Clemson University Libraries Special Collections

Bernard A. Behrend Collection Mss.0240

Table of Contents

Summary Information

Repository
Clemson University Libraries Special Collections

Creator -
Behrend, B.A., (Bernhard Arthur), 1875-

Title
Bernard A. Behrend Collection

ID
Mss.0240

Date [bulk]
Bulk, 1890-1932

Date [inclusive]
1830-1982

Extent
28.29 cubic feet (52 boxes, oversize folders, 10 boxes and 1 oversize folder of photographs, and 25 artifacts)

Language
English

Abstract
This collection consists of the personal papers of Bernard Arthur Behrend. They document his long career as an electrical engineer, inventor, scholar, and author, and include material relating to his book, *The Induction Motor*. In addition, the collection includes material on subjects in which he had an interest as a scholar and hobbyist. There is correspondence with Margaret Chase Behrend, Behrend's widow and the donor of the Collection, the author Julia Peterkin, and with Clemson College officials. The Bernard A. Behrend Collection reflects the world of science and electrical engineering from the period of the late nineteenth century to the early twentieth century.

Return to Table of Contents »

Biographical Note

Bernard Arthur Behrend was born on May 25, 1875, in Villeneuve, Switzerland, the youngest of seven surviving children, to Moritz and Rebecca (Wolf) Behrend. His family had been long associated with the paper manufacturing business; his father was involved in the early development of the sulphite process in papermaking and founded the Hammermill Paper Company in Germany and, at a later date, in Erie, Pennsylvania. Because of his precocity, Behrend's education was for the most part self-directed and informal. After his first early training under an English tutor, Behrend attended educational institutions in Germany, France, and England, studying at will under chosen leaders of scientific thought, including Hermann von Helmholtz, Augusta Kundt, Alois Riedler, Adolf Slaby, and Gisbert Kapp. Also, during his time in England, Behrend became an earnest student of English literature and of the writings of Thomas Henry Huxley, Charles Darwin, and John Stuart Mill. He studied civil engineering and mechanical engineering at the Polytechnic Institute in Charlottenburg, Germany, and the University of Berlin, from which he graduated in 1894 with a C.E. degree. In the following year, Behrend worked in England as an engineering assistant to Gisbert Kapp designing power plants.

Behrend joined the Oerlikon Company, Switzerland, in January 1896 as the assistant to the chief engineer in charge of the Experimental and Testing Departments. While there he worked on the development and design of alternating-current and direct-current electrical machinery and the design of the Jungfrau Railway. During this period, Behrend developed the circle diagram for calculating the performance of induction motors in a simple and direct manner. In the summer of 1898, he immigrated to the United States, immediately applied for citizenship, and was granted naturalization in 1903. While getting settled in his new country, Behrend did some consulting work and gave a series of lectures on the theory and design of induction motors at the University of Wisconsin in Madison, at the invitation of Dugeld Caleb Jackson in 1899. He was also a non-resident lecturer at Leland Stanford, Jr. University, San Francisco, California; McGill University, Montreal, Quebec, Canada; and the Massachusetts Institute of Technology in Cambridge. In addition, Behrend organized the first engineering training classes in Cincinnati, Ohio, under A. G. Wessling in 1901.

Behrend became associated with the Bullock Electric Manufacturing Company of Cincinnati in January 1900, and was shortly thereafter appointed its chief engineer. Under Behrend's guidance the company successfully produced its first alternating-current machinery, including alternating-

current generators and induction motors. He built Bullock's first turbo-alternator, which won a grand prize at the Louisiana Purchase Exposition in 1904 and brought Behrend a gold medal. In addition, the largest power unit of the exposition, he also designed the largest power unit of the Exposition, a 96-pole, 3500 K.W. alternator known as "Old Reliable" because it continued to work while others malfunctioned.

At the beginning of 1904, the Bullock Company was acquired by the Allis-Chalmers Manufacturing Company. Behrend became the chief engineer of the combined electrical departments. A few years later Behrend and his staff were transferred to the main plant at West Allis, near Milwaukee, Wisconsin. He retained his position as chief electrical engineer, but he was also made a consulting engineer to the Allis-Chalmers Bullock, Limited, of Montreal, Quebec, Canada. Behrend directed the designing and construction of many large alternating-current generators, which were driven by hydraulic turbines, steam turbines, or gas engines. Also, in collaboration with Ralph D. Mershon, Behrend brought about the first successful paralleling of several large power stations connected through transmission systems and synchronous frequency changers between Lachine Rapids and Shawinigan Falls.

In 1908 the Westinghouse Electric and Manufacturing Company of East Pittsburgh, Pennsylvania invited Behrend to take charge of the power division of their engineering department. During this period, Behrend introduced the plate rotor for turbo-generators. Two years later, due to health problems, Behrend moved to Boston, Massachusetts, opened an office as a consulting engineer and was retained in that capacity by the Westinghouse Company for many years. He designed large gas-engine-driven alternators for the power houses of Indiana Steel Company, Illinois Steel Company, United States Steel Corporation, and American Steel & Wire Company; the electric generating units for several electric power companies, notably a group of units for Niagara Falls, and the steam-turbine units of the Brooklyn Edison Company and the Brooklyn Rapid Transit Company. Behrend gave up his Boston office in 1926 and moved his consulting business to his new self-designed home and laboratory at Wellesley Hills, Massachusetts.

Behrend published a book based on his 1899 lectures at the University of Wisconsin in 1901. *The Induction Motor: A Short Treatise on Its Theory and Design* was translated into French (1902), German (1903), and some sections in Japanese. In 1921, he brought out a new edition, considerably enlarged and revised, titled *The Induction Motor and other Alternating Current Motors*, which Behrend dedicated to his friends Nikola Tesla, Gisbert Kapp, André Blondel, and C. E. L. (Charles Eugene Lancelot) Brown. In addition, Behrend was the author of numerous monographs and articles, including "The Debt of

Electrical Engineering to C. E. L. Brown" (1901); "Engineering Education" (1907); 'The Career of Oliver Heaviside" (1925); "The Work of Oliver Heaviside" (1928); and "Recent Developments in Precision Bench Tools" (1923).

Behrend was a fellow of the American Institute of Electrical Engineers and served on a number of their committees, such as the Edison Medal Committee and the Electrical Machinery Committee (Chairman). Also, he was a Senior Vice-President of the Institute and was active on the Board of Directors. In addition, Behrend was a Fellow of the American Association for the Advancement of Science; the American Physical Society; the American Academy of Arts and Sciences; and a member of the American Society of Civil Engineers; the American Society of Mechanical Engineers; the Institute of Electrical Engineers (British); the Franklin Institute; and the Society for the Preservation of New England Antiquities. He was also a member of the Engineers Clubs in New York City and Boston, and the Athletic Club in Pittsburgh, Pennsylvania.

Behrend was granted over 80 patents, most of which were assigned to the companies he represented. In 1912 the city of Philadelphia, Pennsylvania awarded him the John Scott Medal, with the recommendation of the Franklin Institute, for meritorious achievements in high-speed machinery. In 1931 the University of Darmstadt in Germany conferred upon Behrend the honorary degree of Doctor of Engineering, "in appreciation of his meritorious development of electrical machinery, particularly of polyphase and single-phase induction motors".

Bernard Behrend married Margaret Plummer Chase (born October 7, 1895) of Brookline, Massachusetts in 1926. He died on March 25, 1932 at his home in Wellesley Hills, Massachusetts. Margaret Behrend married Dr. Dudley Phelps Sanford in 1944, but, later divorced him and reclaimed the Behrend name. Margaret Chase Behrend died on July 21, 1982 in Carmel, California.

Return to Table of Contents »

Scope and Content Note

The Bernard A. Behrend Collection covers the time period from 1830 to 1982, with the bulk of the records dating from 1890 to 1932. Included in this collection are blueprints, conference papers, correspondence, notes, magazine and newspaper articles, manuscript drafts, memorabilia and photographs. The folders are arranged alphabetically by subject and then chronologically within each folder.

The majority of the Behrend Collection consists of the material that he used in his work as an electrical engineer

and inventor. Cost summaries, winding specifications, diagrams, test sheets, notes, some correspondence and memos, as well as reports on different types of generators and motors, such as alternating current generators and variable speed motors, can be found in the Allis Chalmers-Bullock material. In addition, there are two contracts and some correspondence regarding the construction of a heavy-duty engine for the Hammermill Paper Company in Erie, Pennsylvania; and information on the Niagara Falls Hydraulic Power and Manufacturing Company and its generators. There are printed bulletins with pictures and diagrams, which describe equipment connected with electrical motors and generators that were manufactured by Bullock Electric Manufacturing Company, General Electric Company, and Westinghouse Electric and Manufacturing Company. The collection contains numerous handwritten notes and diagrams concerning mechanical and electrical engineering, which were used by Behrend in his laboratory work.

Correspondence related to the Bullock Electric Company and Westinghouse, as well as Allis-Chalmers, pertaining to discussions of various aspects of engineering and work related matters such as arranging meetings, reducing work forces and expenses, and moving Bullock from Cincinnati, Ohio to Milwaukee, Wisconsin, are filed in the collection. There is correspondence related to Bernard Behrend's work as a consulting engineer, which includes companies and organizations such as American Institute of Electrical Engineers, The Hendey Machine Company (Torrington, Connecticut), Massachusetts Institute of Technology, and Maschinenfabrik Oerlikon (Zurich, Switzerland). However, a majority of the correspondence is with Carl Richard Soderberg, a mechanical engineer at Westinghouse. In addition, engineering correspondence with C. E. L. (Charles Eugene Lancelot) Brown of A. G. Brown, Boveri & Cie [Company], Baden (Schweiz), Germany, as well as a couple of letters from John Perry, a professor of engineering at the Royal College of Science in London, can be found in the correspondence with notables.

Behrend wrote numerous articles and conference papers which were printed in English, French, and German publications and covered topics such as electric currents, electric generators and motors, electric machinery, induction curves, steam turbines, turbo generators, theories of the regulation of alternators and long distance transmission lines, and engineering education. In addition, a number of conference papers on experimental and theoretical physics of electricity and electronic motors by Comfort Avery Adams, Ernest F. Alexanderson, Frederick Bedell, Andrè Eugene Blondel, Benjamin Garver Lamme, John Perry, and Carl Richard Soderberg are filed in the collection. Also included are a number of United States patents on different motors and generators such as alternating current motors, dynamo electric generators, electromagnetic motors, and steam motors. The folders are arranged alphabetically by the type of motor and

generator, as well as by the names of the inventors. There is a bound volume of Bernard Behrend's United States patents and inventions.

Material on Behrend's book, *The Induction Motor*, includes notes, diagrams, test sheets, as well as some patents, correspondence, and memos, which relate to the second edition. Also included are printed and typed drafts, and book galleys of the second edition. In addition, there are book reviews about the first and second editions of the book. Besides writing engineering publications, Behrend wrote a few addresses and papers on other topics such as food reform and vegetarianism, science and technics, scientific research, and evolution and struggle between science and technology, as well as tributes to C. E. L. (Charles Eugene Lancelot) Brown, Oliver Heaviside, Thomas Henry Huxley, and Andrew Dickson White. He wrote an autobiographical essay, "Reminiscences", which was never published. All of these items are included in the Papers.

The collection contains articles pertaining to Oliver Heaviside, Thomas Henry Huxley, Lord William Thomson Kelvin, Goldwin Smith, Andrew Dickson Smith, Nikola Tesla, and Walt Whitman. In addition, there is correspondence related to Oliver Heaviside, Goldwin Smith, and Andrew Dickson White. Also included is some correspondence from Henrietta Anne Huxley to Bernard Behrend, as well as drafts of his letters to her. Furthermore, there is a poem by Mrs. Huxley and her obituary from *The Times*. A printed draft and book galleys of *Heaviside's Operational Calculus* by Ernest Julius Berg (1929), as well as course notes which were used for a class at the Massachusetts Institute of Technology, are filed in this collection. There are some books by Goldwin Smith, which include *The European Crisis of 1870, A Trip to England*, and *Cowper*. Andrew Dickson White's lectures, addresses, and papers cover topics such as the Constitution and American education, evolution vs. revolution in politics, reforming the U.S. diplomatic service, and Russia. Finally, there is a little information about Otto von Bismark, Alexander Graham Bell, Charles Darwin, Thomas Ava Edison, Albert Einstein, Ralph Waldo Emerson, Michael Faraday, Abraham Lincoln, John Stuart Mill, Isaac Newton, Will Rogers, Bernard Shaw, Henry David Thoreau, and Booker T. Washington.

Materials relating to Behrend's interests as a scholar and hobbyist can be found within the collection. Behrend kept files on the European War (1914-1918) which include clippings from American newspapers, and a pamphlet of a reprinted letter to the editor of *The Sun* in which Behrend expresses his views about the war. Also included are two booklets on German proclamations posted in occupied Belgium and France, and the reasons why the four nations went to war. His interest in the heavens is documented by articles on the newly discovered planet Pluto and other aspects of astronomy. Moreover, correspondence and

invoices related to purchasing rare books of science and literature are included in the collection. In connection to the rare books, there is material on William Makepeace Thackery whom Behrend highly regarded. Among this material are newspaper articles concerning the sales of letters of Thackery and Charlotte Bronte, as well as two articles in which Thackery states his views on slavery, *Vanity Fair*, and novels in general. Furthermore, there is an article that discusses the greatness and decline of Thackery, and a list of the Thackery Collection which was donated by Mrs. Behrend to Clemson. Behrend also had an interest in architecture; he designed his own residence and laboratory in Wellesley Hills, Massachusetts, the blueprints for which are in the collection. Also included are some drawings of the house and a few articles on early American furniture.

Material related to Margaret Chase Behrend is filed within this collection. There is some correspondence from Julia Mood Peterkin to Mrs. Behrend, as well as a black-and-white print of Julia Peterkin's profile which was signed by the South Carolina author. In the miscellaneous correspondence folders, a number of these letters are to Mrs. Behrend from Rollo Appleyard, a British engineer, physicist, and inventor. Considerable correspondence between Margaret Behrend and Clemson College can be found in the collection. It was the desire of the late Bernard Behrend that his wife donate his collection of rare books and personal laboratory to a small college. The correspondence deals with setting up the Behrend Laboratory at Clemson College, the donation of his rare books, a bookplate contest, and the donation of the Julia Peterkin letters. Some of the Clemson College notables mentioned in the correspondence are S. B. (Samuel Broadus) Earle, Dean of Engineering; Clemson Presidents Robert F. Poole, E. W. Sikes, and Robert C. Edwards; and Gordon Gourlay, Library Director. In addition, there are a few newspaper articles concerning Behrend's laboratory and rare book collection, as well as the bookplate contest. Finally, the collection has a cross-reference index file which was created by the Clemson College librarians when the papers were donated. The index is arranged alphabetically by subject and author.

The Behrend Collection contains an interesting group of black-and-white photographs, most showing electric motors, generators, and related electrical equipment. They include photographs showing electrical machinery and work scenes at Allis-Chalmers, Bullock, Westinghouse, and equipment at companies such as Kern River, Maschinenfabrik Oerlikon, Niagara Falls Power, North Mountain Power, Pratt & Whitney, Waltham Machine Works, and Turner Falls. There are also photographs of individuals, including Bernard Behrend, Otto von Bismarck, Charles Darwin, Henrietta Anne Huxley, Thomas Henry Huxley, Lord William Thomson Kelvin, Lady Frances Kelvin, Goldwin Smith, and Andrew Dickson White. The collection has some glass plate negatives which show the rooms of

Behrend's home in Massachusetts and a generator plant disaster, as well as glass plate slides showing an eclipse of the sun, turbo-generators, and diagram charts. Among the oversize photographs are two of, and autographed by, Nikola Tesla.

Oversize materials include drawings of Thomas Henry Huxley, Charles Darwin, and William Makepeace Thackeray, as well as articles on Albert Einstein and Walt Whitman. In addition, there are articles on astronomy and Niagara Hudson, bookplates from a contest at Clemson College, and German newspapers concerning World War I. There are blueprints of Behrend's residence in Massachusetts, and many blueprints of various electric motors, generators, and related electrical equipment. Included in the artifacts are several medals, pins, nine mental test bars likely used in the investigation of a generator explosion, and engraved portraits of Lord William Thomson Kelvin and Edward Dean Adams.

The Bernard A. Behrend Collection will be of particular interest to researchers of late nineteenth and early twentieth century electrical engineering and science. This collection contains a great deal of information about electrical motors and generators, as well as other areas of electrical engineering and related sciences. In addition, the collection gives a glimpse of the philosophy and the ideas of that time period. Bernard Arthur Behrend was an innovative electrical engineer and inventor whose revolutionary theories and discoveries became guiding principles for succeeding designers. The Behrend Collection reflects the important contributions that Bernard Behrend made to the development of electrical engineering in the United States.

Return to Table of Contents »

Administrative Information

Publication Information

Clemson University Libraries Special Collections 2010 July 23

Provenance

The material in the collection was accessioned as 85-24, 88-150, 89-111, 90-16, 91-6, and 94-17.

Processing Information

The collection was processed by Laurie Varenhorst and student assistant Melissa Paulk in 2001. The register was written by Laurie Varenhorst in 2001.

The conversion of this finding aid to Encoded Archival

Description format was made possible with a grant from the South Carolina State Historical Records Advisory Board in 2009-2010. The finding aid was prepared for encoding by Jen Bingham.

Return to Table of Contents »

Related Materials

Related Material

It should be noted that more information on Julia Mood Peterkin, Oliver Heaviside, and Samuel Broadus Earle can be found in Mss 63, Julia Mood Peterkin Correspondence, 1922-1964; Mss 174, Oliver Heaviside Collection, 1918-1919; and Clemson University Archives Series 16, Samuel Broadus Earle Presidential Records, 1924-1925. Also, there are two positives of Bernard Behrend and two negatives of Margaret Chase Behrend in the Clemson University Archives Series 100-Photographs.

Return to Table of Contents »

Controlled Access Headings

Corporate Name(s)

- Allis-Chalmers Corporation.
- Bullock Electric Manufacturing Company.
- Westinghouse Electric Corporation.

Genre(s)

- Blueprints (reprographic copies)
- Galley proofs
- Memorabilia.
- Patents.
- Photographs

Personal Name(s)

- Appleyard, Rollo, 1867-1943
- Behrend, Margaret Chase, 1895-1982
- Brown, Charles E. L., (Charles Eugen Lancelot), 1863-1924
- Earle, Samuel Broadus, 1878-1978
- Heaviside, Oliver, 1850-1925
- Huxley, Henrietta A., d. 1915
- Huxley, Thomas Henry, 1825-1895
- Peterkin, Julia Mood, 1880-1961
- Smith, Goldwin, 1823-1910

- Soderberg, Carl Richard, 1895-1979
- Thackeray, William Makepeace, 1811-1863
- White, Andrew Dickson, 1832-1918

Subject(s)

- Book collecting.
- Book collectors.
- Electric generators.
- Electric machinery.
- Electric motors, Induction.
- Electric power systems.
- Electrical engineering.

Return to Table of Contents »

Related/Analytical Title

The induction motor and other alternating current motors, their theory and principles of design.

Return to Table of Contents »

Collection Inventory

General Files		
	Box	Folder
Acetylene 1896	1	1
Acoustics 1929-1930	1	2
Adams, Comfort Avery 1903 1908-1909	1	3
Adaption (Biology) 1926	1	4
Aerodynamics 1916	1	5
Aeronautics 1915-1919	1	6
Agronomy 1912-1913	1	7
[Air-Saltpeters] 1909	1	8

Alembent, Jean Le Rond d' 1889	1	9
Alexanderson, Ernest F. 1906-1916	1	10
Allis-Chalmers-Bullock Old Records 1900-1905	1	11-12
Allis-Chalmers-Bullock Old Records no date	1	13
Alternating Current Calculating Device 1902	1	14
Alternating Current Generators 1905	1	15
Aluminum 1927-1929	1	16
America: Economic Conditions 1930	1	17
American Institute of Electrical Engineers 1901-1929	1	18
American Machinist (Three Articles by Behrend) 1923	2	19
American Nautical Almanac 1927-1928	2	20
American Society of Mechanical Engineers 1917	2	21
Ampere, Andrea-Marie 1920-1922	2	22
Anatomy 1890	2	23
Animal Locomotion 1926	2	24
Appleyard, Rollo 1936 1939 1943	2	25

Astronomy 1911-1932 1936	2	26
Athletics 1926	2	27
Atmospheric Currents 1892	2	28
Aviation 1912	2	29
Bacteria 1931	2	30
Balanced Alternating-Current Bridge 1922	2	31
Balancing 1916	2	32
Beams 1924	2	33
Bearings 1912 1931, [no date]	2	34
Bedell, Frederick 1893 1916	2	35

Behrend, Bernard Arthur

Addresses and Papers

	Box	Folder
1896-1928	3	36
no date	3	37
(Bound Book) 1900-1908 1917-1918	3	38
"Evolution and the Struggle Between Science and Theology" (A Lay Sermon) 1899	3	39

Autobiography. *Reminiscences*

	Box	Folder
Draft 1911	3	40
Typed Copy 1911	3	41

	Box	Folder
Biographical Information 1901-1934 1982	3	42
Certificates 1901-1931	3	43
Class Notes 1891	3	44-45
Class Notes 1891	4	46-48
Class Notes 1893	4	49
Deeds 1911-1918	4	50
Great Men of Science and Engineering Calendar 1902	4	51
The Induction Motor		

	Box	Folder
Reviews 1901 1903 1921-1923 1933	4	52
Second Edition Draft, Parts I and-II May 26, 1921	4	53-54
Second Edition Draft, Parts I and II 1921	4	55-56
Second Edition Draft, Part III 1921	5	57
Second Edition Draft, Miscellaneous Parts 1921	5	58
Second Edition Galleys 1921	5	59
Second EditionNotes and Correspondence		

	Box	Folder
1888-1905	5	60
1906-1919	5	61

1921, [no date]	5	62
	Box	**Folder**
Letters to the Editor 1900-1913	5	63
Notes 1892-1925, undated	6	64-71
Notes 1896-1931, undated	7	72-78
Notes 1893-1926, undated	8	79-84
Notes 1900-1907	9	85-87
Notes 1903-1909	10	88-91
Notes 1893-1929, undated	11	92-100
Residence in Massachusetts 1922 1941 1945 1947	12	104
Thackery Collection 1915	12	105
United States Patents and Inventions 1904-1911	12	106
	Box	**Folder**
Bell, Alexander Graham 1915	12	107
Bismark, Otto von 1909 1915	12	108
Bleaching, Electric 1900	12	109
Blondel, Andrea Eugene 1893-1915	12	110-113
Blondel, Andrea Eugene Correspondence 1901	12	114
Boilers, Marine-Blow Down 1913	13	115

Bolshevism 1917 1920	13	116
Bookplates Design Contest 1941	13	117
Boston Cooperative Information Bureau 1913	13	118
Boucherot, Paul 1913, [no date]	13	119
Bowles, Oliver 1936	13	120
Brakes 1906	13	121
British Association for the Advancement of Science 1902-1931	13	122
Brookline, Massachusetts 1919	13	123
Brown, Boveri 1895	13	124
Brown, Charles Eugene Lancelot 1902 1904, [no date]	13	125
Bryce, James 1908	13	126
Buffalo Forge Company Illustrated General Catalogues 1902	13	127
Bullock Electric Manufacturing Company Bulletins 1899-1904	13	128-130
Cables 1896 1904 1928 1931	14	131
Calculating Machines 1931	14	132
Cantor Lectures 1886 1891 1900-1903 1906 1909	14	133

Carrier-Telephony (220-Kv.) 1928	14	134
Carty, John Joseph 1918	14	135
Cathode Rays 1897	14	136
China 1928	14	137
Civil Engineering 1878	14	138
Clemson College [Behrend] Laboratory May 1938-July 1971	14	139-140

Clemson College Library

	Box	Folder
October 1938-January 1948	14	141
August 1950-December 1960	14	142
April 1961-August 1971	15	143
December 1973-November 1975	15	144

	Box	Folder
Clerk, Dugald 1905	15	145
Clifford, William Kingdom, and Lucy Lane 1901 1910	15	146
Collier, John 1914 1920-1921	15	147
Commercial Dynamo Design 1911	15	148
Commutation (Electricity) [circa 1906]	15	149
Compasses,	15	150

Navigational 1919-1920		
Constant-Current Regulating Transformer 1927	15	151
Corliss, George Henry 1918	15	152
Correspondence as Consulting Engineer 1890-1922	15	153-155
Correspondence as Consulting Engineer 1930-1931, [no date]	16	156
Correspondence with Notables 1897-1929	16	157
Correspondence, Miscellaneous 1897-1943, no date	16	158-159

Correspondence, Booksellers

	Box	Folder
1895-1932 1942, [no date]	16	160

Bernard Quaritch

	Box	Folder
1908-1913	16	161
1914-1915	16	162
1916-1928	16	163

G. E. Stechert & Co.

	Box	Folder
1921-1931	17	164
Invoices 1920-1929	17	165
Invoices 1930-1932	17	166

	Box	Folder
Thomas Whittaker 1907-1911	17	167
Correspondence Bullock Electric Company-Westinghouse		
	Box	**Folder**
June 20,1902-October 30, 1907	17	168
November 2,1907-April 12, 1909	17	169
July 1,1909-December 4, 1917	17	170
December 19, 1917 December 14, 1922	18	171
	Box	**Folder**
Cosmic Rays 1928	18	172
"CPS'ers" 1923	18	173
Crankshafts 1922-1923	18	174
Crocodiles 1928	18	175
Crowninshield, F. B. 1855	18	176
The Cue 1919	18	177
Darwin, Charles 1888 1901 1907	18	178
Darwin, Frances 1914	18	179
Darwin, Horace 1928	18	180
Democracy 1917	18	181
Der Nord-Ostsee-Kanal [no date]	18	182

Dielectrics 1930-1931	18	183
Diesel Engines 1904	18	184
Disks, Rotating 1892	18	185
Douglas, John F. H. 1912	18	186
Dynamometers 1917 1921	18	187
Earth: Age 1895	18	188
Edison, Thomas Alva 1929 1931	18	189
Education 1907 1917 1921	18	190
Einstein, Albert 1919-1921 1930-1933	18	191
Elasticity 1869 1891 1894 1924	18	192
Electric Arcs 1895	18	193
Electric Capacitors 1929	18	194
Electric Circuits 1900 1908 1919 1925 1928	18	195
Electric Coils 1905 1918	18	196
Electric Commutators 1908	18	197
Electric Compensators 1902-1905	18	198
Electronic Conductors 1915 1919 1928 1930	18	199
Electric Currents		
	Box	**Folder**
1889 1903	19	200

1904-1906, 1911, 1920, 1927-1928	19	201
Alternating 1894-1929	19	202
Electric Currents [Eddy Currents] 1894-1928	19	203-205

	Box	Folder
Electric Equipment: Standards 1925-1926	19	206
Electric Furnaces for Refining Iron and Steel 1912	19	207

Electric Generators

	Box	Folder
1893-1901	19	208
1902-1910	19	209
1912-1929	19	210
1930-1932	20	211
1900-1903	20	212
1904-May 1905	20	213
June 1905-1908, [no date]	20	214
[Articles by A. Potier and B.A. Behrend (Bound Volume)] 1899 1900 1903	20	215
High Voltage 1928	20	216

	Box	Folder
Electric Heating 1910	20	217
Electric Insulators 1908	20	218

Electric Lamps 1930	20	219
Electric Lights and Lighting 1906-1918	20	220-221

Electric Lines

	Box	Folder
1894-1928	20	222
High Tension Corona 1924 1929	20	223
Circle Diagrams 1900	21	224
Transients 1925	21	225

Electric Machinery

	Box	Folder
1886-1918	21	226
1921-1929	21	227
1930-1932	21	228
Induction 1927	21	229
[Phase Advancers] 1907 1912	21	230
Synchronous 1925-1931	21	231
Windings 1902 1927 1930	21	232

	Box	Folder
Electric Measurements 1908 1927 1929	21	233
Electric Metering 1927	21	234

Electric Motors

	Box	Folder
	21	235

1892-1904		
1905-1907	22	236
1907-1918	22	237
1920-1927	22	238
[Notes] [no date]	22	239
[Papers on Theory of Alternating Current Motors] 1893-1904	22	240
[Single-PhaseCommutator Motors] 1912	22	241
[Single and Polyphase Commutator Motors] 1913-1918, [no date]	22	242
Asynchronous 1895 1903 1920	23	243

Induction

	Box	Folder
[Motors] 1901-1906	23	244
1897-1910	23	245
1911-1921	23	246
1924-1931	23	247
[Coil Insulation] 1907	23	248
[Curves on Standard Induction Motors] 1904	23	249
[Magnetic Leakage] 1906	23	250
[Motor Leakage] 1906	23	251
Single Phase Motors 1904	23	252

Synchronous 1895 1920 1925 1931	23	253
	Box	**Folder**
Electric Networks 1918 1923 1928 1930 1931	24	254
Electric Oscillations [circa 1904 [circa 1922] 1923	24	255
Electric Power Factor 1920	24	256
Electric Railroads		
	Box	**Folder**
1893-1901	24	257
1902-1905	24	258
1908-1909, 1919, 1929	24	259
	Box	**Folder**
Electric Rectifiers 1926	24	260
Electric Stoves 1916	24	261
Electric Trunk-Line Operation 1907	24	262
Electric Wave Filters 1925	24	263
Electric Waves		
	Box	**Folder**
1896, 1915	24	264
Analysis 1929	24	265
Transient 1921 1929	24	266
Electrical Engineering		
	Box	**Folder**

1905-1926	24	267
1928-1930	25	268

[Notes]

	Box	Folder
1900-1902	25	269
1901-1905	25	270

	Box	Folder
[Papers by Gisbert Kapp] 1890 1891 1899 1900 1905	25	271

	Box	Folder
Electrical Transformers 1888-1889 1912 1926-1927	25	272

Electricity

	Box	Folder
1898-1906	25	273
1919-1922	25	274
1924, 1927	26	275

	Box	Folder
Electrophysics 1928	26	276
Electrodynamics 1917	26	277
Electromagnetism 1925 1927	26	278
Electrons 1921 1928	26	279
Electrostriction 1903	26	280
Elektrische Nachrichten-Technik 1928	26	281

Elektrotechnische Zeltschrift		
	Box	Folder
1893, 1899, 1900	26	282
1928, 1931	26	283
	Box	Folder
Emerson, Ralph Waldo 1961	26	284
Engineering		
	Box	Folder
1918	26	285
1919	26	286
1926	26	287
Education 1900-1929, [no date]	27	288
Literature: Bibliography 1928-1929	27	289
Research 1917-1921 1926	27	290
Engineering Societies		
	Box	Folder
1909-1910, 1927	27	291
Engineering Societies [Verein Deutscher Ingenieure, Mitgliederverzeichnis] 1908	27	292-294
	Box	Folder
Engineers 1919 1929	27	295
Ernest Kempton Adams Fund for Physical Research 1904 1911	27	296

European War 1914-1918

	Box	Folder
[National City Bank of New York Article] 1918	28	297
Newspaper Clippings 1908, 1914, November 7, 1918	28	298
Newspaper Clippings November 7, 1918-January 5, 1919	28	299
Newspaper Clippings May 8-August 29, 1919	28	300
Newspaper Clippings September 6, 1919-March 28, 1920 [circa 1927]	28	301
Scraps of Paper: German Proclamations in Belgium and France 1914	28	302
[*The War Record of The Chicago Tribune*] [circa 1918]	28	303
["Viewing the Future" by Behrend] 1915	28	304
[*Why England, Germany, Russia and Belgium Went to War*] 1914	28	305
["Why the President Did It", *The New Republic*] 1918	28	306

	Box	Folder
Ewing, James Alfred: Howard Lectures on Cold 1897	28	307

Faraday, Michael

	Box	Folder
Memorial Library [circa	28	308

1929]		
The Illustrated London News 1931	28	309
The Times Newspaper Tribute 1931	28	310
	Box	**Folder**
Faraday's Kraftlinien [Lines of Force] 1895	28	311
Farmer's Almanac 1919	28	312
Field, Allen Bertram		
	Box	**Folder**
Article in *Electrical Review and Western Electrician* 1912	28	313
Lamme Medal 1929	28	314
	Box	**Folder**
Finance: Great Britain 1931	28	315
Fireproof Cables 1903	28	316
Flags: United States [no date]	29	317
Flammarion, Camille 1925	29	318
Flow of Fluids 1870	29	319
Flow of Water		
	Box	**Folder**
Composition Book [no date]	29	320
Paper by Professor James Thomson 1878	29	321
	Box	**Folder**

Floy, Henry 1908	29	322
Flying Machine 1895	29	323
Flywheels 1915	29	324
Foch, Ferdinand [Print Drawing] [no date]	29	325
Food Supply [no date]	29	326
Fourier, Jean Baptisite Joseph 1830	29	327
Fourth of July in London [no date]	29	328
Fraunhofer, Joseph von 1865	29	329
Friction 1897	29	330
Gas Engines 1905-1906	29	331
General Electric Company		
	Box	**Folder**
[Electric Hoists] 1899	29	332
Extract from 15 th Annual Report 1907	29	333
Publications Numbers 4075-4289, 4300-4319 1896-1903	29	334-337
Small Motors Numbers 1044, 4321-4329 May-June 1903	29	338
Small Motors Numbers 4330-4361, 4368-4402 June-1903-January 1905	30	339-340
	Box	**Folder**

Geology 1927	30	341
Germany: Statistics 1916	30	342
Golf Balls: Dynamics 1910	30	343
"La Goule" 1895	30	344

Graf Zeppelin

	Box	Folder
National Geographic Magazine 1930	30	345
Newspaper Pictures 1929	30	346

Gravitation

	Box	Folder
Composition Book 1917	30	347
Nature Articles 1918 1920	30	348
Publication of the Massachusetts Institute of Technology 1922	30	349

	Box	Folder
Great Britain: Politics and Government 1919	30	350
Greenhill, George 1927-1928	30	351
Grey, Edward 1933	30	352
Guaranty Trust Company of New York 1918	30	353
Guns 1918	30	354
Gyroscopes [no date]	30	355
Hale, George E. [Print] 1933	30	356

Hallucinations and Illusions 1884	30	357
Hammermill Paper Company: Newspaper Ad 1918	30	358
Health of Workers 1921	30	359

Heat

	Box	Folder
Conductivity 1917	30	360
Transmissions 1921	30	361
äquivalent der warne 1856	30	362
Mechanischen Warmetheorie 1882 1885	30	363
Publication of the Massachusetts Institute of Technology 1923	30	364

	Box	Folder
Heaviside, Oliver, articles 1912-1933	31	365-366
Heaviside, Oliver, correspondence 1896, 1900, 1918-1933	31	367-368
Heaviside, Oliver, notes 1928, no date	31	369-370
[Vannevar Bush's Course Notes on Heaviside's Operational Calculus] 1925	31	371

"The Work of Oliver Heaviside" by B. A. Behrend

	Box	Folder
The Electric Journal 1928	31	372
Manuscript [circa 1927]	31	373

	Box	Folder
Heaviside's Operational Calculus by Ernest Julius Berg (Draft), pages 1-214 1929	32	374-375
Heaviside's Operational Calculus by Ernest Julius Berg (Draft) Book Galleys 1929	32	376
Heinrich-Hertz-Institute 1930	32	377
Helmhotz, Hermann von 1894-1897	32	378
Hertz, Heinrich Rudolf 1894	32	379
Holmes, O. W. [Oliver Wendell] 1878	32	380
Hopkinson, John [Print Drawing] [no date]	32	381
Hurricane 1954	32	382
Huxley, Henrietta Anne		

	Box	Folder
1914	32	383
Behrend's Correspondence (Drafts) to Mrs. Huxley 1908	32	384
Correspondence 1908-1912	32	385

	Box	Folder
Huxley, Leonard 1900 1904	32	386
Huxley, Thomas Henry		

	Box	Folder
1860 1896, [no date]	32	387

[Articles about Huxley] 1870-1895	32	388
[Articles about Huxley] 1896-1928, [no date]	33	389
1869-1895	33	390
[Lecture] 1876	33	391
[Notes] [no date]	33	392

	Box	Folder
Hydroelectric Power Developments 1908	33	393
Hydroelectric Power Plants: Electric Equipment 1924	33	394

Induction Curves

	Box	Folder
2 ph 60 cycles 1903-1908	33	395
3 ph 25 cycles 1903-1908	33	396
3 ph 60 cycles to 10 HP 1903-1908	33	397
3 ph 60 cycles from 50 HP and L/P 1903-1908	33	398

	Box	Folder
Institute of Industrial Research 1912	34	399
Institution of Electrical Engineers 1931-1932	34	400
Integraphs 1922 1927 1931	34	401
International Electrical Congress 1901-1905 1921,	34	402

[no date]		
Inventions 1928	34	403
Ireland 1907	34	404
Iron 1894	34	405
Iron and Steel Plants: Electronic Control 1913	34	406
Irrigation Studies 1900	34	407
Jacobsen, Lydik S. 1925	34	408
John Harvard's Tercentenary 1636-1936 1936	34	409
Johnson, J. B. 1898-1899	34	410
Jones, Forrest R. 1912	34	411
Jollyman, J. P. 1911	34	412
Jordan, David Starr 1893	34	413
Joule, James Prescott 1921	34	414
Kapp, Gisbert 1902	34	415
Kapp, Treasy M. (Mrs. Gisbert Kapp) 1910 1922	34	416
Kelvin, William Thomson		
	Box	**Folder**
1902 1908 1924	34	417
[Print Photo and Drawing] [no date]	34	418
	Box	**Folder**
Kennelly, A. E. 1915	34	419

Kessler, J. J., Jr. 1903	34	420
Kimball, Dexter S. 1929	34	421
Kirchoff, Gustav Robert 1888	34	422
Kirchoff's Laws 1888	34	423
Ku, Yu H. 1930	34	424
Labor and Laboring Classes: Medical Care 1920	35	425
Lamme, Benjamin Garver, [Articles] 1905-1918	35	426
Lamme, Benjamin Garver, [Edison Medal Presentation] 1919	35	427
Laplace, Pierre Simon [circa1927]	35	428
Lathes 1924-1926	35	429
League of Nations 1919	35	430
Leather Belt Drives 1912	35	431
Liebig, Justus von 1874 1891	35	432
Life 1927	35	433
Life: Origin 1917, [no date]	35	434
Light 1895	35	435
Light Transmission 1931	35	436
Lightning 1916 1927 1929	35	437
Lightning Protection 1897	35	438

Lincoln, Abraham 1917-1918	35	439
Line Insulators 1912	35	440
Liquids 1899	35	441
Liquids: Cylinders 1902	35	442
Literature and Science 1914	35	443
Load Ratio: Control Equipment 1927	35	444
Lodge, Oliver Joseph [Print Drawing] [no date]	35	445
Lubrication 1897 1902	35	446
Lynching 1918	35	447
Machine Tools 1923	36	448
Machinery Foundations 1920	36	449
Magnetic Fields 1927	36	450
Magnetism 1885 1900 1901 1920	36	451
Masonry Arches 1927	36	452
Mathematics		
	Box	**Folder**
1895, 1910, 1915	36	453
1917-1919	36	454
1919-1923	36	455
1924-1927	36	456
1929 1931	36	457

[*Die Darstellende Geometrie*] 1882	36	458
[*Encyclopédie Des Sciences Mathématiques*](Parts II, Fasc. and II2, Fasc. 1) 1911-1912	36	459
[*Encyclopédie Des Sciences Mathématiques*](Parts II 5, Fasc. 1 and 2) 1912 1914	37	460
[*Encyclopédie Des Sciences Mathématiques*](Parts IV 5, Fasc, 1 and 2) 1912 1914	37	461
[*Encyclopädie Der Mathematischen Wissenschaften*] 1901-1902	37	462
[*Encyclopädie Der Mathematischen Wissenschaften*] 1903-1905	37	463
[*Encyclopädie Der Mathematischen Wissenschaften*] [Notes] 1919 1928 1929	37	464
[*Encyclopädie Der Mathematischen Wissenschaften*]Table 1890	37	465
[*Encyclopädie Der Mathematischen Wissenschaften*] [Thesis] [no date]	37	466
[*Theory of Probabilities and Calculus of Functions*] 1869	38	467
[*Veirstellige Tafeln der Kreis und Hyperbel funktionem, sowie ihrer Umkehrfunktionen im Komplexen*] 1931	38	468

	Box	Folder
McCarthy, Justin [1908]	38	469
McKay, Donald 1933	38	470
Measurements 1930	38	471
Mechanical Engineering 1912 1918	38	472
Mechanics 1900-1928	38	473
Mechanics [Notes] 1902 1917-1918 1931, [no date]	38	474
Medicine [circa 1918]	38	475
Mershon, Ralph D. 1911	38	476
Meteorology 1922 1925	38	477
Micarta Folium Insulation 1924	38	478
Mill, John Stuart 1900	39	479
Modern Dynamo Electric Machinery 1917	39	480
Moon 1917	39	481
Murray, W. S. 1911	39	482
National Electric Light Association 1922	39	483
National Electrical Code Construction Rules 1909	39	484
National Research Council 1918	39	485
New York Electrical Society 1927	39	486

Newton, Isaac 1928, [no date]	39	487
Niagara Falls Generator 1893 1908 1924	39	488
Niagara Falls [Hydraulic Power and Manufacturing Company] 1908-1910	39	489
Niagara Falls Power 1920, [no date]	39	490
Nicolaifche Buchhandlung 1913	39	491
Noise 1931	39	492
Notes for the Guidance of Authors in the Submission of Manuscripts to Publishers 1905	39	493
Nutrition 1899, [no date]	39	494
Nutting, Wallace	39	494A
Ohm [no date]	39	495
Opinions 1890 1901	39	496
Oscillographs 1920	39	497
Paderno d'Adda 1899	39	498
Patents		
	Box	**Folder**
Alexanderson-Latour 1890-1919	40	499
Alternating Current Asynchronous Machine 1888	40	500
	40	501

Alternating Current Electric Motors 1898 1903-1905		
Alternating Current Induction Motors 1900	40	502
Alternating Current Machines 1896 1906	40	503
Alternating Current Motors 1888-1907 1927	40	504
Alternating Current Transformers 1901	40	505
Binding-Bands 1897	40	506
Charles S. Bradley 1888-1900	40	507
Dynamo Electric Generators 1902	40	508
Dynamo Electric Machines 1886-1907 1914-1917 1921-1925	40	509
Electric-Fluid Turbines 1903 1905	40	510
Electric Motors 1888-1905	40	511
Electric Pumping-Engine 1902	40	512
Electric Regenerative Motors 1915	40	513
Electric Transformer 1897	40	514
Electrical Machines 1889-1904 1924	40	515
Electro-Magnetic Motor 1888	40	516
	40	517

Gisbert Kapp and A. B. [Allen Bertram] Field 1918-1919		
Induction Motors 1894-1903 1925	40	518
Lawrence-Wightman 1888-1917	40	519
Magnets 1896 1902-1903	41	520
Michael vonDolivo-Dobrowolsky 1890-1893	41	521
Miscellaneous 1888-1903	41	522
Motor-Winding 1907	41	523
Nikola Tesla 1888-1893	41	524
Non-synchronous Alternating-Current Motors 1898 1900	41	525
Polyphase Alternating-Current Motors 1901	41	526
Steam Motor 1896	41	527
Steam-Turbine Pumps 1902-1903	41	528
Steam-Turbines 1902-1903	41	529
	Box	**Folder**
Perry, John [Articles] 1890-1910	41	530
Perry, John [Letter] 1917	41	531
Peterkin, Julia 1939-1956, [no date] **Scope and Contents note** Correspondence with	41	532

Margaret Chase Behrend

Philadelphia, Pennsylvania Department of Public Works 1913	41	533
Photometry 1894	41	534
Physics 1919 1926-1931	41	535
Physikalische Zeitschrift 1922	41	536
Plane Water-Lines 1863	41	537
Poetry 1912 1917, [no date]	41	538
Polyphase Windings 1927	41	539
Potentiometers 1919	41	540
Power 1905 1917 1919 1930	41	541
Power Generation 1920	41	542
Power Plants 1897 1900	41	543
Power Transmission 1900-1916	42	544
Power Transmission 1921-1929	42	545
Prices 1913	42	546
Pumps, Air 1927	42	547
Pumps, Oil 1929	42	548
Radio 1929	42	549
Radio Broadcasting 1928	42	550
	42	551

Radio Waves: Propagation 1930		
Railroad Electrification 1906	42	552
Railroads [no date]	42	553
Reactances and Transformers 1927	42	554
Record of Circuit Court Case (District of New Jersey): Westinghouse Electric Manufacturing Company vs.Allis-Chalmers Company 1907	42	555
Regular Flat Slabs 1946	42	556
Renan, Ernest [no date]	42	557
Refrigerating Machinery [circa 1917]	42	558
Relativity Theory 1919-1929, [no date]	42	559
Rogers, Will 1929 1931	42	560
Rolfe, W. J. [William James] 1908	42	561
Rolling Mills 1911-1912	43	562
Rosenberg, E. 1903-1906	43	563
Rotors 1925 1927	43	564
Ruskin, John 1894	43	565
Rutherford, Ernest 1932	43	566
Ryan, Harris [Joseph] 1908	43	567
Schlesinger, Philip 1914	43	568

Science 1924 1930-1931	43	569
Searchlights 1894 1912	43	570
Shafts and Shafting: Vibrations 1918 1925	43	571
Shaw, G. Bernard 1920	43	572
Shipwrecks 1912	43	573
Siemens, Werner von 1893 1917, [no date]	43	574
Simmance-AbadyPhotometer [no date]	43	575
Smith, Goldwin		
	Box	**Folder**
Articles about Goldwin Smith [no date]	43	576
Smith, Goldwin, books 1871-1888	43	577
Smith, Goldwin, books 1891, 1894	43	578
Smith, Goldwin, books 1896-1912, [no date]	43	579
Smith, Goldwin, letters 1896 1907	44	580
Smith, Goldwin, notes [no date]	44	581
	Box	**Folder**
Soderberg, Carl Richard 1923-1926	44	582
Societe Internationale Des Electriciens 1902-1905	44	583

Sound Measurements 1921	44	584
South America [no date]	44	585
Southwell, R.V. 1920	44	586
Spectrum Analysis 1927	44	587
St. Louis' World Fair 1904-1905	44	588
Standard Alternator Slot 1901-1905	44	589
Standard Regular Curves to 300 K.W. (Excluding Turbos) 1903-1908	44	590
Standard Regular Curves 300 K.W. to 500 K.W. 1903-1907	44	591
Steam Engines 1905	45	592
Steam Locomotive 1907	45	593
Steam Power Plants 1918	45	594
[Steam Turbine, Westinghouse] [no date]	45	595
Steam Turbines 1900-1906	45	596
Steam Turbines 1910-1912	45	597
Steam Turbines 1913-1918, 1924, 1929	45	598
Steam Turbines [no date]	45	599
Steam, High-pressure 1928	45	600
Steel 1911	45	601
[Stone and Webster Electric	45	602

Railway and Lighting Properties] 1913		
Strength of Materials: ["The Flying to Pieces of a Whirling Ring", *Nature*] 1891	46	603
Stresses 1922-1925	46	604
String Galvanometer 1924	46	605
Stumpf, Carl [no date]	46	606
Surveying 1931	46	607
Synchronous Converter 1927	46	608
Synchronous Machines 1931	46	609
Synchronous Motors 1912 1927	46	610
Tariff: Law 1909 1913	46	611
Taxation 1917	46	612
Telegraph 1929	46	613
Telephone 1894, 1915-1919	46	614
TelephoneApparatus 1919	46	615
Telephone Circuits 1910	46	616
Telephone Engineering 1928-1929	46	617
Telephone Long Distance 1929	46	618
Telephone [Notes] [no date]	46	619
Telephone Research 1921	46	620

Tesla Motor [no date]	46	621
Tesla, Nikola 1917 1929-1930 1956	46	622
Thackeray, William Makepeace 1914-1917, 1925, 1958, 1970, [no date]	46	623
Thackeray, William Makepeace, Prints and Postcards [no date]	46	624
Thermodynamics 1878	46	625
Thermostats 1925	46	626
Thomson, Elihu 1980	47	627
Thomson, J. J. [Sir Joseph John] 1918, [no date]	47	628
Thoreau, Henry David 1962	47	629
Three Phase Locomotive 1909	47	630
Thurston, Robert Henry 1903	47	631
Times of Descent under Gravity 1921	47	632
Tops 1890 1896 1971	47	633
Torchio, Philip 1911	47	634
Transformer Banks 1927	47	635
Transient Phenomena 1926	47	636
Turbines 1891 1918	47	637
Turbo Curves 1903-1908	47	638

Turbo Generators 1897-1931	47	639-641
Turbo Generators [Advertisements] 1904-1905, [no date]	47	642
Tyndall, John 1873 1894	48	643
Uebermeg, Friedrich 1871	48	644
United States Foreign Relations 1920	48	645
United States Investor 1928	48	646
Universities and Colleges 1911 1919-1920	48	647
Vacuum Equipment 1915	48	648
Valves 1920-1921 1924	48	649
Vapor Refrigeration Processes 1919	48	650
Vector Analysis 1928	48	651
Velander, Edy 1919	48	652
Vibrations 1927-1928 1931, [no date]	48	653
Virchow, Rudolph 1894	48	654
Voltmeters 1890	48	655
Wagner, Karl Willy 1911-1913	48	656
Washington, Booker T. 1907	48	657
Water Heaters 1930	48	658
Watt, James 1901 1936	48	659

Weaver, William D. 1918	48	660
Weights and Measures 1926-1928	48	661
Welding 1919	48	662
Westinghouse Catalogues No.-91-B-193 1897	48	663
Westinghouse Catalogues No.193-A-1023, 1026-1079, 1081-1126 1898-1904	49	664-670
Westinghouse Electric and Manufacturing Company 1907 1916 1919	50	671
Westinghouse Electric News 1922-1927	50	672
White, Andrew Dickson, Articles 1874 1881-1885	50	673
White, Andrew Dickson, Articles 1887-1891	50	674
White, Andrew Dickson, Articles 1896-1897; 1903-1904	50	675
White, Andrew Dickson, Articles 1905, 1908, 1933	50	676
White, Andrew Dickson [Behrend's Article Dedicated to White (Draft)] [circa 1906]	50	677
White, Andrew Dickson, Correspondence 1904-1907	50	678
Whitman, Walt 1958-1964, [no date]	50	679
Widmark, Lawrence E. 1922	50	680

Wohler, Friedrich 1884, [no date]	50	681
Wood, B. F. 1911	50	682
World Unity 1928	50	683

Return to Table of Contents »

Information File Index

	Box
A-G	1
H-Z	2

Return to Table of Contents »

Photographic Images

	Box	Folder
Allis Chalmers-Bullock Old Records 1907	1	1-4
American Institute of Electrical Engineers-Atlantic City Convention no date	1	5
Battery Plate Tests no date	1	6
Behrend, Bernard Arthur no date	1	7
Behrend, Bernard Arthur. Notes-Folder VIII no date	1	8
Bismarck, Otto von 1894	1	9
Blondel, Andrè no date	1	10

Brooks, Phillips no date	2	11
Brown, Charles Eugene Lancelot no date	2	12
Brown, Sidney no date	2	13
Bryce, James no date	2	14
Bullock Electric Manufacturing Company circa 1900	2	15-19
Bullock Electric Manufacturing Company circa 1900	3	20-21
Bullock Electric Manufacturing Company Staff 1901-1903	3	22
Clemson College: Behrend Laboratory 1958	3	23
Correspondence as Consulting Engineer 1925 1931, no date	3	24
Correspondence with Notables 1901	3	25
Correspondence: Bullock Electric Company-Westinghouse 1917 1922	3	26
Crookes, William 1907	3	27
Darwin, Charles 1854	3	28
Darwin, George Howard no date	3	29
Electric Condensers no date	3	30
Electric Generators 1891	3	31

Electric Machinery circa 1900	3	32-34
Electric Motors: Induction circa 1900	3	35
Electric Railroads circa 1900	4	36
Electrical Transformers no date	4	37
Field, Allan Bertram 1917 1925 1929	4	38
Gray, Alexander no date	4	39
Grey, Edward no date	4	40
Helmholtz, Hermann von no date	4	41
Hendey Machinery 1922	4	42
Huxley, Henrietta Anne 1876 1886	4	43
Huxley, Thomas Henry 1870 1886 1894	4	44
John Scott Medal 1911	4	45
Kapp, Gisbert no date	4	46
Kapp, Treasy 1927	4	47
Karapetoff, Vladimir 1919	4	48
Kelvin, Lady Frances Anna Blandy circa 1900	4	49
Kelvin, Lord William Thomson 1889 1896 1897 circa 1900	4	50
Kern River Company circa	4	51

1900		
Ku, Yu H. 1928	4	52
Lamme, Benjamin Garver no date	4	53
Leblanc, Maurice no date	4	54
Lockyer, William 1919	4	55
Lytton, Edward Bulwer Lytton, Baron, 1803-1873 no date	4	56
Maschinenfabrik Oerlikon circa 1900	5	57-58
Mill, John Stuart 1907	5	59
Niagara Falls Power 1908	5	60
North Mountain Power Company circa1900	5	61
Paderno d'Addo Machinery circa 1900	5	62
Patitz, Max 1908	5	63
Power Plants circa 1900	5	64
Pratt & Whitney Company and Waltham Machine Works circa 1900	5	65-67
Resemann, Leon no date	6	68
Siemens-Schuckertwerke(album) circa 1900	6	69
Smith, Goldwin no date	6	70
Sine-bar Fixture No.26-248 1922	6	71

Sine-bar Fixture No.255-426 1922	6	72
Spencer, Herbert no date	6	73
Thomson, Elihu no date	6	74
Turbo Generators circa 1900	6	75
Turner Falls, Massachusetts circa 1900	6	76
Tyndall, John no date	6	77
Unidentified Photographs 1902, no date	6	78
Weaver, William Dixon no date	6	79
White, Andrew Dickson no date	6	80
Whitman, Walt no date	6	81A

Glass Plates

Behrend's Home in Massachusetts

	Box	Folder
Front View of House	7	82
Back View of House	7	83
Living Room	7	84
Dining Room	7	85
Stair Hall	7	86
Master Bedroom	7	87
Unidentified Room	7	88

	Box	Folder
Generator Plant Disaster, Location Unknown no date	7	89-93
Generator Plant Disaster, Location Unknown not date	8	94-96
Bernard Behrend	8	97-100

Glass Slides

Group 1

	Box
Four Slides of Different Views of Turbo-Generators no date	9
One Slide of an Eclipse of the Sun no date	9

Group 2

	Box
Three Slides of Different Views of an Generator Plant Disaster no date	9
One Slide of a Chart Which Shows Curves of Stresses in a Rotating Disc no date	9
One Slide of a Chart Which Shows Curves of Distortion of a Rotating Disc no date	9
One Slide Which Shows an Equation of Tangential and Radial Stresses of Revolving Disk no date	9

Group 3

	Box
Two Slides Showing Curves of Stresses in a Rotating Disc no date	9
One Slide of a Rotor for the 500 K.W.Turbo-Generator, Allis-Chalmers Company 1907	9
One Slide of a 1000 K.W.Turbo-	9

Generator, Allis-Chalmers Company 1907	
One Slide of a Complete Rotor of a 3250 K.W., 1800 R.P.M. Turbo-Generator, Allis-Chalmers Company 1907	9
Two Slides of Two Parts of a Rotor of a Turbo-Generator, Allis-Chalmers Company 1907	9
One Slide of a Blueprint of an Turbo-Generator, 6000 K.W., 6600 Volts, 750 R.P.M., 3 Phase, 25 Cycles, Bullock Electric Manufacturing Company no date	9

Negative

	Box	Folder
Tesla, Nikola December 18, 1899 **Scope and Contents note** Negative of the 13 ½" x 16½" photograph of Tesla seated in his laboratory, Colorado Springs, Colorado.	6	81B

Oversize Photographs

	Oversize_folder
Tesla, Nikola May 25, 1917 13.5 inches x 16.5 inches **Scope and Contents note** Matted, glossy, black-and-white photograph of Tesla seated in his Colorado Springs, Colorado laboratory with electrical discharge in the foreground. Inscribed to Behrend by Tesla. Image is a double exposure. Accession 88-150.	4
Allis-Chalmers Company District Office and Department Managers Meeting, West Allis January 6, 1908 13.5 inches x 16.75 inches Original, black-and-white photograph	4
American Institute of Electrical Engineers-Atlantic City Convention no date Black-and-white photograph 8 inches x 46 inches	4

	Box	Folder
Allis Chalmers Company, District Office and Department Managers Meeting, West Allis January 6, 1908 11" x 14" Copy with Two Negatives	10	1A
Darwin, George Howard 1922	10	1B
Bullock Electric Manufacturing Company circa 1900	10	2
Electric Machinery circa 1900	10	3-4
Faraday, Michael (1791-1867), "The Father of Electricity" no date	10	5A
Huxley, Henrietta Anne 1905	10	5B
Kapp, Treasy no date	10	6A
Kelvin, William Thomson, Baron (Lord Kelvin) no date	10	6B
Lamme, Benjamin Garver no date	10	7
Lincoln, Abraham 1917	10	8
Mutual Electric Company, San Francisco, California circa 1900	10	9
Oakland, California circa 1900	10	10A
Portsmouth, England. 212 KWT. Ferranti Iron Type Alternator circa 1900	10	10B

Tesla, Nikola 1920	10	11

Return to Table of Contents »

Oversize Materials

	Oversize_box	Folder
One 12.75" x 9" charcoal drawing of William Makepeace Thackeray signed by Samuel Lawrence 1882 Accession No. 90-16	1	1
One 22' x 18" charcoal drawing of William Makepeace Thackeray signed by Samuel Lawrence no date Accession No. 94-17	1	1
First National Bank: Cancelled Checks 1903-1905	1	2
Art: [J. M. Heinrich Hofmann] 1912	1	3
Astronomy. Articles from 1929-1932	1	4
From "Behrend, Bernard Arthur. Addresses and Papers" folder: "The Debt of Electrical Engineering to C. E. L. Brown", reprinted from Electrical World and Engineer November 16, 1901-March 1, 1902	1	5
From "Behrend, Bernard Arthur. The Induction Motor. Second Edition. Notes and Correspondence" folders: One blueprint circle diagram of Type-AN8-20-3¾, 440 Volts, 900 R.P.M. Synchronous Speed, The	1	5

Bullock Electric Manufacturing Company, Cincinnati, Ohio May 13, 1904		
One blue diagram of test curves of a type of a commutator machine 1904	1	5
Dimensions of Induction Motors, Forms K and L, 60 Cyclescles (No. 14152), Engineering Department, General Electric Company, Changed 27 July 1905	1	5
One blueprint (No. 24242) on information about Bearing Pressures Type AN Motor, The Bullock Electric Manufacturing Company, Cincinnati, Ohio June 15, 1906	1	5
From "Behrend, Bernard Arthur. Notes, folder I": One white 12" x 16' diagram which is printed in black with blue and red ink marks. The top of the diagram has the following words: "Graphischë Stalik / Bestimmung cines Frägheitsmoments /nach / C. Cullmann"	1	5
From "Behrend, Bernard Arthur. Notes, folder V": One blueprint (No. 658-D) of the Magnetic Leakage Testing Apparatus, The Bullock Electric Manufacturing Company, Cincinnati, Ohio, E. C. W. January 28, 1901	1	5
From "Behrend, Bernard Arthur. Notes, folder VII": Two 9" x 24 ½" cream-colored, green-graphed diagrams no date	1	5
One 14" x 19.5 plan of Wicklungsschema zuden	1	5

Gleichstrom Dynamos 96.96 V-VIII. Purple oval stamp in the upper left-hand corner which states: Maschinenfabrik Oerlikon / 37 JUL 97 / OERLIKON by ZÜRICH. On the lower left-hand side: No. 21084T		
One 13.25" x 25.25" plan of Strassenbahn-Motor / der Maschinenfabrik Oerlikon / für 1m Spurweite. / Spannung 450 bis 500 Volt. Stromstärke bis 25 Ampere. / Eimmalige Uebersetzung 1: 4, 9 (printed at the center of the top). At the top of the left-hand side: Elektromechanische Konstruktionen / zusammengestellt / Von / Gisbert Kapp. / Nackdruck verboten. At the top of the right-hand side: Tafel VI. At the bottom of the right-hand side: Photolithographie von C. L. Keller in Berlin	1	5
From "Behrend, Bernard Arthur. Residence in Massachusetts" folder: Six blueprints of his house and laboratory in Wellesley Hills, Massachusetts 1925	1	5
From "Darwin, Charles" folder: One 14.625" x 9.625" print drawing of a young Charles Darwin sitting in a chair which was done by M. & N. Hanhart Lith Printers and it is signed "C. H. Maguire / 1849"	1	5
One 14.625" x 9" print drawing of Charles Darwin with a long beard [no date]	1	5
From "Einstein, Albert" Folder: Three articles from The Illustrated London News which are dated June 28, 1930 July 4, 1931 and	1	5

August 5, 1933		
From "Electric Motors: [Induction] Motors" folder: One blueprint (No. 2583.D.1) of the 50 HP Induction Motor, Westinghouse, 400 Volts, 67 AMP, 850 R.P.M., 3 Phase, 60 Cycles, Bullock Electric Manufacturing Company, Cincinnati, Ohio 1903	1	5
From "Electric Motors: Induction-Single Phase Motors" folder: One blueprint (No. 3521-D) of a winding diagram of the 4 Pole-Single Phase-Compensated Motor, Bullock Electric Manufacturing Company, Cincinnati, Ohio 1904	1	5
Hammermill Paper Company. The Paper Mill and Wood Pulp News August 31, 1918	1	5
Huxley, Thomas Henry. One 13.625" x 10.75" print drawing of Thomas Henry Huxley with his left arm leaning on three books on a table and holding a human skull [no date]	1	5
"Niagara Hudson", Fortune, Volume III, No. 6, pages 41-49, 106, 108, 112, 114, 116, 118 June 1931	1	6
Shafts and Shafting: Vibrations. One 14" x 10.5" blue book entitled Engineering: An Illustrated Weekly Journal 1918	1	6
Speed Reducers. Two Articles on Reduction Gears. A Reprint from "Engineering", London 1916	1	6
From "Tariff: Law" folder:	1	6

The Tariff Law of 1913. C. S. Hammond & Co. Printers and Publishers, New York		
From "Turbo Generators" folders		
	Oversize_box	**Folder**
Log of Test No. 1 of 500 K.W. Allis-Chalmers Company Steam Turbine-Alternator Built for Western United Gas & Electric Company, Aurora, Illinois. Average Load 570.8 K.W. December 16, 1906	1	6
Log of Test No. 2 of 500 K.W. Allis-Chalmers Company Steam Turbine-Alternator Built for Western United Gas & Electric Company, Aurora, Illinois. Average Load 385.67 K.W. December 16, 1906	1	6
One stress-sheet (No. 3430.D.1) for Turbo-Generator 5000 K.W., 3 PH., 6600 VOLTS, 25 Cycles, 750 R.P.M. at 4-68-61¾. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. September 16, 1904	1	6
One stress-sheet (No. 3873-D-1) for Turbo-Generator 5000 K.W., 3 PH., 6600 VOLTS, 25 Cycles, 750 R.P.M. at 4-68-61¾. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. December 13, 1905	1	6
One stress-sheet (Nos. 3478-D.1 and 3478-D.2) for Turbo-Generator 5500 K.W., 6600/11000 VOLTS, 3 PH., 4 P., 25 Cycles, 750 R.P.M. at 4-75-51¼. The Bullock Electric Manufacturing Company,	1	6

Cincinnati, Ohio, U.S.A. September 24, 1904		
One stress-sheet (No. 3478-D.1) for Turbo-Generator 5500 K.W., 6600/11000 VOLTS, 3 PH., 4P., 25 Cycles, 750 R.P.M. at 4-75-51¼. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. September 24, 1904 and December 14, 1905	1	6
One blueprint (No. 183897) of Stresses in Rotor AT4 3235¾. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. August 17, 1904	1	6
One blueprint (No. 21321) of Rotor Slot Insulation Type AT4.75.51¼. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. March 24, 1905 and March 25, 1905	1	6
One blueprint (No. 23194) of Rotor Slot Insulation Type AT4 68617¾. This DWG. Supersedes No. 18720. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. August 19, 1905	1	6
One blueprint (No. 24555) of Rotor Slot Insulation Type AT2 34 35½. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. December 4, 1905	1	6
One blueprint (No. 24945) of A. C. Turbo Generator Outline, Type AT2-21 29, 500 K.W., 2300 VOLTS, 3600 R.P.M., 3 Phase, 60 Cycles. The Bullock Electric	1	6

Manufacturing Company, Cincinnati, Ohio, U.S.A. March 2, 1906		
One blueprint (No. 25297) of Rotor Slot Insulation Type AT2 21 29. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. February 16, 1906 and March 1, 1906	1	6
One blueprint (No. 25543) of Rotor Slot Insulation Type QT4 36-33. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. February 23, 1906	1	6
One blueprint (No. 25548) of Rotor Slot Insulation Type AT4 32. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. March 21, 1906	1	6
One blueprint (No. 25700) of A. C. Turbo Generator Outlines. Table of Dimensions. Supersedes DWG #22215. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. March 22, 1905	1	6
One stress-sheet (No. 25730) for AT2-21 29. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. March 13, 1906	1	6
One blueprint (No. 27250) of A. C. Turbo Generator Outlines. Table of Dimensions. Supersedes DWG #25700. The Bullock Electric Manufacturing Company, Cincinnati, Ohio, U.S.A. September 14, 1906 and October 6, 1906	1	6

One blueprint (No. 42345) of Turbo Alternator, Dimensions Size 501-S-4. Crocker Wheeler Company, Ampere, New Jersey December 20, 1904	1	6

	Oversize_box	Folder
From "Whitman, Walt" folder: Four 22.5" x 17.5" copies of The Long-Islander (Newspaper), Huntington, Long Island, New York, which has articles pertaining to Walt Whitman. The dates are Thursday, July 2, 1959 (Section Three-Page 1); Thursday, May 24, 1962 (Section Two-Page 3); Thursday, May 30, 1963 (Section two-Page 8); and Thursday, May 28, 1964 (Section Three-Page 1)	1	6

Bookplates

	Oversize_box	Folder
One 14" x 10" poster of a black-and-white bookplate. The bookplate design is rectangular-shaped with "B. A. BEHREND" at the bottom. The bookplate shows a row of electrical generators with two electrical transmission towers in the background. In the upper left-hand corner is "EX / LIBRIS". Underneath the bookplate design are the following two lines of words: "A BOOKPLATE / JUNIOR DESIGN-WILLMON, E. L.". Hon. Mention is written in blue pencil in the lower right-hand corner 1941	1	6
One 14" x 10" poster of a black-and-white bookplate in the center. The bookplate design is rectangular-	1	6

shaped with "B. A. BEHREND" at the bottom. The bookplate shows three horses running over the top of a waterfall. The horses are attached by string to a water-driven generator, which is in the lower left-hand side of the bookplate. Above the horses are the words: "EX / LIBRIS". Underneath the bookplate design are the words: "BOOKPLATE". On the lower right hand side is the signature of H. McCoy in black ink and Hon. Mention in blue pencil 1941		
One 14" x 10" poster of a black-and-white bookplate in the center. The bookplate design is rectangular-shaped with the scene of a waterfall in the center. Around the edge of the waterfall scene are other little scenes related to electricity. At the top of the bookplate are the words: "EX LIBRIS B. A. BEHREND". Underneath the bookplate design are the following four lines of words: "A BOOKPLATE / for / B. A. BEHREND'S BOOKS / SOPH. DESIGN / H. L. COOPER". On the bottom of the right-hand side of the poster is written $10.00 prize" written in blue pencil 1941	1	7
One 10" x 14" One 14" x 10" poster of a black-and-white bookplate on the left-hand side. The bookplate design is rectangular-shaped with "B. A. BEHREND" at the top. The bookplate shows a row of water-driven electrical generators in front of a window with a view of Niagara Falls. On the lower	1	7

right-hand corner of the bookplate design is "EX / LIBRIS". On the right-hand side of the poster are the following three lines of words: "A PROPOSED BOOKPLATE /SCALE TO BE ½ PRESENT SIZE / SENIOR DESIGN-HASSIE FORRESTER". Hon. Mention is written in blue pencil in the lower right-hand corner 1941		
One 15" x 10.75" poster of a black-and-white bookplate in the center. The bookplate design is rectangular-shaped with "B. A. BEHREND" at the bottom. At the top of the book plate it shows a muscular man preparing to throw a lightning bolt from his right hand while he holds another one in his left hand. Underneath the muscular man it shows a man working an induction motor. Hon. Mention is written in blue pencil in the lower right-hand corner 1941	1	7
One 20" x 15" poster of a black-and-white bookplate in the center. The bookplate design is circle-shaped with a drawing of a line of water-driven generators installed for the Niagara Falls Power Company. Around the edges is the following description: "ex libris / B. A. Behrend". Underneath the bookplate design are the following three lines of words: "BOOKPLATE COMPETITION / DESIGNED BY W. E. HALLMAN / REDUCE TO ONE-FOURTH SIZE". Hon. Mention is written in blue pencil in the lower right-hand corner 1941	1	7

German Newspapers		
	Oversize_box	Folder
Berliner Tageblatt 1914 editions. Have the following dates: July 2, 9, 16, 23; August 4-7, 13, 20, 23, 24, 27; September 3, 10; October 1	1	8
Berliner Lokal-Anzeiger 1914 editions. Have the following dates: August 3 and 21	1	8

	Oversize_folder
From "Behrend, Bernard Arthur. Allis Chalmers-Bullock Old Records" folders: Eighty blueprints on different types of electrical motors and generators, and related areas, 1902-1907. There is a listing of the blueprints	1A-1C
From "Behrend, Bernard Arthur. The Induction Motor. Second Edition. Notes and Correspondence" folder: Seventy-four blueprints on different types of electrical motors and generators, and related areas, 1903-1906. There is a listing of the blueprints	2

From "Correspondence as Consulting Engineer" folders	
	Oversize_folder
One blueprint of Double-acting Duplex Pumps 40 R.P.M. 24" Stroke, Worst Combination of 2-Duplex Pumps (62-116), The Goulds Manufacturing Company, Seneca Falls, New York 1925	3
One blueprint concerning Indicator between Valves in Pump with Small Flywheel (Chart No. 2029), The Goulds Manufacturing Company, Seneca Falls, New York 1925	3
One blueprint of Mounting of Spindel and Backshaft, Precision Lathe 1" Collect, The New Departure Manufacturing Company, Bristol, Connecticut, Drawing No. SE-	3

4687-D. B. A. Behrend, Wellesley Hills, Massachusetts November 6, 1928

Return to Table of Contents »

Artifacts

Nine metal test bars of different sizes, which were removed, from the interior of the defective nickel steel forgings of the new 10,000 horse-powered electric generator which exploded at Plant No. 3 of the Niagara Falls Hydraulic Power and Manufacturing Company on April 28, 1908

4" diameter medal which states on one side "AWARDED BY THE CITY OF PHILADELPHIA" engraved around the rim. In the center two women stand between a shield with a set of scales above it. The other of the medal has these words engraved around the rim: "THE JOHN SCOTT MEDAL / TO THE MOST DESERVING". In the center are these words: "To / BERNARD ARTHUR BEHREND / for his / HIGH SPEED ELECTRIC / GENERATORS on the / recommendation / of the / FRANKLIN INSTITUTE / 1911". The medal is stored in a black case with a purple velvet interior. Inside the lid of the case is the following inscription in gold letters: "MEDAL / AWARDED BY / THE CITY OF PHILADELPHIA. / TRUSTEE UNDER THE / WILL OF / JOHN SCOTT / OF / EDINBURGH, SCOTLAND"

2 ½" diameter medal which shows on one side three women sitting on the steps of a temple with the center woman holding a steam boat in her lap. Above the center woman is a portrait of a man with these words beneath him: "Robert Fulton / 1765-1815". Underneath the three women are these words: FIRST USE OF STEAM IN NAVIGATION / ON THE HUDSON RIVER / 1807". The other side of the medal shows six men working on a boat. Engrave around the rim of the medal are these words: "DSICOVERY OF HUDSON RIVER BY HENRY HUDSON / A.D. MDCIX / HUDSON-FULTON CELEBRATION COMM". The medal is stored in a black case with a green velvet interior. On the outside of the box there are some words in gold: "Hudson Fulton Banquet / September 29, 1909

2 ¾" tall medal in the shape of a shield with a wingspread eagle sitting on a rectangular box on one side of the medal. In the rectangular box are these words: "GOLD MEDAL / LOVISIANA PVCHASE / EXPOSITION". On the other side of the medal there are two women standing with these words circling them: "VNIVERSAL EXPOSITION —?— VNITED STATES OF AMERICA / MCMIV". The medal is encased in a "4 7/8" x 4 ¾" dark wood frame with a dark burgundy velvet

interior

1 ¾" diameter medal showing a muscular man bent down on his knees with his right arm stretched out and his left one slightly behind him. Beneath the man are these words: "DASS SICHDAS GROSSES WERK VOLLENDE GENÜGTEIN GEIST FÜR TAUSEND HÄNDE". This sentence roughly translates into "That (yourself, itself, oneself) the greatness work completed enough a (spirit, mind, intellect) for thousand hands". The other side of the medal shows a Roman/Greek style temple in the center. Engraved around the rim of the medal are these words: "BERLINER BEZIRKSV DEUTSCH INGENIEURE / JUNI 1913". This sentence translates into "Berlin District German Engineering / June 1913"

3 ¾" tall metal award of a team turbine blading which has engraved on the bottom front: "ALLIS-CHALMERS CO. / MILWAUKEE, WISCONSIN. U.S.A. / STEAM TURBINE BLADING". Engraved on the bottom backside is: "PATENT / APRIL 1, 1902-DECEMBER 9, 1903 /FEBRUARY 14-MARCH 14-AUGUST 15, 1905 / OTHER PATENTS PENDING"

5 1/12" x 3 5/8" metal engraved portrait of Lord William Thomson Kelvin

3 3/8" x 3 5/12" metal engraved profile of Edward Dean Adams. The words engraved on the left side of the profile are: "IN UNWANDELBARER TREVE / R. MARSCHALL WIEN 1922". The words engraved on the right side of the profile are: "EDWARD DEAN ADAMS GEB· 1846 / MEINEM LIEBEN FREUNDE DEM VOR-/ BILDLICHEN FORDERER DER MEDIALLEVR-/ KUNST". On the back of the engraved profile is a short engraved letter of December 10, 1923 to Mr. Behrend from Edward D. Adams

5/8" diameter white-and-gold colored pin (14 karat gold) which says "HAMMERMILL PAPER COMPANY / 20 YEARS". On the back is engraved: "B. A. Behrend / 1898 August 21-1918"

5/8" diameter light-blue-and-silver colored pin (18 karat gold) which says "HAMMERMILL PAPER COMPANY / 30 YEARS". On the back is engraved: "B. A. Behrend / 1898 August 21-1928"

5/8" purple-and-gold colored, slightly curved square pin which has the gold letters "AIEE" in the center. These letters stand for American Institute of Electrical Engineers. On the back are these engraved words: "548 / Bernard / Arthur / Bernard"

5/8" gold colored, slightly curved square pin which has the purple letters "AIEE" in the center. These letters stand for American Institute of Electrical Engineers. On the back are these engraved words: "2796 / B. A. Bernard"

6/8" purple-and-gold colored shield-shaped pin which has these words in gold: "AMERICAN /SOCIETY OF / CIVIL / ENGINEERS / FOUNDED / 1852". On the back are these engraved words: "Bernard / Arthur / Bernard / 3476"

6/8" purple-and-gold colored glover-shaped pin which has these letters in gold: "ASME". These letters stand for American Society of Mechanical Engineers

4 ½" x 4 ½" navy blue and gold-colored Hammett's Planisphere Showing the Principal Stars Visible for Every Hour in the Year from Lat. 40° N[orth]. From J. L. Hammett Company, Educational Supplies. Cambridge, Mass., Boston, Mass., Newark, N.J. Printed in Great Britain

3 1/8" diameter surveying aneroid, jeweled and compensated S 2195/2219. Cooke, Troughton & Simms Ltd. London and New York. No. 2879

7 ¼" diameter plaster plaque which shows the profile of a man with a mustache. There are three words on the left hand side of the plaque: "BASHRA BAEFF FECIT". The plaque is broken

Return to Table of Contents »