



Smithsonian

*National Museum of American History Kenneth E. Behring Center*

## Guide to James Leffel and Company Records

NMAH.AC.0960

Alison Oswald

2022

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## Collection Overview

<b>Repository:</b>	Archives Center, National Museum of American History
<b>Title:</b>	James Leffel and Company Records
<b>Date:</b>	circa 1848-1976
<b>Identifier:</b>	NMAH.AC.0960
<b>Source:</b>	National Museum of American History (U.S.). Division of Work and Industry (Collector) National Museum of American History (U.S.). Division of History of Technology (Collector) National Museum of American History (U.S.). Division of Mechanical and Civil Engineering (Collector)
<b>Creator:</b>	James Leffel and Company (Creator)
<b>Extent:</b>	20 Cubic feet (42 boxes)
<b>Language:</b>	Some materials in German and Spanish.
<b>Summary:</b>	Collection documents James Leffel and Company of Springfield, Ohio, manufacturer of turbines, water wheels and engines.

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## Administrative Information

### Immediate Source of Acquisition

Collected for the National Museum of American History.

### Ownership and Custodial History

Collection transferred by the Division of Work and Industry to the Archives Center in 2007.

### Related Materials

#### **Materials at the Smithsonian**

Smithsonian Institution Libraries, Trade Literature Collection

Pelton Water Wheel Collection, NMAH.AC.1093

Lombard Governor Company Records, NMAH.AC.1091

Niagara Falls Power Company Photographs, NMAH.AC.0949

J. & W. Jolly Company Records, NMAH.AC.1009

Uriah Boyden Papers, NMAH.AC.0982

William R. Hutton Papers, NMAH.AC.0987

Warshaw Collection of Business Americana, Series: Waterworks

#### **Materials at Other Organizations**

**Special Collections and Archives, University Libraries, Wright State University, Dayton, Ohio**

### James Leffel & Company Records, 1867-1971

The James Leffel and Company Records consist of ledgers, journals, order books, inventories, cash and day books, payroll files, correspondence, photographs, publications, and scrapbooks of a late 19th and early 20th century Springfield, Ohio manufacturer of turbines, water wheels and engines.

### Ohio Historical Society, Columbus, Ohio

#### James Leffel and Company Records, 1845-1890

Records of water-wheel company of Springfield, Ohio including a letter press book, notebook of hydraulic tables, and patents for water wheels and cooking stoves.

## Processing Information

Collection processed by Alison Oswald, archivist, 2022.

Photostat copies of original patents in the collection were removed.

## Preferred Citation

James Leffel and Company Records, 1867-1957, Archives Center, National Museum of American History.

## Restrictions

Collection is open for research.

## Terms Governing Use and Reproduction

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

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## Biographical

James Leffel was born in 1806 in Botetourt County, Virginia to John and Catherine Leffel. The family moved to Ohio, settling near Springfield, where John Leffel established saw and grist mills. Leffel grew up surrounded by mills and developed a strong interest in water wheels. Leffel trained as a millwright acquiring skills in metal work to make sickles, knives, and other small iron implements. In the late 1830s, Leffel established his first foundry and machine shop near Springfield, Ohio, quickly expanding and taking on two partners, William A. John and T.Y. Ferrell and adding mill gearing and stoves to their line of products. By 1845, Leffel ended his business relationship with John and Ferrell and formed a partnership with William Blackeney, a machinist who helped him support the foundry and its work. In 1846, Andrew Richards joined Leffel to build a cotton mill and machine shop. Leffel envisioned the utilization of water power in Springfield, Ohio, with the establishment of mills along a race--a dug channel leading from a creek or river to the mill--that would eventually bring trade. With the help of Samuel and James Barnett, gristmill operators, Leffel was able to "cut a race" and erect a Water Power and Flouring Mill. Leffel was especially interested in water wheel development and would receive patent US34,150 for a water wheel (1862) which later reissued as RE1791 and RE1792 in 1864.

Leffel also patented cooking stoves (US6775) in 1849 which became known as the "Buckeye," "Double Oven" and "Red Cook Stove" that were successful and earned him a strong reputation. In 1852, Leffel broke with Richards, and Nathaniel Cook, a machinist, joined Leffel and Blackeney. With his 1862 patent for a water wheel, Leffel focused his attention on demonstrating the water wheel and speaking about its productive uses. Numerous test runs of the water wheel convinced Leffel that he could sell the wheel to mills and factory operators. Leffel marketed the wheel as the "American Double Turbine" an efficient, cheap turbine for the mass market (Layton page 86 ). In 1863, Leffel and Blackeney formed a new firm, along with Perry Betchel and Leander Mudge to create a foundry designed solely for the production of the wheel.

Leffel later joined forces with John Foos, a mill operator and James S. Goode, a lawyer, to form the James Leffel and Company. Leffel sold his water wheel to flour mills, woolen goods manufacturers, paper mills and farm equipment manufacturers. The company became one of the leading manufacturers of waterwheels and turbines and today continues to operate under the name of James Leffel and Company as part of Canyon Hydro which acquired the company in 2019.

Leffel died in 1866.

### Source

Becker, Carl M. "James Leffel: Double Turbiner Water Wheel Inventor, *Ohio History*, Volume 75, No. 4, Autumn 1966, pages 200-211.

Layton, Edwin. "Scientific Technology, 1845-1900: The Hydraulic Turbine and the Origins of American Industrial Research," *Technology and Culture*, January 1979, Vol. 20, No. 1, pages 64-89.

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## Scope and Contents

The records contain business and legal records; correspondence; patents and patent files; specifications; charts; blueprints; mechanical drawings and original catalog art; photographs and negatives; catalogs, and clippings documenting James Leffel and Company.

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## Arrangement

The collection is arranged into eight series.

Series 1: Correspondence, 1974-1978

Series 2: Patent Materials, 1848-1931

Series 3: Testing Data, 1913-1966, bulk 1920s

Series 4: Catalogs, 1870-1946

Series 5: Catalog Artwork, 1919-1959

Series 6: Trade Literature, 1890s-1976

Series 7: Photographs, 1908-1929

Series 7: Writings and Journal Articles, 1881-1854

Series 8: Glass Plate Negatives, 1890s-1950s, undated

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## Names and Subject Terms

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

Subjects:

- Hydraulic turbines
- Steam-boilers
- Steam-engines
- Stokers, Mechanical
- Turbines
- Valves
- Water-wheels

Types of Materials:

- Blueprints
- Business records
- Charts
- Clippings
- Correspondence
- Drawings
- Glass plate negatives
- Order books
- Patents
- Photographs -- 19th century
- Specifications
- Trade catalogs

Names:

- National Museum of American History (U.S.). Division of History of Technology
- National Museum of American History (U.S.). Division of Mechanical and Civil Engineering
- National Museum of American History (U.S.). Division of Work and Industry

Places:

- Springfield (Ohio)

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## Container Listing

### Series 1: Correspondence, 1874-1978

Box 1, Folder 1	Chronological, 1874; 1892 October - 1896 January
Box 1, Folder 2	Chronological, 1919-1930
Box 1, Folder 3	Alphabetical, Abbot-Armstrong, 1890-1892
Box 1, Folder 4	Alphabetical, Arcadia-Ayers, 1891
Box 1, Folder 5	Alphabetical, Dallies-Dick, 1890-1892
Box 1, Folder 6	Alphabetical, Dickerson-Dyer, 1891
Box 2, Folder 1	Alphabetical, Montague-Moyer, 1892-1895
Box 2, Folder 2	Alphabetical, Mu-Myers, 1892-1894
Box 2, Folder 3	Correspondence, general, 1941-1957
Box 2, Folder 4	Clawson, Perry. Rotary Multiple Combustion Motor, 1925 Notes: File contains pencil sketches of a Rotary Multiple Combustion Motor by Perry Clawson, an inventor from Roswell, New Mexico.
Box 2, Folder 5	Antique turbines, 1961-1961
Box 2, Folder 6	Cole, M. R., 1924
Box 2, Folder 7	Goeriz, Oscar C., 1923
Box 2, Folder 8	Orders, 1944-1945
Box 2, Folder 9	Turbine orders, 1946-1947
Box 2, Folder 10	Turbine orders, 1948-1949
Box 3, Folder 1	Turbine orders, 1950
Box 3, Folder 2	Turbine orders, 1951-1953
Box 3, Folder 3	Turbine orders, 1955
Box 3, Folder 4	Turbine orders, 1956-1957

Box 3, Folder 5	Turbine orders, 1958
Box 3, Folder 6	Sales Engineers, 1941-1957 Notes: Includes memoranda to Leffel Water Wheel Sales Engineers from general manager, J. Robert Groff. The memoranda contain details for specific turbine units, shipping, and installation. Of note is a June 28, 1957 memoranda describing an early Leffel turbine donated to the U.S. National Museum through curator Robert P. Multhauf and correspondence with the Trappist Monastery on Lantaa Island, Hong Kong. The monks at the monastery describe installing a small Leffel horizontal Impulse turbine in 1957.
Box 3, Folder 7	William Quimby, Inc., 1925
Box 3, Folder 8	Zowski, S. J., 1929
Box 3, Folder 9	Leffel Turbine Water Wheels specifications and proposal for Arkansas Hydro Electric Development Co., 1921
Box 3, Folder 10	James Leffel & Co. Order Book (hydraulic turbines), 1867-1868
Box 3, Folder 11	Order Book, 1901-1924
Box 4, Folder 1	Drawings Inventory, 1898-1923
Box 4, Folder 2	Stock Jobs (names and numbers), undated
Box 4, Folder 3	Newspaper Clippings, 1940-1978
Box 42, Folder 1A	Drawings and Sketches, 1919, undated

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## Series 2: Patent Materials, 1848-1931

Scope and Contents: This series consists of patents, both United States and other countries, and correspondence about patent infringement and patent applications. James Leffel and Company was represented by patent and corporate law firm of Toulmin and Toulmin in Dayton, Ohio.

Box 4, Folder 4	List of patents, 1878-1928
Box 4, Folder 5	List of patents, 1881-1928
Box 4, Folder 6	Turbine water wheels (RE, 123-8942), 1848-1879
Box 4, Folder 7	Turbine water wheels (201-33, 584), 1808-1861 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 5, Folder 1	Turbine water wheels (34,073 to 81,557), 1862-1868 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 5, Folder 2	Turbine water wheels (81,632 to 98,330), 1868-1869 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 6, Folder 1	Turbine water wheels (98,561 to 115,551), 1870-1871 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 6, Folder 2	Turbine water wheels (115,578 to 146,068), 1871-1873 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 7, Folder 1	Turbine water wheels (149,607 to 185,788), 1874-1876 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 7, Folder 2	Turbine water wheel patents, (185,946 to 235,702), 1877-1880 1 Volume Notes: Bound volume of turbine water wheel patents.
Box 7, Folder 3	Croft, Henry, 1895
Box 7, Folder 4	Bookwater, Francis M., 1891-1895, 1897, 1901
Box 7, Folder 5	Englebright, William F., 1888
Box 8, Folder 1	Goldberg, David D., patent application serial no. 110,979 for valve mechanism, 1929

Box 8, Folder 2	Goldberg, David D., patent application serial no. 287,141, improvements in valves, 1928-1929
Box 8, Folder 3	Goldberg, David D., patent application, serial no. 748, 631, improvements in valve mechanism, 1929
Box 8, Folder 4	Johnson, Mark W., gyration spiral turbines, 1922
Box 8, Folder 5	Kratz, David K., water wheel assignment, 1858
Box 8, Folder 6	Lake, William Robert, turbine wheels (England), 1869
Box 8, Folder 7	James Leffel and Company, Cascade Water Wheel Trademark, 1894
Box 8, Folder 8	James Leffel and Company, Samson Water Wheel (Russia), 1900
Box 8, Folder 9	Chile, 1894
Box 8, Folder 10	Moody, Lewis F., 1919-1926
Box 8, Folder 11	Moody, Lewis F., 1928-1931
Box 8, Folder 12	Moody, Lewis F. Turbine templates, 1928 Notes: Includes cardboard pattern pieces for the Moody water wheel. The pattern pieces were used to recreate a model of a water wheel invented by Lewis Moody in connection with a patent infringement case (US Patent 1,613,816) of Lewis F. Moody vs. George A. Biggs.
Box 8, Folder 13	Sparks, Albert F., 1893-1905
Box 8, Folder 14	Sparks, Albert Freeman. Water Wheel (Finland), 1901
Box 8, Folder 15	Sparks, Albert Freeman. Water Wheel (Canada), 1906
Box 8, Folder 16	Trump, Fuller, 1891, 1894
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Box 9, Folder 3	Patent Gazette Clippings, 1924-1926
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Box 9, Folder 6	George A. Biggs vs. Lewis F. Moody, infringement, 1925-1929

Box 9, Folder 7	George A. Biggs vs. Lewis F. Moody, infringement, 1929-1932
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Box 9, Folder 9	Invention ideas sent to James Leffel & Company, 1925
Box 9, Folder 10	Moody, Lewis F. validity of US Patent 1, 583, 415, 1929
Box 10, Folder 1	Kaplan, Victor. Turbine articles, 1922
Box 10, Folder 2	Infringement/Interference re: hydraulic turbine development, 1928-1929 Notes: Includes correspondence and legal documents for a patent infringement case related to the development of hydraulic turbines by inventors Lewis F. Moody and George A. Biggs. Biggs assigned his patents to James Leffel and Company.
Box 10, Folder 3	Moody, Lewis F. patents, 1928-1932
Box 10, Folder 4	Infringement re: water wheels, 1891-1901 Notes: Materials relate to F.M. Bookwalter, W.W. Tyler, and A.M. Swain water wheel patents.
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## Series 3: Testing Data, 1913-1966 (bulk 1920s)

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Box 10, Folder 9	Berrien Springs Dam, Michigan, hydraulic turbine test, 1918
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Box 11, Folder 2	Central Power and Light Company, Eagle Pass Development, efficiency test by Gibson Method, 1932
Box 11, Folder 3	William Hamilton Company, Fort Frances Turbines, 1923
Box 11, Folder 4	Hanover Woolen Manufacturing Co., 1921
Box 11, Folder 5	Holyoke Water Power Company, 1910-1926
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Box 11, Folder 7	Holyoke Water Power Company, Test No. 2, large diameter cylinder, 1927
Box 11, Folder 8	Holyoke Water Power Company, testing flume, 1927
Box 11, Folder 9	Holyoke Water Power Company, 500 runner horizontal test, 1927
Box 11, Folder 10	Holyoke Water Power Company, Spanish River Pulp: Paper Mill 500 Plant, 1926
Box 11, Folder 11	Holyoke Water Power Company, Spanish River Pulp & Paper Mill 500 Plant, 1918-1934 Notes: Includes testing data for the American Writing Paper Company, Holyoke Gas and Electric Company, Union Electric Light and Power Company, and Sanitary District of Chicago.
Box 12, Folder 1	Holyoke Testing Flume, 1908-1931
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Box 12, Folder 3	Holyoke Water Power Company, Leffel Type F Turbines, 1929
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Box 13, Folder 1	Holyoke Water Power Company, bottom plate test 47 1/2" R. H. Leffel sparks turbine, 1916
Box 13, Folder 2	Holyoke Water Power Company, test data 47 1/2" sparks turbine, 1916
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Box 13, Folder 5	Indiana & Michigan Electric Company, Elkhart test, 1913
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Box 14, Folder 19	Test No. 3085, 1927
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Box 14, Folder 24	Test No. 3091, 1927

Box 14, Folder 25	High Speed Test, 1924
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Box 15, Folder 9	Miscellaneous test data, undated
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Box 15, Folder 10	Leffel's American Double Turbine Water Wheel, 1868
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Box 16, Folder 12	James Leffel & Co. Turbine Water Wheel, 1897
Box 16, Folder 13	Leffel Horizontal Steam Engines and Boilers Price list, undated
Box 17, Folder 14	James Leffel Water Wheels, Standards, Specials and Samsons, 1900
Box 17, Folder 1	James Leffel & Co. Turbine Water Wheel, 1900
Box 17, Folder 2	Leffel Engines and Boilers, Pamphlet H, 1900
Box 17, Folder 3	Leffel Turbine Water Wheels, standard and special pamphlet SS'19, undated
Box 17, Folder 4	Leffel Engines and Boilers, Catalogue O, 1906



Box 17, Folder 5	Leffel Hydraulic Turbines, 1946
Box 17, Folder 6	Leffel, Samson, and Niagara Turbine Water Wheels, Pamphlet V, 1908
Box 17, Folder 7	James Leffel & Co. Patterns for Mill Gearing, 1908
Box 17, Folder 8	Leffel Engines and Boilers, Catalogue T, 1909
Box 17, Folder 9	Leffel Standard and Special Turbine Water Wheels, 1911
Box 17, Folder 10	Dodge Sales and Engineering Co., 1915
Box 17, Folder 11	Leffel Turbine Water Wheel, 1916
Box 17, Folder 12	Hydro-Electric Power from a Hoppes Hydro-Electric Unit, undated
Box 17, Folder 13	Leffel Turbine Water Wheels, Bulletin 62, 1924
Box 17, Folder 14	<a href="#">Leffel Engines and Boilers, Catalog 68, 1924</a>
Box 17, Folder 15	Leffel Water Wheels, 1929
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## Series 5: Catalog Artwork, 1919-1959

**Scope and Contents:** This series consists of air brushed black-and-white photographs, mounted on mat board with annotations about dimensions, where to add color and text and other production notes. Some of the photographs are described and numbered, noting a negative number and depict Leffel and Trump Manufacturing Company products. In some instances, the original photographer's name is noted. However, most are unidentified. James Leffel and Company contracted with outside firms and individuals such as Rockford Illustrating Company, A.W. Dubes and Company, Springfield, Ohio; Evans and Dubes, Springfield, Ohio; Kight Advertising Company, Columbus, Ohio; Bucher Engraving Company, Columbus, Ohio; Pixley-Messick Company Commercial Photographers Artists and Engravers, Springfield, Ohio; J. Manz and Company Department of Photography, Chicago, Illinois; Schultz-Gosiger Company, Cincinnati, Ohio; and Rogers and Company, Chicago.

These images were presumably used for assembling the company catalog, product literature, and other promotional materials. Air brushing allowed artists to create highly rendered images with a high level of realism. The materials are arranged alphabetically by topic.

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Box 32, Folder 4	Pumping plants, turbines, water wheels, 1900s
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Box 33, Folder 7	National Electric Light Association, 1932
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Box 33, Folder 10	Leffel's Construction of Mill Dams and Bookwalter's Millwright and Mechanic, 1881
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## Series 9: Glass Plate Negatives, 1890s-1950s, undated

Scope and Contents: Negatives including glass plates and nitrate--486 pieces--divided into Trump Co. photos and Leffel photos. Each is in numerical groupings. Also includes some film negatives. Some of the negatives are broken or missing part of the plate.

Box 35	Turbine, undated
Box 35	Trump Turbine, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
Box 35	Turbines, complete unit, undated
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Box 35	Unidentified factory building, undated
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Box 35	[Unidentified man with turbine blade?], undated
Box 35	Weir Dam, undated
Box 35	Weir Dam, undated
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Box 35	Turbine, no case, undated
Box 35	Leffel steam engine, undated
Box 35	Runners, undated
Box 35	Runners, undated
Box 35	Power Transmission, undated

Box 35	Power Transmission, undated
Box 35	Power Transmission, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Turbines, complete units, undated
Box 35	Unidentified film negatives depicting equipment, undated
Box 36	#262, James Leffel & Company, shop view, undated
Box 36	#301, Turbines on a railroad car outside the James Leffel & Company building, undated
Box 36	#302, Unidentified, undated
Box 36	#310, Double Discharge Turbine, new 15 inch, undated
Box 36	#312, Horse drawn wagon, undated
Box 36	#322, James Leffel & Company, shop view, undated
Box 36	#324, Columbia Water Wheel, undated
Box 36	#332, Unidentified, undated
Box 36	#335, Cascade Water Wheel, 50 inch and 100 H.P., undated

Box 36	#337, Cascade Water Wheel, 50 inch and 100 H.P., undated
Box 36	#346, [Columbus Electric Railway Water Power Plant, Section Four?], undated
Box 36	#349, Columbus, Georgia Electric Light and Railway, 68 inch Samson Turbine, undated
Box 36	#368, Columbus Electric Railway Water Power Plant, Section Four, undated
Box 36	#368-A, Columbus Electric Railway Water Power Plant, Section Four, undated
Box 36	#372, Unidentified, undated
Box 36	#388, Clutch Pulleys, Style 30, single horizontal turbine, undated
Box 36	#390, Electric Power 140 foot head generator connected direct, high grade turbines, undated
Box 36	#394, Triple Cascade connected direct to two electric exciters, undated
Box 36	#397, Cascade Water Wheel, undated
Box 36	#398, Cascade Water Wheel, undated
Box 36	#405, Twin Samson turbines, undated
Box 36	#412, Leffel Double Discharge, Water Wheel plant, friction pulley connections, undated
Box 36	#413, James Leffel & Company, shop view, undated
Box 36	#414, James Leffel & Company, shop view, undated
Box 36	#415, James Leffel & Company, shop view, undated
Box 36	#416, James Leffel & Company, shop view, undated
Box 37	#417, James Leffel & Company, shop view, undated
Box 37	#424, Turbine, A6 1/2 x 10, undated
Box 37	#427, James Leffel and Company, shop view, undated
Box 37	#428, Cascade Water Wheel, undated
Box 37	#435, Exterior view of a building, location unidentified, undated

Box 37	#442, Columbus, Georgia Electric Railway Electric Power and Lighting Plant, Section Seven and Eight Transmission Machinery, undated
Box 37	#447, Unidentified, undated
Box 37	#455, Cascade Water Wheel, Dynamo Connection, undated
Box 37	#465, Unidentified, undated
Box 37	#467, George I. Squire Manufacturing Company, Buffalo, New York, 1892
Box 37	#473, Unidentified, undated
Box 37	#479, Cascade Water Wheel, undated
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Box 37	#513, Leffel Niagara Turbine, Montana Power Company, 21 Mile Transmission, 7000 H.P. Plant, undated
Box 37	#514, Cascade Water Wheel, undated
Box 37	#522, James Leffel & Company, shop view, undated
Box 37	#523, James Leffel & Company, shop view, undated
Box 37	#528, James Leffel & Company, shop view, undated
Box 37	#529, Five Nozzle 30 x Cascade for Wood Mounting, undated
Box 37	#531, James Leffel & Company, shop view, undated
Box 37	#541, [Unidentified Turbine?], undated
Box 37	#544, [Unidentified Turbine?], undated
Box 37	#548, Horizontal Samson Turbine, undated
Box 37	#579, James Leffel & Company, shop view, undated
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Box 38	#1035, Unidentified, undated
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