgment for copies of "Chronolgy [sic] of Aviation." Photographic copy (?), cropped, marked 901. Topic: Aviation Genre/Form: Letters (correspondence) -- 1900-1950 Correspondence
Box 4	Incoming and outgoing, 1873-1892; 1914-1917
Box 5	Incoming and outgoing, 1893-1903
Box 6	Incoming and outgoing, 1904-1908
Box 7	Incoming and outgoing, 1909-1920
Box 8	Incoming and outgoing, 1921-1930
Box 9	Incoming and outgoing, 1931-1935; 1955; 1957
Box 9	Outgoing, 1902-1928 Notes: • 1902-1903 (letterpress book) • 1903 (letterpress book) • April 1924 • May-October 1928
Box 10	Outgoing, 1903-1904; 1904; 1904-1905
Box 11, Folder 8	Alphabetical index to correspondence

Subseries 1.2: Biographical Materials, 1863-1904

Box 11, Folder 1	Personal family correspondence, 1863-1904
Box 11, Folder 2	Genealogical Materials
Box 11, Folder 3	Identification cards; club cards; passport
Box 11, Folder 4	School papers, 1876-1878
Box 11, Folder 5	Personal sketches
Box 11, Folder 6	Clippings and pamphlets; "Electrical Diablerie"
Box 11, Folder 7	News clippings

Box 12, Folder 1	Biographical materials
Box 12, Folder 2	Biographical materials
Box 12, Folder 3	Biographical materials
Box 12, Folder 4	Awards & certificates
Box 12, Folder 5	Notes, correspondence, speeches
Box 12, Folder 6	Notes re: phonograph
Box 12, Folder 7	Miscellaneous sketches and personal memos of Hammer
Box 12, Folder 8	Autobiography of Hammer prepared for the "Edison Pioneers"

Subseries 1.3: Notebooks and Diaries, 1880-1932

Box 13, Folder 1	Menlo Park notebook, 1880
Box 13, Folder 2	Notebook on dynamo-electric and magneto-electric machines, 1882
Box 13, Folder 3	Notebook (a), 1885 & 1886
Box 13, Folder 4	Notebook (b), 1885 & 1886
Box 13, Folder 5	Notebook (c), 1885 & 1886
Box 13, Folder 6	Notebook from his trip to Europe, 1900
Box 13, Folder 7	Notes and sketchbook, 1900
Box 14, Folder 8	Notebook (monthly notes about Edison)
Box 14, Folder 9	Note-and sketchbook, undated
Box 14, Folder 10	Notebook (shopping list)
Box 14, Folder 11	Diary kept by Hammer when working on Siemens Electric Railroad case, 1898
Box 14, Folder 12	Diary, 1900
Box 14, Folder 13	Diary, 1916
Box 14, Folder 14	Daily journal, 1906

Box 14, Folder 15	Loose paper from Hammer's journal, 1906
Box 15, Folder 16	Date book, 1929
Box 15, Folder 17	Loose paper from Hammer's: Date book, 1929
Box 15, Folder 18	Memoranda of inventions of T.A. Edison
Box 15, Folder 19	Inserts from Hammer's lab notebook #3
Box 15, Folder 20	Loose paper from notebook #8: Deutschen Edison Gesellschaft
Box 15, Folder 21	Miscellaneous notes of Hammer
Box 15, Folder 22	News clippings, 1924-1932

Subseries 1.4: Writings by Hammer, 1851-1931

Box 16, Folder 1	Autobiography of Hammer prepared for the Edison Pioneers; Correspondence: 1925, with Henry Schroeder and John W. Howell regarding their book, The History of the Incandescent Lamp; Hammer's biographical notes
Box 16, Folder 2	Writings on Edison
Box 16, Folder 3	Edison--man and Genius, The Philadelphia Record, Oct. 1931
Box 16, Folder 4	Writings on Edison - General
Box 16, Folder 5	Address of the President of the Edison Pioneers; Stories of Menlo Park Days related by Hammer; and other writings, April, 1920
Box 16, Folder 6	Edison and His Invention: A Lecture delivered before the Franklin Institute at Philadelphia, by Hammer, February 4, 1889
Box 16, Folder 7	Notes: on visits to the Edison Installations; on the radiophone at the New York Electrical Exhibition
Box 16, Folder 8	'Mock-up' for William Wallace and His Contribution to the Electrical Industries by Hammer
	General Notes and Writings:
Box 17, Folder 1	Biography of Moses Gerrish Farmer prepared for Hammer by Ms. Farmer at the request of Moses G. Farmer, Feb. 18, 1892
Box 17, Folder 1	Notes on radium, radiation, and radioactivity, prepared by Hammer for Encyclopedia Americana

Box 17, Folder 1	Notes on Ernest Rutherford
Box 17, Folder 1	B.F. Miessner, E.E. '17, "A New Solution for the Problem of Selectivity in Torpedo Control," Purdue Engineering Review
Box 17, Folder 1	Phosphorescence, Scientific American Supplement, No.1191, Oct. 29, 1898
Box 17, Folder 1	To The Question of 'Sensational Claims' of Enormous Figures for Radio-Active Bodies: What Professor Soddy says (verbally), and what a German scientist says (translated)
Box 17, Folder 1	Observations on electrostatic phenomena
Box 17, Folder 1	Hammer, "Transportation of a Busy People," The Independent
Box 17, Folder 1	Miscellaneous notes
	Patents:
Box 17, Folder 2	George H. Benjamin, "The History and Effect of Electrical Patents," Electrical Review, Vol. 38, No. 2, January 12, 1901
Box 17, Folder 2	Hammer, "Apparatus for measuring Light," Application filed Oct. 31, 1906; Western Electric, June 6, 1888
Box 17, Folder 2	John Elfreth Watkins, "What Uncle Sam is Doing," The Ladies' Home Journal, Apr. 1907
Box 17, Folder 2	William Hard, "Butter Business,* Everybody's Magazine, 1914
Box 17, Folder 2	French patents: issue dates
Box 17, Folder 2	specification for Hammer's invention of the Photo Electric Transmission
	Diagrams, Drawings, Sketches, and Graphs:
Box 17, Folder 3	Types of selenium cells selected by Hammer selenium cell controlling electric circuit
Box 17, Folder 3	Unidentified graph
Box 17, Folder 3	Automatic indicator and recorder of time and duration of snow storms
Box 17, Folder 3	Device for starting an electric motor by means of a selenium cell, 1914
Box 17, Folder 3	Protection of safes by means of the selenium cell

Box 17, Folder 3	Method of Operating Iron Shutters on Buildings
Box 17, Folder 3	Steering a torpedo by means of a searchlight
Box 17, Folder 3	Minchins impulsion type of photo-electric cell, 1890
Box 17, Folder 3	Musical note produced by revolving shutter in a vacuum (J.W. Giltay's Suggestion)
Box 17, Folder 3	Photograph showing 3 h.p. motor & 3 h.p. generator Notes: Supplying a band of lamps which Hammer started and stopped many times by waving his hand between an acetylene jet and a selenium cell
Box 17, Folder 3	Apparatus invented and operated by Hammer used in his lecture at the College of the City of New York, Apr. 17, 1903
Box 17, Folder 3	System of automatically controlling street lights and other lights by means of the selenium cell invented by Hammer, 1886
Box 17, Folder 3	Automatic boiler feed by selenium cell control of the pump, 1910
Box 17, Folder 3	Selenium cell to protect safe or homes from burglars
Box 17, Folder 3	Method of recording length of time of operation at a motor or other apparatus, or its time of starting and stopping, 1910
	Selenium:
Box 17, Folder 4	Selenium notes and slides (only notes)
Box 17, Folder 4	Writings about selenium, (not titled), undated
Box 17, Folder 4	Hammer, "Selenium Cells Bring Back Age of Miracles," New York Daily Tribune, Mar. 20, 1910
Box 17, Folder 4	Data on selenium
Box 17, Folder 4	Notes on selenium
Box 17, Folder 4	Article titled "Mr. Hammer Talks on Selenium"
Box 17, Folder 4	Advertisements for graphite - selenium cells, London
Box 17, Folder 4	Hammer's typed notes on selenium

Box 17, Folder 4	Acetylene Flame Apparatus, Riohmer Selenium Cell, Relays and Battery for Operating Electric Lamp, Bell, Motor and Horn, Scientific American Supplement, May 30, 1903
Box 17, Folder 4	Hammer, "Photoelectric Property of Selenium" (Letter to the Editor), Electrical Review, Oct. 19, 1907
Box 17, Folder 4	Bibliography of selenium
Box 17, Folder 4	The Properties and Applications of selenium
Box 17, Folder 4	Proposed Use of Selenium in Signaling, The Electrical Engineer, Aug. 7, 1908
Box 17, Folder 4	Several untitled notes and data on selenium
	Edisonia:
Box 17, Folder 5	Hammer's notes
Box 17, Folder 5	Creator of Yellow Kid once Served Edison, New York World, Oct. 14, 1928
	Radioactivity:
Box 17, Folder 6	Hammer, Radioactivity, prepared for the Encyclopedia Americana
Box 17, Folder 6	Hammer's claims that he was the first person to propose and utilize radioactive solutions internally
Box 17, Folder 6	Scientific American Compiling Department, Radio-activity
Box 17, Folder 6	List of radioactive substances by Dr. Karl Hofmann
	Correspondence:
Box 17, Folder 7	Regarding Patents
Box 17, Folder 7	Personal to Hammer
Box 17, Folder 7	From Jared Sparks of Cambridge College to Henry C. Cary, April 24, 1851 Notes: (Nothing to do with Hammer or Edisoniana)
Box 17, Folder 7	Copies of correspondence
	Radium:
Box 17, Folder 8	Undated memorandum signed by Hammer

Box 17, Folder 8	Hammer, "Radium," prepared for the Encyclopedia Americana
Box 17, Folder 8	Lecture on radium by Hammer
Box 17, Folder 8	Academy of Science & Art, Pittsburgh, Synopsis of Hammer's lecture on "Radium and its Remarkable Properties" delivered on Oct. 22, 1903
Box 17, Folder 8	Hammer, "Radium and Other Radioactive Substances," Scientific American, No. 1429, May 23, 1903
Box 17, Folder 8	Madame Pierre Curie and Professor Curie copy made for Hammer by Paul F. Mathelay
Box 17, Folder 8	Hammer, proving claim to first thinking of medical use of radium
Box 17, Folder 8	Listing of persons to whom Hammer's book on radium was sent
	Hammer's notebooks:
Box 17, Folder 9	Notebook on selenium, undated
Box 17, Folder 9	Notebook on selenium, 1883
Box 17, Folder 9	Notebook on phosphorescence, 1902-1903
Box 18, Folder 1	Hammer (President), National Conference on Standard Electrical Rules, 1896
Box 18, Folder 1	Hammer, Important European Electrical and Engineering Developments at the Close of the Nineteenth Century, Feb. 28, 1901
Box 18, Folder 2	The Telephonoqraph, 1902
Box 18, Folder 2	Edison's Tunqstate of Calcium Lamp: Radium, Polonium and Actinium, 1902
Box 18, Folder 2	Report on the Faller Automatic Telephone Operator, 1902
Box 18, Folder 2	An Automatic Telephone operator, 1903
Box 18, Folder 2	The Faller Automatic Telephone operator, (Reprint), 1903
Box 18, Folder 2	Radium and Other Radioactive Substances with a Consideration of Phosphorescent and Fluorescent Substances; Polonium, Actinium, and Thorium, 1903
Box 18, Folder 3	Notes on Recent Electrical and Scientific Developments Abroad, 1903

Box 18, Folder 3	Collection of Incandescent Electric Lamps, Journal of the Franklin Institute, 1906
Box 18, Folder 3	Electric Lighting by Incandescence, 1907
Box 18, Folder 3	Surface Properties of Aluminum and Zinc, 1907
Box 18, Folder 3	A Flight Over Paris, 1907
Box 18, Folder 4	Chronology of Aviation, 1911
Box 18, Folder 4	The William J. Hammer Historical Collection of Incandescent Lamps, 1913
Box 18, Folder 4	Transactions of the New York Electrical Society, 1913
Box 18, Folder 4	The Edison Monthly, Jul. 1914
Box 18, Folder 4	The Edison Monthly, Jul. 1928
Box 18, Folder 5	The William J. Hammer Historical Collection of Incandescent Electric Lamps, undated
Box 18, Folder 6	Compliments of William J. Hammer, undated

Subseries 1.5: Secondary Writings About Hammer, 1880-1913

Box 19, Folder 1	Bibliography on selenium, April 1912
Box 19, Folder 1	References on selenium (includes dates, names of authors, where found, and nature of work)
Box 19, Folder 1	Bibliography on selenium (updated and expanded) 2 Copies
Box 19, Folder 1	A New Type of Selenium Cell, Western Electrician, November 23, 1907
Box 19, Folder 1	The Hudson-Fulton Celebration Commission's "List of References (Misc.) not found", Sept. 25-Oct. 9, 1909
Box 19, Folder 1	Library of the Engineering Societies, New York City, references on selenium cells compiled, from chemical abstracts only, for Hammer, Dec. 3, 1913
Box 19, Folder 2	Blueprints, of Hammer's inventions:, 1882-1887
Box 19, Folder 2	Diagram of Maschine zur Aufertigung von Drabt-Tsclirleinewand;, 1882

Box 19, Folder 2	Lamp detacher and attacher;, Nov. 16, 1883
Box 19, Folder 2	Can opener, 1887
Box 19, Folder 2	Diagram of "Une Remarguable Experience de Transmission Phonographique et Telephonique entre New York et Philadelphie" demonstrated by Hammer in his lecture on "Edison et ses Inventions" at the Franklin Institute, Feb. 4, 1889
Box 19, Folder 2	Schutzqitter fur Glublampen, undated
Box 19, Folder 2	Sdromunterbrecher, undated
Box 19, Folder 2	Several copies of unidentified diagrams in blueprints
Box 19, Folder 3	Paper on Paris Exposition of 1900
Box 19, Folder 3	Extracts from paper read by Mr. John Gavey, Electrician of His Majesty's Posts and Telegraphs, before the Institute of Electrical Engineers of Great Britain, December, 1900; said paper being upon the electrical features of the Paris Exposition of 1900
Box 19, Folder 4	Articles and notes on Hammer's inventions
Box 19, Folder 4	Notice of Hammer's lecture on "Electrical Wonders," Union Hall, March 11, 1887 Notes: Includes synopsis of the lecture
Box 19, Folder 4	Photo copies of "The John Scott Legacy Medal and Premium" awarded to Hammer for his "Telephone Relay," including a drawing of, and an article on, Hammer's long distance sound experiment, 1889
Box 19, Folder 4	The W. J. Hammer Telephone Relay, Western Electrician, April 5, 1902
Box 19, Folder 4	Articles on Hammer's incandescent lamp prepared by Earl N. Fridley for his New York Sunday Tribune but never used
Box 19, Folder 4	Scrap notes
Box 19, Folder 5	Identified & unidentified sketches, drawings, tracings & diagrams
Box 19, Folder 6	Identified sketches, drawings, tracings, and diagrams of incandescent electric lamps, 1880
Box 19, Folder 6	Vacuum apparatus for extracting the air from Edison's Electric lamps at Edison's laboratory, July 8, 1880
Box 19, Folder 6	First Steam-tight globe for incandescent lamp, 1880 or 1881
Box 19, Folder 6	Electric signs, March 1880

Box 19, Folder 6	Cheap and simple form of Edison lamps
Box 19, Folder 6	original motor driver "Flasher", 1883
Box 19, Folder 6	Fasting plug, Dec. 6, 1882
Box 19, Folder 6	original of all 'Bug Cut Outs", 1882
Box 19, Folder 6	Glass sealed ball galvanometer, Feb. 21, 1883
Box 19, Folder 6	Regulator for controlling two circuits at one time, April 7,1883
Box 19, Folder 6	Phantom Shadow, Aug. 24, 1893
Box 19, Folder 6	Testing apparatus, Nov. 23, 1883
Box 19, Folder 6	Can locking plug switch with multiple fuses, Sept. 30, 1886
Box 19, Folder 6	Multiple fuse, Oct. 12, 1896
Box 19, Folder 6	Snap switch for breaking heavy currents; patented May 17, 1887
Box 19, Folder 6	Circuit tester, June 20, 1887
Box 19, Folder 6	Balance indicator and feeder ampere meter, July 8, 1887
Box 19, Folder 6	Safety device for electrical circuits, patented Feb. 12, 1889
Box 19, Folder 7	Unidentified

Subseries 1.6: Holborn Viaduct Project, London, 1882

Box 20, Folder 1	Hammer's notebook on first central station, 1881-1882
Box 20, Folder 1	Reports of the Streets Committee to the Commissioners of Sewers of the City of London: "Proceedings Relative to the Applications for an Extension of the Experiments in Electric Lighting," London, 1882
Box 20, Folder 1	Something More than the Electric Lighting Bill, Sir Frederick Bramwell, F.R.S., 1882
Box 20, Folder 1	Extract from Report of the Streets Committee on Electric Lighting, London, 1880
Box 20, Folder 1	Pamphlet on electric lighting
Box 20, Folder 1	Map of the City of London's Electric Lighting, 1882-1883

Box 20, Folder 1	Report of Drs. Hopkinson and Fleming on the Holborn Viaduct Installation, July, 1982
Box 20, Folder 2	The First Central Station for Incandescent Lighting Electric World and Engineer, Vol. 42, no. 10, by Hammer, 1904
Box 20, Folder 2	Correspondence, March-July, 1882
Box 20, Folder 2	Report on the central station, Holborn Viaduct by J. Hopkinson and J.A. Fleming, London, July 1882
Box 20, Folder 3	News clippings
Box 20, Folder 3	E.H. Johnson's notes re: London, England, 1881-1882
Box 20, Folder 3	Plan showing the illumination of Holborn Viaduct by the Edison Electric Light System, 1881-1882
Box 20, Folder 3	Photo copy of article "The First Central Station for Incandescent Lighting" by Hammer, Electric World and Engineer, Vol. 42 #10, Mar. 5, 1904
Box 20, Folder 4	Holborn Viaduct central station: Plan showing course of post office cable
Box 20, Folder 4	Hammer's Notes
Box 20, Folder 4	Copy of Report of Trial of the Second 146 JP Boiler supplied by the Babcock & Wilcox Company to the Edison Electric Light Company
Box 20, Folder 4	Electric Light Act, 1882
Box 20, Folder 4	Hammer's notes on the first central station for incandescent electric lighting, Mar. 5, 1904
Box 20, Folder 4	Envelope containing damaged drawings

Subseries 1.7: Patent Materials, 1883-1930

Box 21, Folder 1	Hammer German Patent: Glockenscherissel Fur Elektrische Gluhlampen #27680
Box 21, Folder 1a	Correspondence, Hammer to Messrs: Dyer & Seeley regarding patents, 1886
Box 21, Folder 2	Hammer's Patent: Combination-Tool #363,331, May 17, 1887
Box 21, Folder 3	Hammer's Patent & Advertising Card: Device for Attaching & Detaching Electric Lamps #363,332, May 17, 1887
Box 21, Folder 4	Hammer's Patent: Indicator for Electrical Lighting Systems #363,333, May 17, 1887

Box 21, Folder 5	Hammer's Patent Specifications, and Diagrams for Electrical Switch, #363,334, May 17, 1887
Box 21, Folder 6	Hammer & Francis R. Upton Patents: Connecting Device for Electrical Conductors; Safety Catch for Electrical Circuits #368,764, August 23, 1887
Box 21, Folder 7	Hammer's Letters of Patents: Specifications and Diagrams: for Can-opener, #369,108, August 30, 1887
Box 21, Folder 8	Hammer's Patent: Safety Device for Electrical Circuits #397,715, February 12, 1889; #400,669, April 2, 1889
Box 21, Folder 9	Hammer's Patent: Selenium Cells #888,802, Sep. 17, 1907
Box 21, Folder 10	Hammer's Patent: Apparatus for measuring Light # 888,801, May 26, 1908
Box 21, Folder 11	Hammer's Patent Method of Measuring Light #888,802, May 26, 1908
Box 21, Folder 12	Hammer's (Letters of) Patents: Specifications, and Diagrams: Art of making Phosphorescent Colors original #868,779, Oct. 22, 1902 Notes: Reissue #12,812 June 16, 1908
Box 21, Folder 13	Hammer's Deposit Slip for Photograph, "A Scientific Hand," left at Library of Congress, Sept. 14, 1906
Box 21, Folder 14	Hammer "To Whom It May Concern" Letters re: patents: Philosophical Apparatus; Luminescent Signs, and Correspondence regarding same #437,146, 1909-1910
Box 21, Folder 15	Signed Agreement between Hammer & Upton, March 1, 1887 Notes: Regarding Upton's Financial Assistance
Box 21, Folder 16	Patents and Patent Infringement Data regarding radium-luminous materials
Box 21, Folder 17	George F. Barker's Affidavit, for use in the Suit of Edison Electric Light Co. and Edison General Electric Co. Vs ?
Box 21, Folder 18	Decision of the U.S. Circuit Court of Appeals upholding the Edison Incandescent Lamp patent, Extra the Electrical Engineer, Oct. 4, 1892
Box 21, Folder 19	Hammer's Electrician's Pocket Tool
Box 21, Folder 20	Misc. Periodical Articles, including "Reforms in the Patent System," by Thomas Ewing, Jr. The Electrical Engineer, May 6, 1891
Box 21, Folder 21	Correspondence, 1899-1918
Box 21, Folder 21a	Correspondence, Incoming & outgoing, April 1892; October 27, 1902 Notes: Regarding long distance sound transmission

Box 21, Folder 22	Hammer's Notebook on Electrical Patents 1883-84; Misc. patent notes; A List of Some of Hammer's Electrical Inventions 1880-85, 1883-1885
Box 21, Folder 23	Hammer's Sketch; Neon Tube Window Display Signs Brochure; Miscellaneous negatives
Box 21, Folder 24	Diagrams of unidentified Hammer inventions, 1907-1908
Box 21, Folder 25	Clippings: talking movies, television, radio, 1909-1930
Box 21, Folder 26	Hammer's list of television patents 24, 1906-1926
Box 21, Folder 27	Illustrations and photographic cards of Hammer's patents
Box 21, Folder 28	Hammer - patent material - testimony, interferences
Box 21, Folder 29	Hammer's testimony: Old Colony Trust Company vs. the City of Omaha, 1912

Subseries 1.8: Artifacts, 1925

Box 22	Badge, 1925
Box 22	Original Tags from Hammer Collection of objects

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Series 2: Edisonia, 1847-1960

Scope and Contents: This series consists of the following material about the Edison inventions: announcements; articles; blueprints, copies of agreements; copies of Edison patents, and other patent materials; correspondence; data relative to the Edison Central Stations; diagrams; Edison Pioneer constitution and by-laws; Edison storage battery data; exhibits to legal cases; excerpts; general inspection reports and suggestions to officers and Directors of fifteen Edison central Stations; general reference articles on Edison; invitations; journals; magazines; manuscripts; material on phonographs; material relative to legal proceedings; memoranda of some central stations; memoranda on various lamp companies,- Menlo Park data; newsclippings; newspapers; notes; obituaries; pamphlets; speeches; and testimonies.

Subseries 2.1: Pearl Street Station, New York, 1904

Box 23, Folder 1	Notes on the planning of Central Station at 255 & 277 Pearl Street
Box 23, Folder 1	Estimates for Central Station
Box 23, Folder 1	News clippings from "Electrical Experimenter,' Electrical Review, New York Tribune, etc
Box 23, Folder 1	The Historic Pearl Street New York, Edison Station by John W. Lieb, first electrician of the station Edisonia, 1904

Model of the [Edison Electric Co.] Pearl Street Station exhibited at St. Louis [caption under image: black & white photoprint], Circa 1905
1 Item (5.0" x 7.9")

Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000009 (AC scan number)

Silver gelatin on paper.

Series ?, box 23. folder 1.

Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.

Scale model of the 1882 station exhibited at the Louisiana Purchase Exposition in 1904.

Topic: Power stations
Exhibitions
Models
Genre/Form: Photographs -- 1900-1910 -- Black-and-white photoprints

Box 23, Folder 1	Economy test at the Harrisburg Electric Light Co.'s Central Station, Harrisburg, Pa. by Hammer
Box 23, Folder 1	Hammer's note of time of first excavation

Subseries 2.2: Edison Effect - Etheric Force And Related Data, 1879-1930

Box 24, Folder 1	Proceedings of the Physical Society of London, 1882-1884
Box 24, Folder 1	Pages of the Electric Engineer, vol. 23 no. 463, March 17, 1897
Box 24, Folder 1	A few pages from Scientific American, Jul. 4, 1903
Box 24, Folder 1	Three Makers of Vacuum Tube History Popular Science Monthly, Aug. 1922
Box 24, Folder 1	Wonders of the Thermionic Valve Make a Romance of Broadcasting by Professor J. A. Fleming, New York Herald Tribune, Apr. 13, 1924
Box 24, Folder 1	Invisible Black Light may Now Trap Burglars or Cure Disease by E. E. Free, New York Herald Tribune, Oct.17, 1926
Box 24, Folder 1	Photo-electric Cell Passes Exacting Fatigue Tests Electrical World, Jul. 30, 1927
Box 24, Folder 1	The Theory and characteristics of Radiotrons by Dr. Lewis R. Koller and Henry Schrolder, General Electric Review, Dec. 1927
Box 24, Folder 1	Radio Times, The Journal of the BBC, Sept. 21, 1928
Box 24, Folder 1	Edison's Contribution to Wireless by Francis Jehl, Edison Monthly, Dec. 1928
Box 24, Folder 1	Some Photo-electric and Glow Discharge Devices and Their Application to Industry by J.V. Bresky and E.O. Erickson, Journal, AIE, Feb. 1929
Box 24, Folder 1	1929 advertisement from the Radio Corporation, 1929
Box 24, Folder 1	The Family Tree of the Thermionic Tubes, 1930
Box 24, Folder 1	Conductivity of Incandescent Carbon Filaments and of Space Surrounding Them by J.W. Howell
Box 24, Folder 2	A few pages of a notebook of Hammer's, Oct. 3, 1884
Box 24, Folder 3	Curve sheet made by Hammer Feb. 26, 1881, used in his test with Edison's incandescent electric lamps Transactions of the American Institute of Electrical Engineers, Vol. 14 no. 2, February, 1897
Box 24, Folder 3	Copies of The Edison Effect and Its Modern Applications by Clayton H. Sharp, 1921
Box 24, Folder 3	Francis Jehl, "The Edison Effect Tube," The Edison Monthly, Feb. 1926
Box 24, Folder 3	Notes
Box 24, Folder 3	News clippings

Box 24, Folder 3	Photocopy of pages of Engineering Societies Library, nos. 5071 and 5072
Box 24, Folder 4	Royal Institution of Great Britain, Weekly Evening Meeting of April 4, 1879, 1879
Box 24, Folder 4	Proceedings of the Physical Society of London from January 1882 to March 1884, 1882-1884
Box 24, Folder 4	Transactions of the American Institute of Electrical Engineers, vol. 11, no. 4, April 1884
Box 24, Folder 4	The Audion - its Action and Some Recent Applications, Lee DeForest, Journal of the Franklin Institute, Jul. 1920
Box 24, Folder 4	Etheric Force by Edwin W. Hammer, Oct. 1922
Box 24, Folder 5	Manuscripts-- Edison Effect Notes: Includes drawings depicting standard of blackening, for Edison incandescent lamp (1880-1887); "Experiments with Light Sensitive Cells," H.M. Bayer, *Radio News*, April 1929; "Personal," *Electrical Engineering*, Feb. 1931

Subseries 2.3: Edison Electric Light Company: Lamps, Distribution, 1866-1902

Box 25, Folder 1	Data relative to the Edison Central Stations for incandescent electric lighting
Box 25, Folder 1	Hammer's references to articles relating to incandescent lamps
Box 25, Folder 1	Hammer, "Edison's Tungstate of Calcium Lamp", Jan. 3. 1902
Box 25, Folder 1	Data relative to the incandescent lamp
Box 25, Folder 1	License agreement
Box 25, Folder 1	Notes on the meter
Box 25, Folder 1	Edison's distribution systems
Box 25, Folder 1	List of central illuminating companies in the United States, June 1887
Box 25, Folder 1	Estimate of cost and annual operating expenses of small central stations for the system of electric lighting
Box 25, Folder 1	Prices charged to Edison licensee companies
Box 25, Folder 1	Advertising pamphlet on Edison Electric Light Company
Box 25, Folder 2	Exhibits to legal cases regarding patents

Box 25, Folder 3	Exhibits to legal cases regarding patents
Box 25, Folder 3	List of Edison Central Station Illuminating Companies in the United States, April 22, 1866
Box 25, Folder 3	Other lists (tendered as exhibits)
Box 25, Folder 3	Saving in copper by the Edison 'Feeder System" and Edison "Three wire System"
Box 25, Folder 3	Correspondence relating to the Edison Electric Light Company, 1895
Box 25, Folder 3	Trust Agreement between the Farmers Loan and Trust Company with Edison General Electric Company and Edward H. Johnson and Frank J. Sprague
Box 25, Folder 3	Miscellaneous Notes
Box 25, Folder 3	William J. Hammer, Electric Lighting by Incandescence Notes: Tables showing the comparative cost of lighting for one year (300 days) by the *Edison Incandescent Electric Light* and *The Gas Machine*
Box 25, Folder 4	Notes re: electric light, April 1879
Box 25, Folder 5	Edison lamp test results from Jehl in Vienna and Budapest to Hammer, undated
Box 25, Folder 6	Miscellaneous Machinery Blue prints
Box 25, Folder 7	News clippings: Edison's light and lighting system
Box 25, Folder 8	Notes from Edison notebook (in Edison's writing)

Subseries 2.4: General Inspection Reports On, And Suggestions To The Officers And Directors Of The Edison Central Stations, 1885-1886, May 1885-April 1886 and undated

	Cumberland, Maryland, 1886
Box 26, Folder 1	General Inspection Report, April 28, 1886
Box 26, Folder 1	Suggestions to the Officers and Directors, April 28, 1886
	Brockton, Massachusetts, 1885
Box 26, Folder 2	General Inspection Report, June 3, 1885
	Newburgh, New York, 1885

Box 26, Folder 3	General Inspection Report, Nov. 1885
Box 26, Folder 3	General Inspection Report, undated
	New York, 1886
Box 26, Folder 4	The Edison Meter and Contract Systems of Change, May 24, 1886
Box 26, Folder 4	The Standard Volt-meter (Explanation of Principles), undated
	Ashland, Pennsylvania, 1886
Box 26, Folder 5	General Inspection Report, March 18, 1886
Box 26, Folder 5	Suggestions, March 19, 1886
	Bellefonte, Pennsylvania, 1886
Box 26, Folder 6	General Inspection Report, April 19, 1886
	Harrisburg, Penssylvania, 1886
Box 26, Folder 7	General Inspection Report, August 29-30, 1885, 1886
Box 26, Folder 7	Special Inspection Report (General Complaints and Pressure Indicators), undated
Box 26, Folder 7	General Inspection Report, May 1885
	Hazelton, Pa:
Box 26, Folder 8	General Inspection Report, March 22, 1886
Box 26, Folder 8	Memorandum for Executive Committee, March 9, 1886
	Johnstown, Pa.:
Box 26, Folder 9	General Inspection Report, April 21, 1886
	Mt. Carmel, Pa.:
Box 26, Folder 10	General Inspection Report, March 22, 1886
Box 26, Folder 10	Criticisms and Suggestions to the Officers and Directors, March 23, 1886
	Shamokin, Pa.:

Box 26, Folder 11	General Inspection Report, April 2, 1886
Box 26, Folder 11	Criticisms and Suggestions to the Officers and Directors, April 2, 1886
	Sunbury, Pa.:
Box 26, Folder 12	General Inspection Report, April 10, 1886
	Tamaqua, Pa.:
Box 26, Folder 13	General Inspection Report, March 11, 1886
	Williamsport, Pa.:
Box 26, Folder 14	General Inspection Report, April 13, 1886
	Fall River, Lawrence, Sunbury:
Box 26, Folder 15	General Inspection Report on the Edison Central Station at:
Box 26, Folder 15	Fall River, Mass., May, 1885
Box 26, Folder 15	Lawrence, Mass., June 16, 1885
Box 26, Folder 15	Sunbury, Pa., April 10, 1886
Box 26, Folder 16	Edison Lamp Co.
	Memoranda on various companies, March-May, 1886:
Box 26, Folder 16	Hazelton Cos. Central Station, March 7, 1886
Box 26, Folder 16	Tamaqua Cos. Central Station, March 11, 1886
Box 26, Folder 16	Ashland Cos. Central Station, March 19, 1886
Box 26, Folder 16	Mt. Carmel Cos. Central Station, March 22, 1886
Box 26, Folder 16	Shamokin Cos. Central Station, April 2, 1886
Box 26, Folder 16	Sunbury Cos. Central Station, April 10, 1886
Box 26, Folder 16	Williamsport Cos. Central Station, April 16, 1886
Box 26, Folder 16	Bellefonta Cos. Central Station, April 17, 1886
Box 26, Folder 16	Johnstown Cos. Central Station, April, 21, 1886

Box 26, Folder 16	Mc Keesfort Cos. Central Station, April 26, 1886
Box 26, Folder 16	Cumberland Cos. Central Station, April 28, 1886
	Memoranda of central stations at:
Box 26, Folder 16	Hazleton, Tamaqua, Ashland, Mt. Carml, and Shamokin, April 19, 1886
Box 26, Folder 16	Williamsport, Bellefonte, Johnstown, Mc Keesport, and Cumberland, May 18, 1886

Subseries 2.5: Menlo Park; Electric Train; Incandescence, 1878-1960

	Menlo Park data, 1878-1935
Box 27, Folder 1	Hammer, "Life of Thomas A. Edison," copied from The Chicago Tribune, April 8, 1878
Box 27, Folder 1	Tests at Menlo Park on Babcock & Willcox Boiler, 1883
Box 27, Folder 1	Barker's Exhibit A: table from suit against The United States Electric Lighting Company
Box 27, Folder 1	List of early Edison men, mainly Menlo Park
Box 27, Folder 1	An unidentified list of names
Box 27, Folder 1	Notes relating to the early Edison companies and their associated interests from W.S. Andrews to Hammer, Nov. 10, 1914
Box 27, Folder 1	Notes on Francis R. Upton's test made at the Edison laboratory, 1878
Box 27, Folder 1	Exhibits to legal cases, including "Underground Conductor"
Box 27, Folder 1	Francis Jehl, 'Reminiscences of Menlo Park," Ford News, Feb. 1935
Box 27, Folder 1	The Edison Phonoplex System
Box 27, Folder 1	The Success of the Electric Light, North AmericanReview, Oct. 1880
	Correspondence, 1893-1925
Box 27, Folder 1	1893: To Messrs. Pyer and Seeley from Francis Upton regarding lamps at Menlo Park and Goegel (lamp # 4), 1893

Box 27, Folder 1	1913: To Upton from Jehl (copy), basically a biography of Upton at Menlo Park, 1913
Box 27, Folder 1	1925: To Mr. Lieb from Hammer regarding "The Story of Menlo Park", 1925
Box 27, Folder 1	Data on Edison Lamps made at Menlo Park
Box 27, Folder 2	Official envelope of the Edison Electric Lamp Co., Menlo Park, N.J.
	Articles and writings on electric inventions, 1922
Box 27, Folder 3	An Interview with the Father of the Central Station Industry by L.W. Morrow, Associate Editor of the Electric World, Sept. 9, 1922
Box 27, Folder 3	Photographs reproduced in the pages of The Electric Age
Box 27, Folder 3	Articles Notes: In *The Edison Monthly*, *The Electric Age*, *The General Electric Monogram*, *The Electrical Engineer* , *Ford News*, *The Electrical World*, *Cassier's Magazine*, *Popular Electricity*, and *Harper's News Monthly Magazine*
Box 27, Folder 3	Postcard showing the Edison Tower at Menlo Park
Box 27, Folder 3	Diagrams
Box 27, Folder 3	A short account of the first underground system used for incandescent lamps
Box 27, Folder 3	Data on Edison train telegraph
Box 27, Folder 3	Description of the Edison Lamp, The Edison Electric Light Company
	Lamps and electric wires, 1884-1960
Box 27, Folder 4	Pamphlets
Box 27, Folder 4	General Electric Co., Train Lighting with G. E. Tungsten and Tantalum Lamps, undated
Box 27, Folder 4	The Shelby Electric-Company, How to Sell Lamps, Shelby, Ohio, 1898
Box 27, Folder 4	General Electric Co., Kain Lamp Sales Offices, Harrison,N.J., The Edison Lamps, August, 1906
Box 27, Folder 4	U.S. Circuit Court, Southern District of New York, The Edison Socket Case: Text of opinion of Judge Lac and Injunction Order, in the case of Edison Electric Light Company against William J. Newton, Oct. 13, 1894

Box 27, Folder 4	Die Wechsel and Drehstromgeneratoven, 1960
Box 27, Folder 4	U.S. Court of Appeals, Northern District of New York, The Edison company Socket Case, Full text of the Opinion of the U. S. Circuit Court, Feb. 14, 1895
Box 27, Folder 4	Several loose pages of a pamphlet on electric wires
Box 27, Folder 4	General Electric Co., Harrison, N.J., Edison Lamps Standard of the World, pamphlet no. 3366, undated
Box 27, Folder 4	General Electric Co.Harrison, N.J., Price List No. 5191, G. E. Tungsten Lamps for Battery Service, Low Volt and Miniature, 1908
Box 27, Folder 4	General Electric Co.,. Harrison, N.J., Price List No. 5131, Edison Miniature Incandescent Lamps, Sept. 22, 1904
Box 27, Folder 4	The Edison United Manufacturing Co., N.Y., Wiring Tables for the use of Edison, April, 1888
Box 27, Folder 4	Clippings and loose papers
Box 27, Folder 4	Clippings of the London Times, Oct. 6, 1884; the New York Times, March 21, 1924; unidentified news clippings, 1884, 1924
Box 27, Folder 4	Copy of Horoscope for Feb. 11, undated
Box 27, Folder 4	Blue Print diagram of The Standard New Construction Third Ave. Railway, New York
Box 27, Folder 4	'Edison Standard Gage; Table of Dimensions, Weight and Resistance of Pure Copper Wires"
Box 27, Folder 4	Several loose prints
	Writings about the light bulb in Menlo Park, 1881-1934
Box 27, Folder 5	Edison Pioneers, The Story of Menlo Park, undated 2 Copies
Box 27, Folder 5	McGraw-Hill Company Inc., A Glance at Early Electrical Literature, Jun. 21, 1919
Box 27, Folder 5	United States Patent office, N.Y., Interference No.27,074, William J. Hammer's sworn statement re. the tungsten Filament, Oct. 18, 1907
Box 27, Folder 5	The Count du Moncel, "Incandescent Electric Lamps at the International Exhibition of Electricity," Van Nostrand's Engineering Magazine, vol. 25, Dec. 1881

Box 27, Folder 5	J.J. Marshall, "The Development of the Manufacture of the Edison Incandescent Lamp,"March 16, 1905., 1881-1905
Box 27, Folder 5	Francis Jehl, "Reminiscences of Menlo Park," Ford News, Mar. 1934
Box 27, Folder 5	Edison Medal Association's List of executive committee, and of the general committee
Box 27, Folder 5	Enlivening Incidents at Menlo Park, The Edison Monthly, New York, Jul. 1923
Box 27, Folder 5	W.F.D. Crane, "Table of Electrical Horse Powers", August 2, 1889
Box 27, Folder 5	miscellaneous articles; news clippings
	Booklets containing electrical notes, 1881-1930
Box 27, Folder 6	J.R. McKee and W.S. Andrews, Historical Notes, General Electric Company, New York City, 1930
Box 27, Folder 6	United States Patent Office, Sawyer and Man vs. Thomas A. Edison, June 10, 1881
Box 27, Folder 6	A booklet containing questions relating to meter department; questions and answers relating to running of dynamos; and questions and answers relating to running of engine and boiler. (Booklet not titled)
Box 27, Folder 7	The Manufacture of the Edison Mazda Lamps by Henry Schroeder
Box 27, Folder 7	Edison Incandescent Lamps for Isolated Plants
Box 27, Folder 7	Duffus, R.L. "Our Electric Light has its Jubilee", New York Times, Oct., 1928

Subseries 2.6: Newspapers; Obituaries, 1929-1931

Box 28, Folder 1	Articles in the following newspapers Notes: • *New York Times*, Oct. 19, 1931, and Oct. 25, 1931 • *New York Journal*, Oct. 19, 1931 • *New York Evening Post*, Oct. 19, 1931 • *New York American*, Oct. 19, 1931, and Oct. 25, 1931 • *New York World Telegram*, Oct. 19, 1931 • *New York Herald Tribune*, Oct. 18, 1931 • The *New York Sun*, Oct. 19, 1931 • and the *Philadelphia Record*, Oct. 19, 1931
Box 28, Folder 2	Newspapers carrying articles on the Edison Inventions, Oct. 20, 1929 Notes: Includes articles in the *New York Inquirer*, Oct. 19, 1932; the *New York World Telegram*, August 10-15, 1931; *New York Times*

Box 28, Folder 3	Articles on Edison, 1931 Notes: In: *The Boston Globe*, Oct. 29,?; *The New York Times*, Oct. 25, 1931; *New American*, Oct. 27, 1931; *Philadelphia Record*, Oct. 19, 1931; *New York World Telegram*, Oct. 19, 1931; *New York*, Oct.1931; *New York Herald Tribune*, Oct. 19, 1931 & Oct. 20,1931
Box 28, Folder 3	Copy of poem "Thomas Alva Edison 1847-1931"1 by H.I. Phillips
Box 28, Folder 3	Card announcing private services for Edison from Mrs. Thomas Alva Edison to Mr. Wm. J. Hammer
Box 28, Folder 3	News clippings
Box 28, Folder 4	Telegram and Articles re Edison's death, 1931
Box 28, Folder 4	Telegram from W.S. Barstow to major Wm.. J. Hammer announcing the death of Edison
Box 28, Folder 4	Various newspaper accounts of Edison's death, and biographical accounts of the life and achievements of Edison, 1931
Box 28, Folder 5	Newspaper clippings carrying tributes to Edison

Subseries 2.7: Speeches, Testimonials, Invitations, 1893-1938

	Notes on Dinners and Luncheons, 1912-1937
Box 29, Folder 1	The New York Edison Company, Dinner Commemorating Fifty Years of Edison Service: Seating List, Sep. 12, 1932
Box 29, Folder 1	The New York Edison Co. Guest List at the Thomas A. Edison Luncheon, Oct. 9, 1912 3 Copies
Box 29, Folder 1	The New York Edison Company, Dinner in Honor of Thomas Alva Edison, Sept. 11, 1922 2 Copies
Box 29, Folder 1	A Dinner in Honor of Thomas Alva Edison Upon the occasion of the Fiftieth Anniversary of his Invention of the Electric Light and of the Dedication of the Edison Institute of Technologv, Independent Hall, Greenfield, Michigan, Oct. 1,1929
Box 29, Folder 1	Edison Celebration Radioed to World", New York Times, Oct. 22, 1929
Box 29, Folder 1	Seating List, Dinner to Thomas A. Edison and in Commemoration of Forty years of Edison Services in New York City, Sept. 11, 1929

Box 29, Folder 1	A Dinner: To Thomas Alva Edison, Hotel Astor: New York, (two copies), May 24, 1928
Box 29, Folder 1	Edner Treppchen Deinhard, Commemorating the 65th Anniversary of Thomas A. Edison, Menu, L ewellyn Park, Orange, N.J., Feb. 10, 1912 2 Copies
Box 29, Folder 1	Card from Mrs. Thomas Alva Edison to Mr. Hammer, inviting him for dinner on February 12,(?) at Glenmont, Llewellyn Park
Box 29, Folder 1	Edison Pioneers, Eighteenth Annual Meeting and Luncheon of the Edison Pioneers and Celebration of the 89th Birthday Anniversary of Thomas Alva Edison, New York (includes Menu), Feb. 11, 1936
Box 29, Folder 1	Edison Pioneers, Nineteenth Annual Meeting and Luncheon of the Edison Pioneers, and Celebration of the 90th Birthday Anniversary of Thomas Alva Edison, New York City, (includes a menu and seating list), Feb. 11, 1937
Box 29, Folder 1	From the President and Board of Directors of the New York Edison Co., to Hammer inviting him for dinner on Sept. 12, 1932
Box 29, Folder 1	Supplement to the Oct. 1922 issue of the Edison Monthly, Photograph of attendants at the Testimonial Dinner tendered to Thomas Alva Edison by the New York Edison Company, Sept. 11, 1922
	Medals, 1912-1928
Box 29, Folder 2	Announcement by the Society of Arts and Sciences of the award of its Gold medal for Science to Thomas Alva Edison at a presentation dinner on May 24, 1928
Box 29, Folder 2	American Institute of Electrical Engineers' by-laws of the Edison Medal Committee and deed of gift creating the Edison Medal, Jan. 1, 1919
Box 29, Folder 2	Copy of the Certificate of Award of the Edison Medal to William D. Coolidge, Feb. 15, 1928
Box 29, Folder 2	American Institute of Electrical Engineers' by-laws of the Edison Medal Committee and deed of gift creating the Edison medal, Oct. 15, 1912
Box 29, Folder 2	Edison medal Association's list of Committee and Executive Committee members
Box 29, Folder 2	Presentation Ceremonies of the Edison Medal at the Winter Convention of the American Institute of Electrical Engineers to Frank Conrad, Jan. 28, 1931; to Arthur E. Kennelly, Jan. 24, 1934

Box 29, Folder 2	The Edison Celebration, New York World, Nov. 8, 1928 From Robert T. Lozier to Hammer requesting his photograph and autograph
Box 29, Folder 2	Copy of the mounted photos of Thomas A. Edison and the Edison medalists, Journal of the A.I.E.E. (American Institute of Electrical Engineers), undated
Box 29, Folder 2	Program, Invitation to Hammer to presentation of Congressional medal awarded to Edison; copy of Joint Resolution 243
Box 29, Folder 2	Edison Medal for 1923 Awarded to John W. Lieb, Journal of the A.I.E.E., undated

Social Occasions, 1915-1929

Box 29, Folder 3	Card with blue ribbons labeled "Trans-Continental Telephone--Diamond Disc: Edison Day celebration Panama Pacific Exposition, Edison Laboratory, October 21, 1915" (three plastic cards)
Box 29, Folder 3	Program of the Civic Forum, National Testimonial to Thomas A.Edison, Carnegie Hall, New York, May 6, 1915
Box 29, Folder 3	W.A. Meadowcroft, Notable Events and Achievements in the Life of Thomas Alva Edison, compiled for the Annual meeting of Feb. 11, 1925 celebrating Edison's 78th Birthday
Box 29, Folder 3	Invitation card from Mrs. Thomas A. Edison to Hammer inviting Hammer for the celebrations of Mr. Edison's 65th birthday on February 10, 1912
Box 29, Folder 3	City of New York Committee, Light's Golden Jubilee, New York Plans Participation in Light's Golden Jubilee, Sep. 19, 1929
Box 29, Folder 3	List of names on Cup, Addenda, William S. Andrews
Box 29, Folder 3	Program of Dedication Exercises of the Commemorative
Box 29, Folder 3	Tablet near the site of the Edison laboratories and workshops at Menlo Park, N.J., May 16, 1925 2 Copies Notes: List of guests at the dedication exercises of the commemorative Tablet near the site of Edison Laboratories and workshops at Menlo Park, N.J.
Box 29, Folder 3	Pamphlet titled "Sixty-five Brilliant Rays" 5 Copies
Box 29, Folder 3	Card from Mrs. Edison to the Edison Pioneers and their families, inviting them to celebrate with her Thomas A. Edison's 74th birthday on February 11, 1921

	Speeches and Comments, 1893-1938
Box 29, Folder 4	To Thomas Alva Edison and Guest, Oct. 21, 1929 Notes: On the occasion of the first anniversary of the dinner at Greenfield, Michigan, given in celebration of the Golden Jubilee of Mr. Edison's invention of his incandescent electric light by Henry and Edsel Ford; Hammer's invitation
Box 29, Folder 4	Note from Henry Ford and Edsel B. Ford to Major Hammer, Oct. 21, 1929
Box 29, Folder 4	Henry Ford and Edsel B. Ford, Oct. 21, 1929 Notes: *Your Guide to the Celebration in Honor of Thomas Alva Edison*, Oct. 21, 1929, to their guests
Box 29, Folder 4	From E. E. Hutchison , Chief Engineer, Edison Co., N.J., Oct. 16, 1915 Notes: To W. J. Hammer, personal representative of Edison outlining plans for Edison's speech of October 21 over the transcontinental telephone
Box 29, Folder 4	Thomas Alva Edison addresses delivered at the presentation to Thomas Alva Edison of the medal bestowed upon him by the Congress of the United States, Oct. 20, 1928
Box 29, Folder 4	A brochure titled "America Marches Forward with Edison
Box 29, Folder 4	List of member, National Committee of the Thomas Alva Edison Foundation as of Feb. 10, 1936
Box 29, Folder 4	Edison's Part in Radio and Other Notable Achievements, distributed by Thomas A. Edison, Inc., Orange, N.J., 1930
Box 29, Folder 4	Program for Guglielmo Marconi commemoration, Dec. 19, 1938
Box 29, Folder 4	Hammer's announcement for 1904-1905 of Popular Scientific Lecture on Radium
	Articles:
Box 29, Folder 5	Journal of the A.I.E.E.., "Edison Medal Awarded to John White Howel,", Jan. 1925
Box 29, Folder 5	John White Howell, "Lamp Developments in America," Electrical World, Feb. 21, 1925
Box 29, Folder 5	A National Museum of Engineering and Industry, Journal of the A. I. E. E., vol. 44, Sept. 1925

Box 29, Folder 5	The History of an Art, Hammer's Historical Collection of Incandescent Electric Lamps, 1904
Box 29, Folder 5	The History of an Art,' Hammer's Historical Collection of Incandescent Electric Lamps as set up in the Engineering Societies' Building, New York City, 1913
Box 29, Folder 5	Material regarding historic wires:
Box 29, Folder 5	The first telegraph message sent around the world by President Roosevelt, Jul. 4, 1903
Box 29, Folder 5	Sections of historic wires
Box 29, Folder 5	Correspondence regarding wires
Box 29, Folder 5	News clippings from the Postal Telegraph, May, 1911; Scientific American Supplement, may 14, 1904; and several unidentified papers
Box 29, Folder 5	Tag attached to Niagara cable
Box 29, Folder 5	A wire section that carried the current by which President Cleveland electrically started the machinery of the Columbia Exposition, May 1, 1893
Box 29, Folder 5	Plastic card bearing the inscription "Section of 'Ferrantis' 10,000 volt underground cable, as used in London, England"

Material relative to incandescent lamps, 1904-1913

Box 29, Folder 7	Names of Lamps in the William J. Hammer Collection of incandescent electric lamps, 1913
Box 29, Folder 7	King, Moses. Great Electricians, 1909
Box 29, Folder 7	Hammer, The William J. Hammer Collection of Incandescent Electric Lamps, Franklin Institute, Philadelphia, 1906
Box 29, Folder 7	Hammer, The William J. Hammer Historical Collection of Incandescent Lamps, reprint from the transactions of the New York Electrical Society, 1913
Box 29, Folder 7	List of Edison's lamps
Box 29, Folder 7	Announcement regarding electric exhibition at the 10th Anniversary of the Commercial Establishment of Electric Lighting two pamphlets titled The William J. Hammer Historical Collection of Incandescent Lamps, being extracts from the Report of the Commission on " Science and Arts" of the "Elliot-Cresson" Gold Medal to Hammer, Apr. 1906

Box 29, Folder 7	Extracts from letters relative to Hammer's Historical Collection of Incandescent Electric Lamps
Box 29, Folder 7	Thomas A. Edison, "The Beginning of the Incandescent Lamp," Scientific American Supplement, no. 1480, May 14, 1904
Box 29, Folder 8	Miscellaneous notes and scraps

Subseries 2.8: General Reference Articles On Edison, undated

Box 30, Folder 1	Edison obituaries
Box 30, Folder 1	Franklin Experimental Club
Box 30, Folder 1	General reference articles on Edison (a)
Box 30, Folder 1	General reference articles on Edison (b)
Box 30, Folder 1	General reference articles on Edison (c)
Box 30, Folder 1	News clippings
	Publications, 1890-1936
Box 30, Folder 7	Catalogue of the exhibit of Edison's inventions at the Minneapolis Industrial Exposition 1890, together with a general description of his work, New York City, 1890
Box 30, Folder 7	The William J. Hammer Historical Collection of Incandescent Electric Lamps, extract from the report of the Commission on "Science and Arts" of the Franklin Institute in making the award of the "Elliot-Cresson" Gold Medal to Hammer, Apr. 1906
Box 30, Folder 7	General Electric Co., Schenectady, N.Y., Edison Mazda Lamps for Standard Electric Railway Service, bulletin No. 4947A, Mar. 1913
Box 30, Folder 7	John W. Lieb, The Edison System of Electric Light, a presidential address presented at the third annual meeting of the Edison Pioneers held at the Edison Laboratories, Orange, N.J., Feb. 11, 1920
Box 30, Folder 7	Thomas Commerford Martin, Edison at Seventy-three, New York, 1920
Box 30, Folder 7	The Edison Monthly, Feb. 24, 1924
Box 30, Folder 7	Association o Edison Illuminating Companies, Collection of Historic Electrical Apparatus, Instruments, Material and Documents, January, 1925

Box 30, Folder 7	The Edison Monthly, Mar 25, 1924
Box 30, Folder 7	Addresses delivered at the dedication of the commemorative tablet near the site of the Edison Laboratories and workshops at Menlo Park, N.J., May 16, 1925
Box 30, Folder 7	The Edison Monthly, Jun. 1925
Box 30, Folder 7	Arthur E. Kennelly, Biographical Memoir of Thomas Alva Edison, Washington, 1933, 1847-1931
Box 30, Folder 7	The Edison Monthly, 1927-1928
Box 30, Folder 7	Official proceedings, New York Railroad Club, Nov. 1936
	Publications, undated
Box 30, Folder 8	Instructions for Edison Light- o-matic Radio Receivers by Thomas A. Edison, Inc., Orange, N.J.
Box 30, Folder 8	Edison's Life and His Favorite Invention issued by Thomas A. Edison, Inc., Orange, N.J.
Box 30, Folder 8	The Story of Menlo Park by Edison Pioneers
	The Life & Achievements of Thomas Edison, 1890-1931
Box 30, Folder 9	Edison, Thomas A., Inc., "The Events and Achievements in the Life of Thomas Alva Edison"
Box 30, Folder 9	Stieringer, Luther, "The Life and Inventions of Thomas A Edison", 1890
Box 30, Folder 9	Edison, Mrs. Thomas, "Wizard of Electricity"
Box 30, Folder 9	From Train 'Butcher' to World's Greatest Inventor, Reading Railroad Magazine
Box 30, Folder 9	Edison, General Electric Review, Dec. 1931

Subseries 2.9: Edison Storage Battery Data; Edison Electric Illuminating Company, 1884-1927

Box 31, Folder 1	H.B. Coho, An Historical Review of the Storage Battery, reprint of a paper read at New York City, Apr. 16, 1903
Box 31, Folder 1	Edison Storage Battery Co., Orange, N.J., The Edison
Box 31, Folder 1	Storage Battery for Operation Type B Cells-General Information and Instruction, Sept. 1917

Box 31, Folder 1	Edison Storage Battery Co., The Edison Storage Battery for Railway Signals, Oct. 1912
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Box 46, Folder 5	Incandescent Lamps by Wilcox, Apr. 1900
Box 46, Folder 5	Lampes a Incandescence Nernst, a card from Paris Expo, Sep. 3, 1900
Box 46, Folder 5	Transaction of Illuminating Engineering Society (loose pages)
Box 46, Folder 5	Lieb, John W. "Leonardo Da Vinci, Engineer and Artist", Stevens Indicator, Vol. 31, no. 2, Apr. 1914
Box 46, Folder 5	_____.The History of the Incandescent Electric Lamp, New Jersey, 1919
	Pamphlets: M-W, 1879-1930
Box 46, Folder 6	Moore Electrical Co., "Tests and comparisons of the Moore Electric Light" extracts from the Illuminating Engineer for June and July, 1906
Box 46, Folder 6	MacKay, G.M. The Characteristics of Gas- Filled Lamps, Sept. 1914
Box 46, Folder 6	National Electric Light Association, Cleveland Ohio, Data Booklet on Carbon, Gem, Tantahim and Tungsten
Box 46, Folder 6	Nostrand, D. Van., Van Nostrand's Engineering Magazine, January 1882

Box 46, Folder 6	Page, A.D. Incandescent Lamps: Their Use and Abuse GE Co., July 1894
Box 46, Folder 6	Preece, W.H., "Recent Wonders of Electricity" Journal of the Society of Arts, Jan. 13, 1882
Box 46, Folder 6	The Pennsylvania State College Bulletin, Vol. 1, No. 1, Jun. 1, 1910
Box 46, Folder 6	The Franklin Institute, Journal of the Franklin Institute, Vol. CL., No. 4, Oct. 1900
Box 46, Folder 6	Randal, J.E., "Recent Developments in the Manufacture of Incandescent Lamps," Chicago, Sept. 1911
Box 46, Folder 6	Revue: The Magazine of Light, Vol. 1, No. 6; and Vol. 1, No. 8, Sept. 1929, Jan. 1930
Box 46, Folder 6	Servir, Edourd, Lampe Clamond, Paris, 1882
Box 46, Folder 6	Sharp, Clayton H., New Types of Incandescent Lamps, N.Y., 1906
Box 46, Folder 6	Schroeder, Henry, History of Incandescent Lamp Manufacture, N.Y., 1911
Box 46, Folder 6	The Incandescent Lamp-Its History, 1923
Box 46, Folder 6	Schroeder, Henry, Electric Bulbs for Automobiles, N.Y., 1906
Box 46, Folder 6	Sharp, Clayton H. "The Photometry of Gas Filled Incandescent Lamps", Nov. 1914
Box 46, Folder 6	Ultra - Violet Ray Sterilization Co., The Perfect Sterilization of Water, Philadelphia, Pa.
Box 46, Folder 6	Weaver, W.D. Incandescent Lamp Economy, 1885
Box 46, Folder 6	Woodbury, C.J.H., Recent Developments in the Electrical Transmission of Power, Boston, Mass., 1893
Box 46, Folder 6	Serrel, Lemuel Wm. "The Handling of Freight by Electric Roads," The Electrical Age, Nov. 1904
Box 46, Folder 6	Westinghouse Madza Lamps, Better Light for Efficient Work
Box 46, Folder 6	Woodbury, C.J.H., Electrical Transmission of Power for Cotton Mills, 1892
Box 47, Folder 1	Clippings Notes: Includes clippings of *Scientific America*, the *Daily News*, the *Morning Advertiser*, the *New York- Times*, the *Electrician*, *Boston Record, Harpers Weekly, New York Herald*, the *New York Sun*,

	the *New York World*, the *New York Tribune*, *Mount Pleasant Monthly*, and the *Daily Graphic*
Box 47, Folder 2	Pages of Scientific American Supplement, No. 162; No. 283, February 8, 1879; June 4, 1881

Subseries 3.5: Electricity: Lamps: Distribution Systems, 1879-1901

Box 48, Folder 1	Articles concerning electric lamps and their inventors
Box 48, Folder 2	Articles concerning electric lamps
Box 48, Folder 3	Scrapbook on incandescent lamps
Box 48, Folder 4	New York Herald, December 21, 1879 Notes: articles describing Edison lamps and lighting system
Box 48, Folder 5	Electricity: commercial applications
	Pamphlets:
Box 48, Folder 6	Incandescent Lamps for Isolated Plants, General Electric Company, Oct. 23, 1901
Box 48, Folder 6	Das Edison Licht, Berlin, 1882
Box 48, Folder 6	Elektriche Beleuchtung von Theatern, Berlin, 1884
Box 48, Folder 7	Illustrated catalogue of "Electric Light and Power Supply," the Electric Supply Co., Chicago, March 1892
Box 48, Folder 8	National Electric Light Association materials

Subseries 3.6: Storage Batteries, Electrical Devices: News Clippings, 1879-1882

Box 49, Folder 1	Scrapbook of various articles on the electric storage battery
Box 49, Folder 2	Scrapbook of clippings from Scientific American, 1879-1882
Box 49, Folder 3	Scrapbook of clippings from Scientific American, 1880-1882
Box 49, Folder 4	Storage and secondary batteries
Box 49, Folder 5	Electrical devices

Subseries 3.7: Telephony: News Clippings, 1879-1884

Box 50, Folder 1	Telephony
Box 50, Folder 2	Scrapbook of various newspaper & magazine clippings on the telephone, 1879-1884
Box 50, Folder 3	General electricity
Box 50, Folder 4	Alternating currents and high frequencies

Subseries 3.8: Domestic Applications Of Electricity: Early Home, Appliances, 1892-1928

Box 51, Folder 1	Baker, Ray Stannard, "New Music for an old World," McClures Magazine, Jul. 1906
Box 51, Folder 1	Bell Laboratories, Synchronized Reproduction of Sound and Scene, Nov. 1928
Box 51, Folder 1	Chapman, Harold, "The Wireless Electrical City of the Future," New York Daily Tribune, Dec. 12, 1909
Box 51, Folder 1	Electrocraft, "Heating by Incandescent Lamps"
Box 51, Folder 1	Hillman, H.W., "An Electric Day," Good Housekeeping, Jun. 1906
Box 51, Folder 1	An Electric Day, page 619, [magazine article], June 1906 1 Item (Ink on paper; 9.9" x 6.6") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000010 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Page of article by H. W. Hillman appearing in Good Housekeeping, illustrated with image of bathroom and small electric appliances (small water heater for shaving, vibrator, and radiator) Topic: Electric apparatus and appliances Bathrooms Genre/Form: Articles
Box 51, Folder 1	Lees, Frederic, "An Electric Villa", Sept. 1907
Box 51, Folder 1	The Steward, "An Electric Villa", Sept. 1907
Box 51, Folder 1	Leonard, H. Ward, "A New System of Electric Propulsion," Electricity, July 20, 1892
Box 51, Folder 1	McGraw - Hill Co., Inc., The Home Electrical.

Box 51, Folder 1	Popular Mechanics, "Submarine Mines", Sept. 1908
Box 51, Folder 1	Scientific American, "Edison's Concrete Furniture", Jan. 13, 1912
Box 51, Folder 1	Taylor, John Bellamy, "Microscopic Study of the Phonograph," Scientific American, Nov. 13, 1915
Box 51, Folder 1	The New York Edison Company, List of Electrical Appliances and Applications
Box 51, Folder 1	The Philadelphia Electric Company, National Home Electric, Jul 6, 1926
Box 51, Folder 1	Richards, Joseph W. "History of the Electric Furnace"
Box 51, Folder 1	Sterling Debenture Corporation, The American Telegraphone Company
Box 51, Folder 1	Victor Talking Machine Co., The New Orthophonic Victrolas Electrolas and Radiola Combinations
Box 51, Folder 2	Advertisements
Box 51, Folder 3	Early home appliances
Box 51, Folder 4	Articles on farm life, 1908-1910
Box 51, Folder 5	Television and motion pictures
Box 51, Folder 6	Phonographs, telegraphones, graphophones

Subseries 3.9: Electric Railways, 1895-1898

Box 52	United States Circuit Court, Western District of Michigan: Benson Bidwell, Clara E. Bidwell, Charles F. Bidwell vs. Consolidated Street Railway Co. Notes: includes Hammer's Testimony
Box 52	N.J. Supreme Court: Alexander F. Bliss Vs. Bergen County Traction Company brief for the defendant
Box 52	Full text of case of Thomson Houston Electric Company vs. Union Railway Company and Walker Company - filed in U.S. circuit Court, Feb. 12, 1898
Box 52	Copy of the deposition of court case, Hammer cross examined by Mr. Davis, September 1, 1898
Box 52	Re-cross-examination of Hammer continued by Davis
Box 52	New Jersey Court of Errors & Appeals, Alexander F. Bliss vs. The Bergen County Traction Company

Box 52	U.S. Circuit Court, Eastern Division, Eastern District of Missouri: Adams Electric Railway Co., Vs Lindell Railway Co., brief for defendants
Box 52	Full text of injunctions granted by the Courts against the various companies sued for infringement
Box 52	Circuit Court of the United States, Western District of Michigan, Southern Division, Benson Bidwell, Clara E. Bidwell and Charles F. Bidwell (complainants) vs. Consolidated Street Railway Company (Defendant) on Bidwell Patent No. 318,594. Defendant's record on final hearing
Box 52	U.S. Circuit Court, Eastern Division of Eastern Missouri, Adams Electric Railway Co. vs. The Lindell Railway Co. Brief for Defendants
Box 52	U.S. Circuit Court, Eastern Division of the Eastern District of Missouri, Adams Electric Railway Co. vs. The Lindell Railway Co. Argument of Frederic H. Betts for Defendant on Final Hearing
Box 52	N.J. Court of Errors and Appeals Andrew F. Bliss vs. Bergen County Traction Co. Points for Defendant in Error
Box 52	N.J. Court of Errors and Appeals. Alexander F. Bliss vs. the Bergen County Transaction Co. Statement of Facts
Box 52	N.J. Court of Errors and Appeals. The Bergen Traction Co. vs. Andrew Bliss. Points and Brief for Plaintiff in Error
Box 52	New Jersey Supreme, Alexander F. Bliss vs. the Bergen County Traction Co. Statement of Facts
Box 52	N.J. Court of Errors and Appeals, Bergen County Traction Co. vs. Alexander Bliss. State of the Case
Box 52	N.J. Supreme Court, Alexander F. Bliss vs. Bergen County Traction Co. State of the Case
Box 52	Suspended Switch Case (Circuit Court), Full Text of Decision in the case of Thomson Houston Electric Co. vs. Elmira and Horsehead Railway Co., June 19, 1895
Box 52	Suspended Switch Case. (Circuit Court of Appeals) Full Text of decision in the case of Thomson-Houston Electric Co. vs. Elmira and Horseheads Railway Co., June 19, 1895
Box 52	Articles
Box 53, Folder 1-2	Various pamphlets on European electric railways

Box 53, Folder 3	La Trazione Elettrica Sulle Linee Vallellinesi, diagrams, pamphlets, and photographs
Box 53, Folder 3	Paper, "Electric railroads' investigated by Hammer in Europe

Subseries 3.10: Electric Signs, 1900-1921

Identified Articles, 1900-1921

Box 54, Folder 1	Advertisements from Betts and Betts, 1911
Box 54, Folder 1	Anderson, O.P. "Brief Outline f Electric Sign History and Development," Signs of the Times, May. 1916
Box 54, Folder 1	BOLOSSY Diralfy's Mammouth Historical Presentation, El Dorado on the Palisades 1891, brochure promoting Amusement Park
Box 54, Folder 1	Engineering Department, National Lamp Works, "Engineering Features of Electric Sign Lighting, with Bulletin", Mar. 15, 1916
Box 54, Folder 1	Estimate for isolated electric light plant from the Thomas Houston Electric Co.
Box 54, Folder 1	Ford, Arthur H. "The Design of Illuminated Signs", 1914
Box 54, Folder 1	General Electric Company, "Edison Mazda Sign Lamps", Jan. 1913
Box 54, Folder 1	Good Lighting, "The New Era in Lighting Fixtures", May 1912
Box 54, Folder 2	Illuminating Engineering Society, "Transactions of the Illuminating Engineering Society", Aug. 30, 1920
Box 54, Folder 2	Mills, E.A., "The Development of Electric Sign Lighting," Illuminating Engineer Society, Aug. 1920
Box 54, Folder 2	Mills, E.A. "The Development of Electric Sign Lighting,"paper read before the Illuminating Engineering Society, Aug. 30, 1920
Box 54, Folder 2	Patent Specification of F. Alcock, Advertising service, 1900
Box 54, Folder 2	Shute, J.M., "The Lighting of Signs and Billboards," Lighting Data, Nov. 1921
Box 54, Folder 2	The New York Edison Co., Electric Sign
Box 54, Folder 2	The New York Edison Co., Profitable Advertising, Jun. 1902
Box 54, Folder 2	The New York Edison Co., The Edison Monthly, May 1921

Box 54, Folder 2	The Electric Motor and Equipment Co., Decorative Devices and Signs of the Times, May 1901
Box 54, Folder 2	Transactions of the Illuminating Engineering Society, Aug. 1920
Box 54, Folder 2	Williams, Arthur, "A report made at the twenty-sixth Annual Convention of the National Electric Light Association", May 1903
Box 54, Folder 3	Advertising brochures and pamphlets of various companies
Box 54, Folder 4	Miscellaneous notes; articles and illustrations
Box 54, Folder 5	Various articles from Electrical Review, Western Electrician, and Electrical World
Box 54, Folder 6	News Clippings Notes: From *N. Y Daily Tribune*; *N. Y. Times*; *N. Y. Herald, The Evening Mail*

Subseries 3.11: Biographical Materials Relating To The History Of Electricity, 1919

Box 55, Folder 1	Portraits
Box 55, Folder 2	Biographical materials
Box 55, Folder 3	Lists of autographed photographs of "Eminent Electrical Men"
Box 55, Folder 4	Material regarding Nobel Prize
Box 55, Folder 5	Correspondence, 1919
Box 55, Folder 6	Miscellaneous: news clippings, diagrams, Band of T.A. Edison's straw hat

Subseries 3.12: Poulsen: Telegramaphone, 1878-1989

Identified Articles, 1900-1988

Box 56, Folder 1	Electrical Review, "The Poulsen Telegraphone in America"
Box 56, Folder 1	Fyfe, Herbert C., "The Telegramaphone and the British Post Office," Scientific American, Apr. 25, 1903
Box 56, Folder 1	L'Electricien, "Revue Internationale de L'Electricite", Aug. 16, 1900
Box 56, Folder 1	Lieb, John A., "The Telegraphone: A Magnetic Phonograph," Electrical Review, Sept. 1902

Box 56, Folder 1	Lieb, Chas. A., The Poulsen Telegraphone, Brochure on Poulsen apparatus, steel bands and steel wires
Box 56, Folder 1	O'Reilly, H.P. Invitations to attend a demonstration of the Poulsen telegraphone
Box 56, Folder 1	Poulsen's patent specifications for method of recording and reproducing sound or signals, Nov. 13, 1900
Box 56, Folder 1	Prometheus, Berlin, Germany, Oct. 29, 1900
Box 56, Folder 1	Revue Des Sciences, "La Nature Gaston Tissandier", Jun. 23, 1900
Box 56, Folder 1	The American Telegraphone Co., "The Poulsen Telegraphone"
Box 56, Folder 1	The Literary Digest Advertiser, 'Poulsen's Telegraphone: A Scientific Marvel", Feb. 9, 1907
Box 56, Folder 1	The Press of Philadelphia, "Poulsen, The Danish Edison", Feb. 9, 1907
Box 56, Folder 1	The World, "Love Letters in Steel: The Wonderful New Telegraphone which Registers Speech on Indestructible Discs of Metal prepared for Mailing", Sunday May 31,1903
Box 56, Folder 1	The Shorthand Writer, "The Telegraphone", Oct. 4, 1906
Box 56, Folder 1	Waterman's, "Report on the Poulsen Telegraphonel [?]
Box 56, Folder 1	Telegraphones and telegramaphones
Box 56, Folder 1	Advertisements (stocks)
Box 56, Folder 1	Engel, Friedrich Karl, "1888-1988: A Hundred Years of Magnetic Sound Recording," J. Audio Eng. Society. Vol. 36, No. 3: 170-178, March 1988
Box 56, Folder 1	Faraday Centennial Number
Box 56, Folder 1	Gandy, James W., "Bridgeton, the Birthplace of Magnetic Recording." South Jersey Magazine. Summer: 8 & 9 & 12, 1989
Box 56, Folder 1	Oberlin Smith notes on talking phonographs (copies), Sept. 23, 1878

Subseries 3.13: Phosphorescence, 1896-1929

Box 57, Folder 1	Identified Articles, 1896-1929
Box 57, Folder 1	Andrade, E.N., "Lenard's Researches on Phosphorescence," Scientific American Supplement, Sep. 20, 1913

Box 57, Folder 1	Andrews, W.S., "The Production of Fluorescence and Phosphorescence by Radiations from the Carbon Arc Lamp," General Electric Review, Sept.1925
Box 57, Folder 1	Baly, C.C., Photosynthesis, 1929
Box 57, Folder 1	Baskerville, Charles, "Ultra-violet Light in the Laboratory and in Practice"
Box 57, Folder 1	Butman, Chester A., "The Electron Theory of Phosphorescence," Physical Review, Feb. 1913
Box 57, Folder 1	Catalog of Scientific Papers compiled by the Royal Society of London
Box 57, Folder 1	Compton, Arthur, "What is Light?" The Scientific Monthly, Apr. 1929
Box 57, Folder 1	DuBois, Raphael, Physiological Light, 1896
Box 57, Folder 1	Hogben, Lancelot, "Animal Light and Animal Colour," Discovery, Nov. 1924
Box 57, Folder 1	Hammer, "Phosphorescent Mixtures"
Box 57, Folder 1	Harwood, W.S., "Studies in Marine Biology"
Box 57, Folder 1	McDowell, Louise Sherwood, "The Fluorescence and Absorption of Anthracene," Physical Review, Feb. 1908
Box 57, Folder 1	Nichols, Edward L., "Fluorescence and Phosphorescence," Franklin Institute, Mar. 29, 1906
Box 57, Folder 1	Phosporescent Calcium Tungstate formulas of W.S. Andrew and Thomas Edison
Box 57, Folder 1	Pierce, C.A., "Studies in Thermo-luminescence," Physical Review, Jan. 1911
Box 57, Folder 1	Rayleigh, Lord, "The Glow of Phosphorus," Scientific Monthly
Box 57, Folder 1	Waggoner, Chan. W., "Some Studies in Short Duration Phosphorescence," Short Duration Phosphorence
Box 57, Folder 2	Studies in Luminescence from Physical Review Magazine
Box 57, Folder 2	Nichols, Edward L., "Studies of Luminescence," Physical Review, Oct. 1905
Box 57, Folder 3	Phosphorescence Unpublished Materials (Correspondence)
Box 57, Folder 4	Chemiluminescence

Box 57, Folder 4	Simonini, Angelo, "Notes on Chemical Luminescence of Rare Earths," Illustrated Engineers, Oct. 1909
Box 57, Folder 4	Waggoner, C.W., "Some Phosphorescent Salts of Cadmium with Sodium," Physical Review, Oct. 1910
Box 57, Folder 5	The Production of Light by Animals
Box 57, Folder 5	Coblentz, W.W., "The Colour of the Light emitted by Lampyride," The Canadian Entomologist
Box 57, Folder 5	Dahlgren, Uric, "The Production of Light by Animals," Franklin Institute Journal, May 1917
Box 57, Folder 5	McDermott, F. Alex, Recent Advances in our Knowledge of the Production of Light in Living Organisms, 1911
Box 57, Folder 5	McDermott, F. Alex, The Stability of the Photogenic Material of the Lampyridae and its Probable Chemical Nature, Nov. 1911
Box 57, Folder 5	McDermott, F. Alex, Why Do Certain Living Forms Produce Light?, Dec. 1911
Box 57, Folder 6	Phosphorescent Lights
Box 57, Folder 7	Cold Light
Box 57, Folder 7	Bancroft, Wilder D., "The Theory of Cold Light," Transactions of the Illuminating Engineering Society, Jun. 10, 1915
Box 57, Folder 7	DuBois, Raphael, "The Mystery of Cold Light," Scientific American Monthly, Jan. 1920
Box 57, Folder 7	Harvey, E. Newton, Cold Light, 1926
Box 57, Folder 7	The Light of the Firefly

Subseries 3.14: Radium, 1896-1930

Le Radium, 1904-1907
34 Copies

Box 58, Folder 1	Le Radium, Jan. 1904-Dec. 1904
Box 58, Folder 2	Le Radium, Feb. 1905-Dec. 1905
Box 58, Folder 3	Le Radium, Jan. 1906-Nov. 1906

Box 58, Folder 4	Le Radium, Jan. 1907-March 1907
	News clippings:, 1903-1904 Notes: Includes clippings from *The New York Press*, *The Electrical World*, *Modern Medical Science*, *The New York Herald*, *The New-York American*, *The New York The World*, *North American*, *New York Tribune*, *Times*, *Boston Post*, *The Illustrated London News*, *Harpers Weekly*, *New York Sun*
Box 59, Folder 1	News clippings, 1903
Box 59, Folder 2-3	News clippings, 1903-1904
Box 59, Folder 4	The Brooklyn Daily Eagle (News Special), Sunday August 30, 1903
	News clippings:, 1903-1904 Notes: Includes clippings from *Electrical Review*, *Tribune Weekly Review*, *New York America*, *New York Times*, *New York Press*, *New York Evening Journal*, *Illustrated London News*, *Electrical Review*, *New-York Evening Sun*, *Times*, *New York Press*
Box 60, Folder 1	News clippings, 1903
Box 60, Folder 2	News clippings, 1903-1904
Box 60, Folder 2	Burning Out / Birthmarks, Blemishes of the / Skin and Even Turning a Negro / White with the Magic Rays of Radium, the New Mystery of Science! [newpaper article], January 10, 1904 1 Item (Ink on paper.; 13.5" x 10.7".) Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000002 (AC scan number) Article includes two images. Names: New York American Topic: Blemishes Birthmarks Race Radium Radioactive substances X-rays Genre/Form: Newspaper clippings
Box 60, Folder 2	Can the Ethiopian / Change his Skin or / the Leopard his Spots? [newpaper article], January 25, 1904 1 Item (Ink on paper.; 14.0" x 10.5") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English.

	Notes:	AC0069-0000003 (AC scan number) Article includes a variety of images. Tattered.
	Topic:	Boston globe Race Radium Radioactive substances X-rays
	Genre/Form:	Newspaper clippings
	Culture:	Ethiopians
Box 61, Folder 1-3	News clippings, 1903-1904	
Box 62, Folder 1-2	News clippings, 1903-1904	
Box 63, Folder 1	The Western miner and Financier, (Radium Edition), vol.10, no. 11, Mar. 17, 1904	
Box 63, Folder 1	Moffett, Cleveland, "The Sense and the Nonsense about Radium." Success, vol. 7, Apr. 1904	
Box 63, Folder 1	V.V.V., "A Few Days Ago: A Radium Chronicle," The Sphere, Mar. 5, 1910	
Box 63, Folder 2	News clippings, 1904	
Box 63, Folder 3	Loose clippings, 1903-1906	
Box 63, Folder 3	Undated clippings, undated	
Box 63, Folder 3	Clippings, 1912, 1920, 1921, 1923	
Box 63, Folder 4	News and periodical clippings, Jan. 1902	
Box 63, Folder 4	News and periodical clippings, Oct. 1903	
Box 63, Folder 4	News and periodical clippings, Nov. 1903	
Box 63, Folder 4	News and periodical clippings, 1903-12	
Box 63, Folder 4	News and periodical clippings, Jan. 1904	
Box 63, Folder 4	News and periodical clippings, Feb. 1904	
Box 63, Folder 4	News and periodical clippings, Mar. 1904	
Box 63, Folder 4	News and periodical clippings, Jun. 1904	

Box 63, Folder 4	News and periodical clippings, Nov. 1904
Box 63, Folder 4	News and periodical clippings, Dec. 1904
	Pamphlets:
Box 63, Folder 5	"The Curative Action of Radium" by Dr. Sigm. Saubermann, 1914
Box 63, Folder 5	"Radio - Activity of Uranium" by Sir William Crookes, London, 1900
Box 63, Folder 5	"Radium, Radioactive Substances and Aluminum with Experimental Research of the Same" by Myron Metzenbaum, 1904
Box 63, Folder 5	"Illustrating the Penetrating Power of Radium" by Robert Abbe
Box 63, Folder 5	"Le Radium, La Radioactivite et les sciences qui s'y rattachent", Mar. 1904
Box 63, Folder 5	"Le Radium, La Radioactivite et les Radiations", May 1905
	English Language, Bound Pamphlets, 1899-1924
	1899 - 1902:
Box 64, Folder 1	Owens, E.E., "Thorium Radiation," from the Philosophical Magazine, Oct. 1899
Box 64, Folder 1	Crookes, Sir William, Radio-Activity of Uranium, London, 1900
Box 64, Folder 1	Bolton, Henry Carrington, "An Experimental Study of Radio Active Substances," from the Smithsonian Report for 1899, Washington, 1901
Box 64, Folder 1	Kroptkin, Prince, "Unsuspected Radiations," from the Smithsonian Report for 1900, Washington, 1901
Box 64, Folder 1	Rutherford F., and H.T. Brookii, "The New Gas from Radium,"from The Transactions of the Royal Society of Canada, 2nd series 1901-1902, vol. 7, section 3, 1901, 1901-1902
Box 64, Folder 1	Hammer, Edison's Tungstate of Calcium Lamp. The Nernst Lamp. Radium, Polonium and Actinium, New York and Chicago, Jan. 3, 1902
Box 64, Folder 1	Crookes, Sir Williams, "Radio - Activity and the Electron Theory," from the Proceedings of the Royal Society, vol. 69, Feb. 1902
Box 64, Folder 1	Crookes, Sir William and Prof. H. Becquerel, "Sur La Radio-Activite-de la Matiere," Royal Institute of Great Britain, Mar. 2, 1902

Box 64, Folder 1	Rutherford E., and H.T. Brooks, "Comparison of the Radioactive Substances," the Philosophical Magazine, Jul. 1902
Box 64, Folder 1	Rutherford E., and F. Soddy, "The Cause and Nature of Radioactivity," Part II, from the Philosophical Magazine, Nov. 1902
	1903:
Box 64, Folder 2	Rutherford E., "Excited Radioactivity and the Method of Its Transmission," the Philosophical Magazine, Jan. 1903
Box 64, Folder 2	Rutherford E., "The Magnetic and Electric Deviation of the Easily Absorbed Rays from Radium," PhilosophicalMagazine, Feb. 1903
Box 64, Folder 2	Hammer, Radium and other Radioactive Substances with a Consideration of Phosphorescent and Fluorescent Substances. The Properties and Applications- of Selenium and the Treatment of Disease by the Ultra Violet Light, New York, April 17,1903
Box 64, Folder 2	Barker, George F., "Radio-Activity and Chemistry", the School of Mines Quarterly, vol.24, no. 3 (three copies), Apr. 1903
Box 64, Folder 2	Scott, Charles F. et. al., Transactions of the American Institute of Electrical Engineers, vol.20, no. 5, May 1903
Box 64, Folder 2	Crookes, Sir William, Modern Views on Matter: The Realization of a Dream, London, Jun. 5, 1903
Box 64, Folder 2	Crookes, Sir William , "The Ultra-Violet Spectrum of Radium," from the Proceedings of the Royal Society, vol. 72, Aug. 1903
Box 64, Folder 2	Becquerel, Henri, "On the Radio-Activity of Matter," from The Smithsonian Report for 1902, Washington, 1903
Box 64, Folder 2	McLennan, J.C., and E.F. Burton, On the Radio-activity of Metals, University of Toronto Studies, Physical Sciences, no. 3, 1903
Box 64, Folder 2	Hammer & Hess, IL Radio: Le Sue Proprieta ed Applicazioni, 1903
	1904-1905:
Box 64, Folder 3	Cleaves, Margaret A. 'The Physiological Action of Light and the Physical Factors in Phototherapy," Reprinted from The Journal of Advanced Therapentics, Feb. 1904
Box 64, Folder 3	Abbe, Robert, Radium and Radioactivity, Mar. 1904
Box 64, Folder 3	Phillips, Alexander, Radium in American ore, Apr. 1904

Box 64, Folder 3	Metzenbaum, Myron, "Radium, -Radioactive Substances and Aluminium", reprint from The Cleveland Medical Journal, May 1904
Box 64, Folder 3	Abbe, Robert, "The Subtle Power of Radium," Reprint from The Medical Record, New York, Aug. 27, 1904
Box 64, Folder 3	Bottone, S., Radium, and All About It, London, 1904
Box 64, Folder 3	Crookes, Sir William, "Modern Views on Matter: the Realization of a Dream." From the Smithsonian Report for 1903, Washington, 1904
Box 64, Folder 3	Hall-Edwards, J., (ed.), Archives of the Roentgen Ray: and Allied Phenomena, vol. 8, no. 10, Mar. 1904
Box 64, Folder 3	Ramsay, Sir William, and Frederick Soddy, "Experiments in Radio - Activity and the Production of Helium From Radium," from the Smithsonian Report for 1903, Washington, 1904
Box 64, Folder 3	McLennan, J.F., on the Radioactivity of Mineral oils and Natural Gases, 1904
Box 64, Folder 3	Renterdahl, David, The Radioactive Atom, Providence, 1904
Box 64, Folder 3	Thomson, J.J., "Radium," from the Smithsonian Report for 1903, Washington, 1904
Box 64, Folder 3	Dawes, H. F., "On the Secondary Radiation Excited in Different Metals by the Y Rays from Radium," reprinted from the Physical Review, vol. 20, no. 3, Mar. 1905
Box 64, Folder 3	Johnson, L. , "On the Decay of Excited Radioactivity from Natural Gases," reprinted from the Physical Review, vol. 20. no. 3, Mar. 1905
Box 64, Folder 3	McLennan,J.C. "Notes on the Use of Sensitive Quadrant Electronmeters," Reprinted from the Physical Review, vol. 20, no. 3, Mar. 1905
Box 64, Folder 3	University of Toronto, "Papers from the Physical Laboratory" by J.C. McLennan, L.B. Johnson, and H.P.Hawes, reprinted from the Physical Review, vol. 20, no.3 (Papers are not enclosed), Mar. 1903
	1906-1909:
Box 64, Folder 4	Dutton, Major C.E., Volcanos and Radioactivity, April 17, 1906
Box 64, Folder 4	Abbe, Robert, 'Explosion of a Radium Tube," reprinted from Medical Record, Apr. 21, 1906
Box 64, Folder 4	Sands, Benj W., The Primordial Energy, 1906

Box 64, Folder 4	Curie, Madame, "Modern Theories of Electricity and Matter," from the Smithsonian Report for 1906, no. 1745, Washington, 1907
Box 64, Folder 4	Himstedt, Franz, "Radioactivity," from the Smithsonian Report for 1906, no. 1746, Washington, 1907
Box 64, Folder 4	Joly, John, "Uranium and Geologv," from the Smithsonian Report for 1908, no. 1900, Washington, 1909
Box 64, Folder 4	Broca, Andre, "The Work of Henri Becquerel," From the Smithsonian Report for 1906, no. 1746, Washington, 1907
Box 64, Folder 4	Broca, Andrel, "The Work of Henri Becquerel," from The Smithsonian Report from 1908, no. 1914, Washington, 1909
Box 64, Folder 4	Wilkinson, John Anderson, "Th Phosphorescence of Some Inorganic Salt,' reprinted from the Journal of Physical Chemistry, vol. 13, no. 9, Dec. 1909
Box 64, Folder 4	McLennan, J.C. "On the Electricity Charges Acquired by Insulated Potassium Salt and Radioactive Substances in High Bacua," reprinted from The Physical Review, vol. 29, no. 6, Dec. 1909
	1910 -1924:
Box 64, Folder 5	Kennedy, W.T., "On the Active Deposit from Actinium in Uniform Electric Fields," from the Transactions of the Royal Society of Canada, 3rd Series, Ottawa, 1910
Box 64, Folder 5	Ives, Herbert E., and William W. Coblentz, "Luminous Efficiency of The Firefly," from Bulletin of the Bureau of Standards, vol. 6, no. 3, Washington, 1910
Box 64, Folder 5	Andrews, W.S., "Notes on Tribo-Luminescence," from the Transactions of the American Electrochemical Society, Vol. 18, Oct. 1910
Box 64, Folder 5	Becquerel, Jean, "Modern Ideas on the Constitution of Matter," from The Smithsonian Report for 1910,Washington, 1917
Box 64, Folder 5	The Society of Arts of the M.I.T., Science Conspectus, Boston, Mass., Apr. 1911
Box 64, Folder 5	Coblentz, William W., The Physical Study of the Firefly, Washington, D.C., 1912
Box 64, Folder 5	Curran, Thomas F.V., Carnotte: The Principal Source of Radium, New York, 1913

Box 64, Folder 5	Rutherford, Sir Ernest, "The Constitution of Matter and the Evolution of the Elements" from The Smithsonian Report for 1915, Washington, 1916
Box 64, Folder 5	Buseck, O., "Radium and Its Physical Properties," reprinted from The Hahnemannian Monthly, May 1916
Box 64, Folder 5	Rutherford, Sir Ernest, The Natural and Artificial Disintegration of the Elements, Franklin Institute, Pa., 1924
Box 64, Folder 5	ATSCO, Inc., The Radium Gold Fibre Screen, New York City, undated

Papers, Lectures, Clippings
Notes: The material in this box is arranged alphabetically by last names of authors. There is a brief listing of some of the writings in the box

Materials by authors A - C (See Itemized Listing):

Box 65, Folder 1	Ackroyd, William, Experiments and Cbservations with Radium, 1903
Box 65, Folder 1	Ackroyd, William, Radium and Its Position in Nature, Halifax
Box 65, Folder 1	Allan, S.J., 'Radioactivity From Freshly Fallen Snow, Dec.31, 1902
Box 65, Folder 1	Alphers, O.T.J., Radium and Its Position in Nature, New Zealand
Box 65, Folder 1	Barry, Paul, "Radium and Its Wonderful Qualities," Electrical Age, Oct. 1902
Box 65, Folder 1	Bohn, J. Lloyd, "Radioactive Properties of Rocks, Soils, Crude Oil and Waters from Southern California," Franklin Institute Journal, Oct. 1930
Box 65, Folder 1	Brown, F.C., "Evidence Favoring the Radioactive Disintegration of Sodium as an Element," Iowa Academy of Science
Box 65, Folder 1	Cahen, Edwaril, "Modern Extraction in Cornwall"
Box 65, Folder 1	Crawford, Emily "The Curies at Rome: An Interview with the Discoverers of Radium," The World Today, Apr. 1904
Box 65, Folder 1	Crookers, William, "on Repulsion Resulting from Radiation" Sci. Am. Sup., May 27, 1896
Box 65, Folder 1	Crozer, Laura, "Madame Curie the Woman," Popular Electricity, May. 1911
Box 65, Folder 2	D
Box 65, Folder 3	E-F

Box 65, Folder 4	G-H
Box 65, Folder 5	K-N
Box 65, Folder 6	P-R
Box 65, Folder 7	S-T
Box 65, Folder 8	W
Box 65, Folder 9	Typed and hand-written scripts
Box 65, Folder 10	Miscellaneous
Box 65, Folder 11	Becquerel, M. Henri "Recherches sur me Propriete Nouvelle De La Matiere"
Box 66	Foreign Language Pamphlets:
	Pamphlets:
Box 66, Folder 1	Berget, A., Le Radium et Les Nouvelles Radiations, Paris, 1904
Box 66, Folder 1	Besson, Paul, Le Radium et La Radio-Activite, Paris, 1904
Box 66, Folder 2	Curie, Mme. Sklodowska, Recherches Sur les Substances Radioactives, (Thesis presented to the Faculte des Sciences de Paris, in partial fulfilment for the degree of Docteur es Sciences Physiques), Paris, 1904 2 Copies
Box 66, Folder 2	_____. Radio-Active Substances, Thesis presented to the Faculte des Sciences de Paris (Reprinted from the Chemical News), London, 1904
Box 66, Folder 3	Curie, P. *Recherches Recentes Sur La Radioactivite," Journal de Chimie-Physique, Vol. 1, 1903
Box 66, Folder 3	Electric World, "Death Of Prof. Pierre Curie", April 28,1906
	Pamphlets in German:
Box 66, Folder 4	Danne, Jacques, Das Radium, Leipzig, 1904
Box 66, Folder 4	Heydweiller, Adolf, Ueber Gewichtsanderunger bei Chemischer un Physikalischer Umsetzung, Leipzig, 1901
Box 66, Folder 4	Sonderabdruck, Berichte der Dentschen Chemischen Gesellschaft, Berlin, 1903
Box 66, Folder 5	Hammer & Hess, Il Radio: Le Sue Proprieta ed Applicazioni, Torino, 1903

2 Copies

	Curie Radium Pamphlets:
Box 66, Folder 6	Curie, E., Radium et les Nouvelles Radiation, Washington, 1904
Box 66, Folder 6	Berget, A. Le Radium (Portraits de M. & [?]ttne. Curie & M.Becquerel), Paris
Box 66, Folder 6	Curie, Mr. & Mrs., New Radio- active substances and the Rays which they Emit, N.Y., 1904
Box 66, Folder 6	Madame Pierre Curie and Professor Curie, author?, date?
Box 66, Folder 6	Societe Centrale de Produits Chemiques, Substances Radioactives & Sels de Radium, Saint-Louis, 1904
Box 66, Folder 6	Becquerel, Henri, Bibliographie, Paris, 1903
	Radium in Medicine
Box 66, Folder 7	Pamphlets, Journals, Addresses, Papers

Subseries 3.15: Selenium, 1910-1912

Box 67, Folder 1	Identified articles #1 - 8
Box 67, Folder 2	Identified articles #9 - 13
Box 67, Folder 3	Identified articles #14 - 19, 20 - 25
Box 67, Folder 4	Identified articles #26 - 28, 30 - 36, 38 & 39, 41-45
Box 67, Folder 5	George Jackson Book 1 Fritt Cells
Box 67, Folder 6	General selenium pamphlets and papers
Box 67, Folder 7	The uses of selenium in radio and television
Box 67, Folder 8	T.M. Giltay's notes on improved apparatus for demonstration of selenium
Box 67, Folder 9	Miscellaneous articles
Box 68, Folder 1	Elektrophysikalische Rundschau, March 1910-December 1910
Box 68, Folder 2	Elektrophysikalische Rundschau, February 1911-December 1911

Box 68, Folder 3	Elektrophysikalische Rundschau, October 1912-June 1912
Box 68, Folder 4	Selenium cells
Box 68, Folder 5	Unidentified German materials on selenium
Box 68, Folder 6	Unidentified German materials on selenium
Box 68, Folder 7	Selenium photographs

Subseries 3.16: Patent Materials, 1870-1890

U.S. materials, undated

Box 69, Folder 1-4	Various phonograph patent specifications
Box 69, Folder 5-6	Miscellaneous patent specification
Box 70, Folder 1-2	Miscellaneous Patent Specifications

English and French Patents, 1870s-1880s

Box 71, Folder 1	Adamian - Blamires
Box 71, Folder 2	Brewer, Edward Griffith
Box 71, Folder 3	Carbonelle - Hulsmeyer
Box 71, Folder 4	Jensen, Peter
Box 71, Folder 5	Johnson - Korn
Box 71, Folder 6	Lake, William Robert
Box 71, Folder 7	Langhans - Swan
Box 71, Folder 8	Thompson, William Phillips
Box 71, Folder 9	French: Berjonneau - Duchenne
Box 71, Folder 10	T. R. Harding & Son, Tower Works, Leeds Counter, Speed Indicator, Speedometer

Heany materials, undated

Box 72, Folder 1	Specifications forming parts of patents, complete specifications

Box 72, Folder 2	Patent litigation

Subseries 3.17: Specifications and Drawings of Dynamos in German and French, undated

Box 92

Subseries 3.18: Miscellaneous Reference Materials, 1879-1915

Box 73, Folder 1	Miscellaneous notes (alphabetical)
Box 73, Folder 2	Bibliography
Box 73, Folder 3	General Electric Co. Bulletin, 1899-1902
Box 73, Folder 4	History of the War of wars - notes, draft diary, etc. by P. Henry Mottclay, 1914
Box 73, Folder 5	Die erste Bergschwebebahn der Welt, 1902
Box 73, Folder 6	Miscellaneous materials
Box 93	Report from the Select Committee on Lighting by Electricity, London, June 13, 1879
Box 93	Report from the Select Committee on Lighting by Electricity, London, 1882
Box 93	Electrical Supplies (handbook edition), compiled and published by the Howland Publishing Co., N.Y., 1915
Box 93	A large folder containing news clippings
Box 93	Miscellaneous reference materials
Box 93	Address book
Box 93	Human Radium news clipping, SI color oversize neg. #77-4234
Box 74, Folder 5	William J. Hammer Scientific Collection Illustrated, guide to the collection prepared by Mabel Hammer Assheton, undated
Map-folder 1	Celebration All Over the United States in Honor of Ocean Telegraphing, 1858-09 1 Poster (22" x 28")
Map-folder 2	Exhibition of Edison Lamp of Harrison, New Jersey at the Centennial Exposition of the Ohio Valley and middle Atlantic States, Cincinnati, Ohio, 1888-10-26
Map-folder 2	Newspaper clipping, Edison at International Electrical Exhibition, Philadelphia, Pennsylvania, The Daily Graphic, 1884

Map-folder 2	Newspaper clipping, Glimpses of the Edison Electrical and Photographic Exhibit, Paris Centennial Exposition of 1889, 1889
Map-folder 2	Order 158, curve of 18 regular bamboos on deposit clamps on platina wires, notebook 192, 1881-02
Map-folder 2	Order 39, curve of 9 regular bamboos, bamboo called hanchitee sample marked 'R", notebook 219, 1881-02-26
Map-folder 2	Edison Electric Light Company, information for agents, 1885-1886
Map-folder 2	Chart showing the variations of Cu wire, 1882
Box 109, Folder 12	Sketch of Mr. Rudd's neon and mercury vapor lamp, 1933-11-29
Box 109, Folder 14	Miscellaneous diagrams, 1840, 1898 Notes: Includes sketches by Hammer and a jenks diagram No. 1 of Neefe's liquiud rheostat of 1840.

Return to Table of Contents

Series 4: Photographs, 1880-1925

Scope and Contents: The photographs in this series consist of twenty-three boxes of photographs arranged into three groups: Subseries 4.1: Photographs relating to Hammer; Subseries 4.2: Edisonia photographs; and Subseries 4.3: Photographs relating to reference materials. Nine of the twenty-three boxes in Series 4 are oversized.

Subseries 4.1: William J. Hammer Papers, 1880-1883

Box 94, Folder 1	Hammer
Box 94, Folder 2	Hammer biographical
Box 94, Folder 3	Hammer scientific collection (all aspects)
Box 94, Folder 3	[William Hammer sitting in his lab, black & white photoprint], Circa 1900 1 Item (Silver albumen? on paper.; 10.1" x 13.3") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000007 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Lab contains a wide variety of items -- books, light bulbs, x-rays, photographs, recording machines, etc. Topic: Laboratories Light bulbs X-rays Genre/Form: Photographs -- 1890-1900 -- Black-and-white photoprints
Box 88, Folder 4	Hammer's historical collection of incandescent lamps
Box 94, Folder 5	Hammer's office
Box 96, Folder 1	Berlin, 1883
Box 96, Folder 2	Blueprints
Box 96, Folder 3	First marine installation, 1880
Box 96, Folder 4	Holburn viaduct, 1882
Box 96, Folder 5	Johnston, Pa.
Box 96, Folder 6	Lectures

Subseries 4.2: Edisonia, 1880-1907

Box 97, Folder 1-3
Menlo Park, New Jersey
Notes: includes Edison's Laboratory and the first electric lamp factory and machine shop

Box 97, Folder 4
Edison Pioneers (group)

Box 97, Folder 2
[Edison and other men on the stairs and porch, black & white photoprint], Circa 1880
1 Item (Silver gelatin on paper.; 9.6" x 13.0")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000021 (AC scan number)
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
Edison is in the center.
Names: Edison, Thomas A. (Thomas Alva), 1847-1931
Topic: Laboratories
Genre/Form: Photographs -- 1890-1910 -- Black-and-white photoprints

Box 97, Folder ?
AIEE

Box 97, Folder ?
[American Institution of Electrical Engineers Annual Dinner, black & white photoprint], February 11, 1904
1 Item (Silver gelatin on paper; 10.4" x 13.5")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000015 (AC scan number)
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
View of dinners from above. Hall decorated with swags of electric lights.
Topic: Electrical engineering
Dinners and dining
Genre/Form: Photographs -- 1900-1910 -- Black-and-white photoprints

Box 97A, Folder 1
Edison

[Edison with voice recording machine and large globe, black & white photoprint], 1907
1 Item (10.4" x 13.5")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000016 (AC scan number)
Silver gelatin on paper.

Series 4, box 97a. folder ?.
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
Photograph by Pach Bros. in New York.
Names: Edison, Thomas A. (Thomas Alva), 1847-1931
Topic: Sound -- Recording and reproducing
Genre/Form: Photographs -- 1900-1910 -- Black-and-white photoprints

Box 97A, Folder 2 — Sims Edison electric torpedo

Box 97A, Folder 3-4 — Menlo Park, New Jersey -- includes Edison's Laboratory and the first electric lamp factory

[Edison's first lamp factory, Menlow Park, New Jersey, black & white photoprint], 1880 or 1881
1 Item (7.4" x 9.2")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000018 (AC scan number)
Silver gelatin on paper.
Series 4, box 97a. folder 3.
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
Mr. Holzen and his glass blowers posed outside of of the building.
Names: Edison, Thomas A. (Thomas Alva), 1847-1931
Topic: Light bulbs
Glass blowing and working
Genre/Form: Photographs -- 1890-1910 -- Black-and-white photoprints

[Interior of Edison's laboratory, Menlo Park, New Jersey : black & white photoprint.], 1880
1 Item (9.8" x 13.0".)
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000019 (AC scan number)
Silver gelatin on paper, mounted on cardboard.
Series 4, box 97a. folder 3.
Unrestricted research use on site by appointment. Photograph must be handled with cotton gloves unless protected by sleeves.
Men in the photograph are identified in ink on the mountboard.
Mountboard brittle, broken.
Names: Edison, Thomas A. (Thomas Alva), 1847-1931
Topic: Laboratories
Place: New Jersey
Menlo Park (N.J.)

	Genre/Form: Photographs -- 1890-1910 -- Black-and-white photoprints
Box 97A, Folder 5	Buildings at West Orange, New Jersey and Milan, Ohio
Box 97A, Folder 6	Photographs of the Edison M. 30cp "Ghost"

Edison M. 300 c.p. "ghost" light bulb, [black & white photoprint], 1893
1 Item (7.0" x 5.0")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000020 (AC scan number)
Silver gelatin on paper.
Series 4, box 97a. folder 6.
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
"Proof of my [William Hammer] discovery in Feb 1881 of "Phantom Shadow" written on the photo.
Topic: Light bulbs
Genre/Form: Photographs -- 1890-1910 -- Black-and-white photoprints

Box 97A, Folder 7	Newark, N.J., laboratory
Box 97A, Folder 8	Edison Pioneers
Box 97A, Folder 9	Edison magnetic ore separator

Subseries 4.3: Reference Materials, 1880-1925

Box 102, Folder 1-2	Portraits of Scientific Men, undated
Box 102, Folder 3	Distribution of Power by Sprague Motors in Boston, 1887
Box 102, Folder 4	Ernest Ruhmer's Sun Eclipse Records, 1905
Box 102, Folder 5	Hoburn Viaduct, London, 1882
Box 102, Folder 6	St. Louis Exposition, 1904
Box 102A, Folder 3	Motors (generators dynamos)
Box 102A, Folder 5	Goddess of Electricity
Box 102A, Folder 1	Portraits of scientific men, undated
Box 102A, Folder 2	Cleveland Car Show, 3rd Brush Generator Starting, Motor & Battery Ignition, 1921

Box 102A, Folder 4	William Wallace Laboratory and machinery
Box 102A, Folder 6	Miscellaneous
Box 74, Folder 1	Electricity lamp distribution system
Box 74, Folder 2	Phonograph
Box 74, Folder 3	Poulsen's telegramaphone
Box 74, Folder 4	Radium: 'A Scientific Hand"; radioactive substances
Box 103, Folder 1	Electric Railways, circa 1900
Box 103, Folder 2	La Traxione Elettrica Sulle Linee vallellinese
Box 103, Folder 3	Selenium
Box 103, Folder 4	Self-propelled "orientator"
Box 103, Folder 5	Miscellaneous, 1882-1919
Box 103	Electric Signs

[World's Fair photographs], [1881-1904]

2 Boxes (Approx. 150 photographs)

Box 98
Box 99

Collector:	Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language:	English.
Local Numbers:	85-8784 (OIPP Neg.)
Physical Characteristics and Technical Requirements:	Silver gelatin on paper.
	Silver albumen on paper.
General:	Photographs in boxes 98-99, Series 4, Photographs.
Scope and Contents:	Approx. 150 photographs of five World's Fairs: the Exposition Universelle (Paris 1889); the Berlin Exposition (1883, with an 1881 photograph); the London Crystal Palace Exposition (1882); the 1884 Philadelphia fair; the St. Louis fair, 1904; etc. Edison's inventions are numerous, but other scenes, such as the Eiffel Tower, are also included.
Condition:	Most prints are in delicate condition, often on very brittle mount board. Some albumen prints are faded.
Names:	Edison, Thomas A. (Thomas Alva), 1847-1931 Louisiana Purchase Exposition (1904: Saint Louis, Mo.)

	Exposition universelle de 1889 (Paris, France)
Topic:	Exhibitions
	World's fairs
Place:	Tour Eiffel (Paris, France)
	Paris (France)
	Saint Louis (Mo.) -- 1900-1910
	Berlin (Germany)
	Philadelphia (Pa.)
Genre/Form:	Photographs -- Archives Center

Box 98	Paris Exposition (photo album), 1889
	Expositions, world:
Box 99, Folder 1	Berlin Exposition, 1883
Box 99, Folder 2	Philadelphia Exposition, 1884
Box 99, Folder 2	The first flashing column of light [black & white photoprint], 1884 1 Item (Silver gelatin on paper.; 12.3" x 10.0") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000004 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Column designed and built by William J. Hammer for the Franklin Institute International Electric Exposition at Philadelphia, Pennsylvania, 1884. Names: Franklin Institute International Electric Exposition (1884) (Philadelphia, Pa.,) Topic: Light bulbs Incandescent lamps Exhibitions Electric lighting Genre/Form: Photographs -- 1880-1890 -- Black-and-white photoprints
Box 99, Folder 3	Ohio Valley and Central states Exposition, 1888
Box 99, Folder 4	Paris Exposition, 1889
Box 99, Folder 5	Crystal Palace, London, 1892
Box 99, Folder 6	St. Louis Exposition, 1904
Box 99, Folder 6	St. John, New Brunswick, Canada, 1888

Box 75	J. Allen Heany Workshop, York, Pennsylvania
Box 76	J. Allen Heany Workshop, York, Pennsylvania
Box 77	J. Allen Heany Workshop, York, Pennsylvania
Box 78; Box 79; Box 80; Box 100; Box 101	Lamp bulbs, bulbs, sockets Notes: [includes one problem photo with mold (101)]
Box 79, Folder 1	[Four early light bulbs : black & white photoprint.], 1904 1 Item (Silver gelatin on paper; 4.0" x 7.1") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000001 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Topic: Light bulbs Incandescent lamps Electric lighting Genre/Form: Photographs -- 1900-1910
Box 80	[Five early light bulbs displayed, black & white photoprint], Circa 1920 1 Item (Silver gelatin on paper; 7.7" x 13.1") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English. Notes: AC0069-0000011 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. The display lists makers name, date, and other details. Dates range from 1881 to 1883; makers Nothomb, Gatehouse, Rogers, and Latimer. Topic: Light bulbs Incandescent lamps Electric lighting Genre/Form: Photographs -- 1910-1920
Box 80	[Row of 5 light bulbs by Nothomb, Gatehouse, Rogers, and Latimer : photoprint], [ca. 1880s.] 1 Item (Silver gelatin or albumen? on paper, mounted.) Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English.

	Notes:	02006903.tif (AC Scan No.} Bulbs have labels with dates from 1881 to "1882-3."
	Topic:	Lamps Light bulbs Exhibitions
	Genre/Form:	Photographs -- 1880-1890 -- Black-and-white photoprints
	Hammer apparatus	
Box 81	Photograph album at the dedication exercises, Menlo Park, N.J., May 16, 1925	
Box 81	Photos of laboratory	
Box 81	Photos of light bulb	
Box 81	Photos of Menlo Park abandoned	
Map-folder 3	The History of an Art, Historical Collections of Incandescent Electric Lamps, William H. Hammer, New York, [1910?] 1 Photograph (19 3/4' x 26 5/8")	
Box 81	Photos of objects - Franklin Experimental Club	
	Hammer Collection of portraits:	
Box 82	1-A collection of 57 photographs of prominent telegraph men	
Box 82	2-A photograph album of prominent electrical men	
	Portraits of "Eminent Men of Electrical Science" Notes: Arranged alphabetically.	
Box 109, Folder 4	Portraits of Eminent Men of Electric Science, biographical index cards, undated	
Box 83	A-D	
Box 83		Alexander, Patrick
Box 83		Ampere
Box 83		Anthony, William
Box 83		Arnold, Bion, J.
Box 83		Ayer, J.A.
Box 83		Ayerton and Perry - includes pictures of Mrs. Ayerton, W.E.

Box 83	Ayerton, John Perry
Box 83	Ayerton, W.E.
Box 83	Ayres, Brown
Box 83	Badt, Frances
Box 83	Banett
Box 83	Banti, Angelo
Box 83	Barker, George
Box 83	Barstrous, William S.
Box 83	Bassia, Alydallo
Box 83	Batchelor, Charles
Box 83	Baulis, R.N.
Box 83	Beck, James, M.
Box 83	Beddoe, D.J.
Box 83	Bedell, Frederick
Box 83	Bell, Alexander G.
Box 83	Bell, Louis
Box 83	Benjamin, Park
Box 83	Benton, W.B.
Box 83	Berliner, Emile
Box 83	Bequerel, Edmund
Box 83	Bequerel, Henry
Box 83	Berzelvs
Box 83	Bissal, E.
Box 83	Blogger

Box 83	Blondel , Andre
Box 83	Bohm, L.K.
Box 83	Bonney, T.G. (Dr.)
Box 83	Bristol Brace, DeWitt
Box 83	Brooks, David
Box 83	Brophy, William
Box 83	Brown, Harold P.
Box 83	Brown, L.E.L.
Box 83	Brown, Stanford
Box 83	Brown, Walter E.
Box 83	Brush, Walter E.
Box 83	Burridge, Lee S.
Box 83	Carhart, H.S.
Box 83	Carnegie, Andrew
Box 83	Chandler, C.F.
Box 83	Chaterlain, M.
Box 83	Chevreul, Michael Eugene
Box 83	Clark, Edwin
Box 83	Clark, Latimer
Box 83	Cody, William F. Honorable
Box 83	Colby, Edward
Box 83	Cooks, Pavson
Box 83	Cox, H.B.
Box 83	Crehore, Albert

Box 83	Crocker, Francais B.
Box 83	Crompton, Alfred G.
Box 83	Crop, Charles R.
Box 83	Crosby, 0.
Box 83	Curie, Madame, and Monsieur
Box 83	Cuttriss, Chas.
Box 83	Daft, Leo
Box 83	Dahl, Olaf
Box 83	Davenport, Thomas
Box 83	Davis, Daniel
Box 83	Delany, Patrick R.
Box 83	Deprez, Marcel
Box 83	DeSimone, D.R.
Box 83	Dewar, James
Box 83	Diehl, Philip
Box 83	DeFerranti, S.Z. (Dr.)
Box 83	Duddell, William
Box 83	Duncan, Louis
	E-G
Box 84, Folder E-G	Eantz, Justus B.
Box 84	Eckener, Dr. Hugo
Box 84	Edison, Thomas - See Box 15
Box 84	Eickemeyer, R.
Box 84	Emery, Charles

Box 84	Ewing, J.A.
Box 84	Faraday, Michael (Professor)
Box 84	Farmer, Moses
Box 84	Faure, Camille
Box 84	Ferrari, Galileo
Box 84	Field, Cryus West
Box 84	Field, C., J.
Box 84	Field, Stephen D.
Box 84	Finsen, N.R.
Box 84	Fisborne, Frederic N.
Box 84	Fitzgerald, Desmond S.
Box 84	Fritsimonds, Chas.
Box 84	Fleming, J.A.
Box 84	Foote, Allen K.
Box 84	Forbes, George
Box 84	Ford, Frank R.
Box 84	Foster, Horatio A.
Box 84	Frulich, G.
Box 84	Fujioka, J.
Box 84	Gammell, Joseph, J.
Box 84	Geyer, William
Box 84	Gladstoning, J.H.
Box 84	Gramme, M. Zenobe
Box 84	Gray, Elisha

Box 84	Green, George F.

George F. Green [black & white photoprint], 1891
1 Item (Silver gelatin on paper; 6.5" x 4.2")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Language: English.
Notes: AC0069-0000012 (AC scan number)
Series 4, box 85. folder George F. Green.
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
Studio portrait by Wood of Kalamazoo, Michigan.
Names: Green, George F., 1830-1892
Genre/Form: Studio portraits
Photographs -- 1890-1900 -- Black-and-white photoprints

Box 84	Gutmann, Ludwig
Box 84	Guy, George H.

H-M

Box 85, Folder H-M	Hamblet, James

Box 85, Folder James Hamblet

James Hamblet [black & white photoprint], April 20, 1893
1 Item (Silver albumen on paper, on cabinet card.; 6.5" x 4.3")
Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer)
Photographer: Naegeli (Union Square, New York)
Language: English.
Notes: AC0069-0000005 (AC scan number)
Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves.
Studio portrait (cabinet print) by Naegeli, 46 E. 14th St., Union Square, New York City.
Names: Hamblet, James, 1824-1900
Place: New York (N.Y.) -- 1880-1890
Genre/Form: Cabinet prints
Photographs -- 1880-1890 -- Black-and-white photoprints -- Silver albumen
Studio portraits

Box 85	Hammer, William
Box 85	Haskins, C.C.

Box 85	Haskins, Cary D.
Box 85	Haskins, C.H.
Box 85	Heaney, J. Allen
Box 85	Heinrich, Richard 0.
Box 85	Helmholtz, Herman
Box 85	Hering, Carl
Box 85	Hering, Hermann S.
Box 85	Hertz, H.
Box 85	Herzog, Benedict
Box 85	Hess, Adolfo G.B.
Box 85	Hibbord, Angus P.
Box 85	Hochhausen, William
Box 85	Hooker, J. (Sir)
Box 85	Hopkinson, John
Box 85	Hospitaller, E.
Box 85	Houston, E.J.
Box 85	Howell, Charles W.
Box 85	Hutchinson, Cary T.
Box 85	Infreville G.D.
Box 85	Jackson, D.C.
Box 85	Jameson, Andrew
Box 85	Jehl, Francis
Box 85	Joel, Henry F.
Box 85	Johnson, Edward

Box 85, Folder Edward Johnson	Edward H. Johnson [black & white photoprint], Circa 1895 1 Item (Silver albumen on paper, mounted on cabinet card.; 6.2" x 4.2".) Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Photographer: Falk (949 Broadway, New York (N.Y.) Language: English. Notes: AC0069-0000008 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Studio portrait (cabinet print) by Falk of New York City. Names: Johnson, Edward H., 1846-1917 Genre/Form: Photographs -- 1890-1900 -- Black-and-white photoprints -- Silver albumen Cabinet prints Studio portraits
Box 85	Jones, J. W.
Box 85	Kapp, Gisbert
Box 85	Kareis, T.
Box 85	Kelly, John F.
Box 85	Kemple, A.B.
Box 85	Khotinsky, Ade, (Capt.)
Box 85	Kinsman, Frank E.
Box 85	Kintner, Charles J.
Box 85, Folder Charles Kintner	Charles J. Kintner [black & white photoprint, cabinet print], Circa 1895 1 Item (Silver gelatin on paper, mounted.; 6.3" x 4.3") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Photographer: Davis, G. W Language: English. Notes: AC0069-0000006 (AC scan number) Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Studio portrait by G. W. Davis, with studios in Washington, D.C. and Richmond, Va. Subject's name hand-written in ink at bottom of print. Image faded, mount ragged.

	Names:	Kintner, Charles J.
	Topic:	Astronomers
	Genre/Form:	Cabinet prints Photographs -- 1890-1900 -- Black-and-white photoprints -- Silver albumen Studio portraits
Box 85	Kittier, E.	
Box 85	Knudson, A.A.	
Box 85	Krusi, John	
Box 85	Lahmeyer, W.	
Box 85	Lame, B.G.	
Box 85	Lange, Philip A.	
Box 85	Langley, Samuel P.	
Box 85	Latimer, Lewis Howard	
Box 85	Lenant, P.	
Box 85	Lieb, A.	
Box 85	Lieb,.J.W. Jr.	
Box 85	Lister, Lord	
Box 85	Lockwood, Thomas D.	
Box 85	Lockyer, Norman (Sir)	
Box 85	Lodge, Oliver (Sir)	
Box 85	Loduquine, Alexander	
Box 86	Macfarlane, A.	
Box 86	Mackenzie, D.	
Box 86	Macmillan, Donald B.	
Box 86	Manfield, George W.	

Box 86	Mann, Abbon
Box 86	Marconi, G
Box 86	Marks, Louis B.
Box 86	Marks, William D.
Box 86	Maver, William
Box 86	maxim, Hudson
Box 86	Maynard, George Colton
Box 86	Moedebeck, Hermann W.L.
Box 86	Mordry, W.M.
Box 86	Morrison, George P.
Box 86	Moses, Otto
Box 86	Mott, Samuel
Box 86	Mottelay, B.
Box 86	Moultou, J. Fletcher
Box 86	Mungle, Alexander
	N-
Box 86	Nerst, Walter
Box 86	Niblett, J.T.
Box 86	Nichols, Edward L.
Box 86	Normize, William B.
Box 86	Norton, Henry
Box 86	Orsted, H.C.
Box 86	Osterberg, Max
Box 86	Pacinotti, Antonio

Box 86	Patters, J.
Box 86	Pender, William
Box 86	Perks, Robert (Sir)
Box 86	Perkins, Frank
Box 86	Perrine, Frederic A.
Box 86	Perry, Nelson
Box 86	Phelps, George M.
Box 86	Phillips, A.
Box 86	Pope, F.L.
Box 86	Pope, Ralph W.
Box 86	Poulsen, V.
Box 86	Powers, Longworth
Box 86	Preece, W.H.
Box 86	Price, Eliss W.
Box 86	Puhy, Professor D.
Box 86	Pupin, Michael
Box 86	Rae, Frank B.
Box 86	Reckenzam, A.
Box 86	Rice, E. Wilbur Jr.
Box 86	Ries, Elias E.
Box 86	Rittenhouse, Charles
Box 86	Roberts, E.P.
Box 86	Rodger, James H. (Dr.)
Box 86	Road, Ogden Nicholas

Box 86	Rohrer, A.L.
Box 86	Roscoe, H. (Sir)
Box 86	Ruhmer, Ernst
Box 86	Rutherford, E.
Box 86	Ryan, Harris J.
Box 86	Sargeant, W.D.
Box 86	Schuckert, T.
Box 86	Seely, John A.
Box 86	Seymore, F.M.
Box 86	Sheldon, Sarnuel
Box 86	Shepardson, George D.
Box 86	Short, Sidney
Box 86	Sieineus, William
Box 86	Siemens, Carl
Box 86	Siemens, Werner van
Box 86	Siemiens, Alex
Box 86	Sonn, George C. (Professor)
Box 86	Spagnoietti, C.E.
Box 86	Sperry, Edur R.
Box 86	Sprague, Frank J.
Box 86	Sprague, John T.
Box 86	Stanley, William
Box 86	Steinmetz, Charles
Box 86	Stieringer, Luther

Box 86	Stockbridge, George Herbert
Box 86	Sullivan, W.,J
Box 86	Swan, Joesph
Box 86	Swinton, A.A.C.
	T-Z
Box 87, Folder T-Z	Tanzelmann, Glade
Box 87, Folder T-Z	Tesla, Nikola
Box 87, Folder T-Z	Thompson, Edward P.
Box 87, Folder T-Z	Thompson, Silvanua
Box 87, Folder T-Z	Thomson, Elihu
Box 87, Folder T-Z	Thomson, J.J.. (Sir)
Box 87, Folder T-Z	Tilden, W.A. (Sir)
Box 87, Folder T-Z	Trouve, Gustave
Box 87, Folder T-Z	Townsend, Henry C.
Box 87, Folder T-Z	Turner, Walter (Sir)
Box 87, Folder T-Z	Uppenborer, F.
Box 87, Folder T-Z	Upton, Francis R.
Box 87, Folder T-Z	Vaile, Theordore
Box 87, Folder T-Z	Van DePoele, Charles Joseph
Box 87, Folder T-Z	Volta, Alexander
Box 87, Folder T-Z	Waddell, Montgomery
Box 87, Folder T-Z	Wallace, William
Box 87, Folder T-Z	Waltenhofen, A. von (Dr.)
Box 87, Folder T-Z	Webb, Herbert Laws

Box 87, Folder T-Z	Webb, T.
Box 87, Folder T-Z	Westinghouse, George
Box 87, Folder T-Z	Weston, Edward
Box 87, Folder T-Z	Wetzler, Joseph
Box 87, Folder T-Z	Wheatstone, Charles (Sir)
Box 87, Folder T-Z	White, William (Sir)
Box 87, Folder T-Z	Wilson, Fremont
Box 87, Folder T-Z	Wilson, Woodrow (President)
Box 87, Folder T-Z	Wineshurst, James
Box 87, Folder T-Z	Wirt, Charles
Box 87, Folder T-Z	Wolcott, Townsend
Box 87, Folder T-Z	Wood, James, Mannaritt
Box 87, Folder T-Z	Wright, Wilbur
Box 87, Folder T-Z	Wurtz, Alexander Jay
Box 87, Folder T-Z	Young, A.M.
Box 87, Folder T-Z	Zalinski, E.L.
Box 104	Glass Plate Negatives (some broken) of various subjects
Box 105	Glass Plate Negatives (some broken) of various subjects
Box 106	Glass Plate Negatives (some broken) of various subjects
Box 107	Glass Plate Negatives (some broken) of various subjects
	Contact Prints
Box 89	[William Hammer sitting in his lab, black & white photoprint], Circa 1900 1 Item (10.1" x 12.5") Collector: Hammer, William J. (William Joseph), 1858-1934 (electrical engineer) Language: English.

	Notes: AC0069-0000017 (AC scan number) Silver gelatin on paper. Series 4, box 89. folder ?. Unrestricted research use on site by appointment. Photographs must be handled with cotton gloves unless protected by sleeves. Lab contains a wide variety of items - books, lightbulbs, x-rays, photographs, recording machines, etc. Duplicate and cropped version of photograph in box 94, folder 3. Topic: Light bulbs X-rays Genre/Form: Photographs -- 1890-1900 -- Black-and-white photoprints
Box 88	Photographs of Hammer's Collection of Incandescent Light Bulbs, 1880 1920
Box 109, Folder 5	Norimberga [Nuremberg Central Station, Germany, undated
Box 110, Folder 1	Glass plate negatives from Ernest Ruhmer given to William Hammer in Berlin, 1902-1903 9 Glass plate negatives Notes: Includes selenum drawings of various applications.
Box 110, Folder 2	Photograph of J. Swan, undated
Box 110, Folder 3	Radio tubes, World War I aircraft transmitter, excerpts from Hammer's notebook describing "phantom shadows" and a radio exhibit, undated
Box 110, Folder 4	William J. Hammer with Outcault and Hardy
Box 110, Folder 5	Old telegraph instrument, 1922-10-31
Box 110, Folder 6	Professor Alex J. Bell, undated 1 Glass plate negative
Box 110, Folder 7	Professor Heinrich Hertz, undated 1 Glass plate negative
Box 110, Folder 8	Gallileo Fereris, undated 1 Glass plate negative
Box 110, Folder 9	Vollos Family coast of arms, [1900?] 1 Glass plate negative
	Hammer glass plate negatives (from Port Chester, New York], 1880-1883-08-28 14 Glass plate negatives
Box 111	First attachment plug, 1883-08-28

Box 111	Party wire to enter the Royal Pavilion, undated
Box 111	Edison signs flash intermittently, Menlo Park, New jersey, 1880-03
Box 111	Historic attachment plug, berlin, 1883-08-28
Box 111	Books on tables, undated
Box 111	Riding hall at Port Chester, New York, books in [Hammer's library?], undated
Box 111	Proof of my discovery of the phantom shadow, 1881-02
Box 111	Lamp drawing, 1880-01
Box 111	Drawing of invention of copper plated clamps for incandescent lamps, 1880
Box 111	Portrait of elderly man and woman, undated
Box 111	Lamp, Menlo Park, 1880-02-01
Box 111	Drawing of first thought of while the...made to show before the factory started in 1880, 1880
Box 111	Proof of my discovery of the phamtom shadow, 1881-02
Box 111	Lamp, Menlo Park, New jersey, 1880-02
Box 111	Copy prints of glass plate negatives
Box 103, Folder 6	Edison Central Station at Crystal Palace, International Electric Exhibition, 1882
Box 103, Folder 6	Gebruder Korting Works, Hannover, 1900
Box 103, Folder 6	Gebruder Korting Works, Hannover, 1900
Box 103, Folder 6	Gebruder Korting Works, Hannover, 1900
Box 103, Folder 6	Cockerill Blowing engine, Paris Fair, 1900
Box 103, Folder 6	Cockerill Blowing engine, Paris Fair, 1900
Box 103, Folder 6	Edison Central Station at Crystal Palace, International Electric Exhibition, 1882
Box 103, Folder 6	Edison Steam Jumbo Synamo, 1881

Subseries 4.4: Glass Plate Photonegatives

Box 112	Light bulb displays, Edison volunteers, and power plants, undated 4 Glass plate negatives
Box 113	Houses, people, railroad cars, undated 4 Glass plate negatives
Box 114	Light bulb displays, undated 4 Glass plate negatives
Box 115	Light bulb displays, undated 4 Glass plate negatives
Box 116	Light bulb displays, undated 5 Glass plate negatives
Box 117	Light bulb displays, undated 5 Glass plate negatives
Box 118	Light bulb displays, undated 3 Glass plate negatives
Box 119	Light bulb displays, undated 4 Glass plate negatives
Box 120	Light bulb displays, undated 4 Glass plate negatives
Box 121	Light bulb displays, undated 4 Glass plate negatives
Box 122	Light bulb displays, undated 5 Glass plate negatives
Box 123	Light bulb displays, undated 4 Glass plate negatives
Box 124	Riding Hall at Port Chester, #1, undated
Box 124	Riding Hall at Port Chester, #2, undated
Box 124	Riding Hall at Port Chester, #3, undated
Box 124	[G.E. generator?] and switch panel, undated
Box 124	Electrical power and switch panel, undated

Box 124	Dr. Hertz portrait, undated
Box 124	Henri Bequerel portrait, undated
Box 124	Mt. Royal substation, undated
Box 124	[#17], Columbian Exposition, Electricity Building, Westinghouse Electric and Manufacturing Company, Tesla Polyphase System, Exhibit, 1893. , 1893
Box 124	[#91], Columbian Exposition, Electricity Building, Westinghouse Electric and Manufacturing Exhibit, 1893. , 1893
Box 124	[#295], Columbian Exposition, Electricity Building, Edison Photograph Exhibit and Illinois Alloy Company Exhibit, 1893., 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	[#238], Columbian Exposition, Electricity Building, Fort Wayne Electric Company, 1893. , 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	Columbian Exposition, Electricity Building, 1893
Box 124	Columbian Exposition, Electricity Building, 1893
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Box 1 (Addenda)	Addenda