

WILLIAM J. HAMMER

Consulting Electrical Engineer

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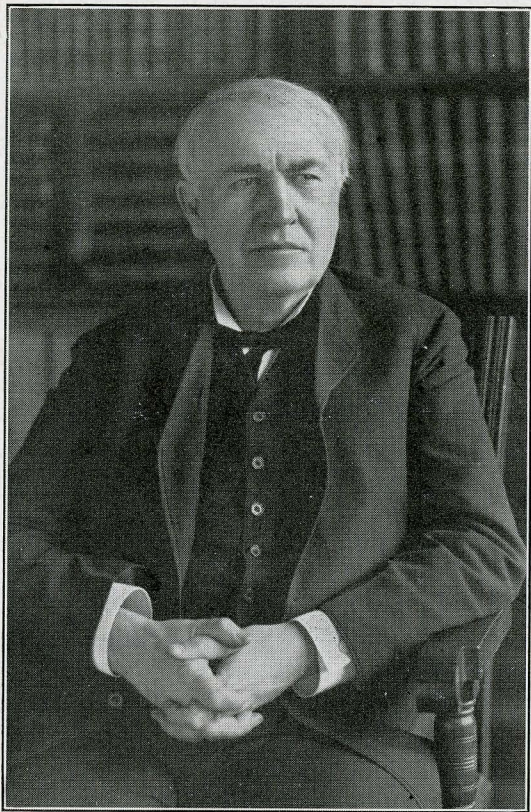
Technical Reports and Advice, Laboratory
Investigations, Tests, Inspection, Supervision

Expert Testimony in Patent Cases, Accident
Cases, Rate Cases

Reports on Patents and Inventions

Foreign Connections (six years' residence in
European Countries)

COURTESY OF THE
National Encyclopedia of American Biography
AND THE
Electrical Review and Western Electrician



To W.J. Hammer a Pioneer of Incandescent Electric Lighting
One of my most valuable
associates of Merril Park —
Mrs A. Edman Jan. 29: 1914.

WILLIAM JOSEPH HAMMER, Consulting Electrical Engineer, was born at Cressona, Schuylkill County, Penna., Feb. 26, 1858, son of William Alexander and Martha A. (Beck) Hammer. His early education was received in private and public schools at Newark, N. J., and was supplemented by lectures and study here and abroad. He became an assistant to Edward Weston of the Weston Malleable Nickel Co., Newark, N. J., in 1878, and in December of the following year entered the employ of Thomas A. Edison in his laboratory at Menlo Park, N. J. In common with Mr. Edison's other associates he assisted in the experiments on the telephone, phonograph, electric lighting, electric railway, ore separating and other inventions being developed at the laboratory, devoting his attention, however, particularly to the incandescent electric lamp.

Under the direction and supervision of Mr. Edison and his mathematician and partner in the incandescent lamp, Mr. Francis R. Upton, he prepared the original plan and determinations of the underground conductor system of the Pearl street station of the New York Edison Co. He had charge of the experimental tests and records of the Edison lamps and subsequently became chief electrician of the first incandescent electric lamp factory in Menlo Park, N. J. In 1881 he was sent abroad by Mr. Edison and became chief engineer of the English Edison Electric Light Co., and associated with Mr. E. H. Johnson, general manager, he constructed the Holborn Viaduct central elec-

tric light station in London. This plant contained three 30-ton "Jumbo" steam dynamos, and operated 3000 incandescent lamps, and on Jan. 12, 1882, Mr. Hammer personally closed the switch which started the operation of this the first central station ever constructed for incandescent electric lighting, the New York Edison station in Pearl street not being started until Sept. 4 of that year. While in London (1882) he also installed a large isolated lighting plant of twelve Edison dynamos at the Crystal Palace Electrical Exposition. At this time he designed and built the first electric sign ever made; it was erected over the organ in the Crystal Palace concert hall, and spelt the name "Edison" in electric lights, being operated by a hand-controlled commutator and a large lever snap switch. The efficiency of his work in England brought him offers of the posts of chief engineer from both the French and German Edison companies, and he accepted that of the latter company, the Deutsche Edison Gesellschaft, now known as the Allgemeine Elektricitaets Gesellschaft. He had entire charge of the organization of the working force, and laid out and supervised all the installations of the company until the fall of 1884, when he returned to America.

While in Berlin, he invented and built the first automatic motor-driven flashing electric sign in the world. This sign, which flashed the name "Edison" letter by letter and as a whole, was placed on the Edison pavilion at the Health Exhibition in Berlin in 1883, and upon its principle

all flashing signs of to-day are based. Returning to the United States, he was put in charge of the Edison exhibits, some eight in number, including Mr. Edison's personal exhibit, at the International Electrical Exposition held under the auspices of the Franklin Institute in Philadelphia in 1884. Mr. Hammer became confidential assistant to Mr. Edward H. Johnson, president of the parent Edison Electric Light Co. in 1884, and later, together with Mr. Johnson and Mr. Frank J. Sprague, they became the incorporators of the Sprague Electric Railway & Motor Co., Mr. Hammer being elected a trustee and the Company's first secretary.

Shortly thereafter he was appointed chief inspector of central stations of the parent Edison Co., making electrical, mechanical and financial reports upon the various stations throughout the United States for over two years (1884-1886), and was next sent to Boston as general manager and chief engineer of the Boston Edison Electric Illuminating Co. In one year's time he changed this plant from a losing investment to one paying twelve per cent. on its capitalization. Acting as a contractor for the company, he installed in Boston the company's elaborate underground system of conductors, and by the installation of ninety-two Sprague electric motors, and assisted by the Sprague Company's agents, made this the first plant for the electric transmission of power worthy of the name established anywhere in the world. Later he took up special expert work for the parent Edison Electric Light Co. in

New York, and, in 1888, he was placed in charge of the completion and starting of the 8,000-light plant of the Ponce de Leon Hotel at St Augustine, Fla., which at that time was the largest isolated incandescent lighting plant ever constructed. Associated with Mr. William Kennish he erected for Mr. Henry M. Flagler the first electric light plant in the world ever run directly by power from an artesian well driving a turbine and dynamo. In 1888 he was appointed consulting electrical engineer to the Cincinnati Centennial Exposition, and as a contractor devised and constructed the elaborate electrical effects as an attraction to the exposition.

He was next appointed Mr. Edison's personal representative at the Paris Exposition of 1889, at which time he had upward of \$100,000 placed at his disposal and a corps of forty-five assistants. The Edison exhibit embraced seventeen departments and covered over nine thousand square feet of floor space. During the exposition he accompanied Mr. and Mrs. Edison to the German Science Congress at Heidelberg, and later to Berlin, where they visited Prof. Von Helmholtz and Dr. Werner Siemens, and at the close of the Paris exposition Mr. Hammer made a notable balloon flight across France with Dr. A. Lawrence Rotch, Director of Blue Hill Observatory and Dr. R. G. Wells of St. Louis. During this trip extensive meteorological, magnetic, electric and signalling experiments were carried out. Returning to the United States in 1890, he opened an office in New York

City as a consulting electrical engineer, which office he has ever since maintained. Much of Mr. Hammer's professional work has been in connection with tests, investigations and reports upon electrical properties and inventions, and acting as an expert in electric lighting, telephone, storage battery, aeronautical and other patent cases, accident cases, rate cases, etc. He has done considerable original work in his laboratory in connection with selenium, radium, X-rays, wireless, cold light, phosphorescence, fluorescence, etc. He has compiled what is without doubt the most important bibliography upon selenium in the world, and is the possessor of a unique collection of autographed portraits of eminent scientists and engineers, and has had a dozen or more patents issued to him here and abroad upon his inventions.

He has visited Europe frequently to make professional reports on patents and processes, to attend electrical and aeronautical congresses and meetings, and to study and report on developments in science and engineering, such as gas engines, steam turbines, high furnace gas applications, sulphur dioxide gas engines, arc lighting and incandescent lighting, radium, automatic telephony, wireless, the Poulson telegraphone, and various high-tension electric railway plants in France, England, Switzerland, Austria-Hungary, Italy and Germany. He has frequently lectured on these investigations before various electrical societies and educational in-

stitutions. Mr. Hammer is a fellow and a life member of the American Institute of Electrical Engineers and a member of the New York Electrical Society, (having been vice-president of both), fellow of the American Association for the Advancement of Science.

He was for two terms chairman of the committee on standard rules for electrical construction and operation of the N. E. L. A., and president of the National Conference on Standard Electrical Rules which organization prepared and promulgated the "National Electric Code" now in use throughout the United States; was for two years president of the Franklin Experimental Club; member of the Franklin Institute, the Agassiz Natural History Society (one of the chapters of which was named in his honor), the Aeronautical Society of America, of which he was an incorporator and vice-president, and has been a director since its inception, the Institute of Radio Engineers, and in addition to the above is or has been a member of the Society of Arts, the American Physical Society, the International Society of Electricians, the American Electrochemical Society, the Association of Edison Illuminating Companies, of which he was at one time a director; the Mineralogical Society, the National Electric Light Association, the Illuminating Engineering Society, the Aero Club of America and the Engineers' Club. He was a member of the "Curie" Radium Award Committee of the Franklin Institute, and represented the

A. I. E. E. at the "Hall of Fame" ceremonies. He was awarded both the John Scott legacy medal and premium in 1902 and the Elliott Cresson gold medal in 1906 by the Franklin Institute, the former for his telephone relay and long-distance sound experiments, and the latter for his historical collection of incandescent electric lamps. This very complete collection, upon which Mr. Hammer has worked over thirty-four years, is practically a "History of an Art," and this is the only Art in which such a record has been made, showing for the first time the complete development of the incandescent electric lamp from its initial stages to date; its historical importance and value were attested by the award of a special silver medal at the International Electrical Exposition at the Crystal Palace, London, England, in 1882, the "Grand Prize" at the St. Louis Exposition of 1904, as well as the Elliott Cresson gold medal of 1906. The collection is now at the Engineering Societies' Building, New York City.

Mr. Hammer was chairman of the jury upon telegraphy, telephony and wireless at the St. Louis Exposition of 1904, and also a member of the "Departmental" jury, and was on the committee appointed to organize the International Electrical Congress at St. Louis in 1904. His book, "Radium and Other Radio-active Substances" (1903), was the first ever published upon that subject, and has gone through many editions here and abroad. He is

the author of articles on radium and radio-activity in the Encyclopedia Americana, has delivered eighty lectures on the subject before colleges, schools, scientific and other bodies, and has contributed to many technical publications here and abroad. He was one of the editors of "Navigating the Air," the official book of the Aero Club of America in 1907, and was chairman of the general committee of the Jamestown Exposition international aeronautical congress in the same year. In collaboration with Mr. Hudson Maxim, he prepared the "Chronology of Aviation" for the World's Almanac of 1911, subsequently reprinted in booklet form and widely distributed same here and abroad, and acted as secretary and expert of the aeronautics committee of the Hudson-Fulton celebration of 1909, and has testified for the Wright Bros. in all their aeroplane suits in this country. Mr. Hammer was married Jan. 3, 1894, to Alice Maude, daughter of Thomas H. White of Cleveland, O., and has one child, Mabel White Hammer.

WHAT THEY SAY.

(EXTRACTS FROM LETTERS IN MY PROFESSIONAL PAMPHLET.-W. J. H.)

"He had entire charge of my exhibit at the Paris Exposition, which was very successful.

"He has carried out successfully some of the largest electric lighting installations in this country and in Europe. He is competent, reliable and industrious. I heartily commend him."

THOMAS A. EDISON.

"It gives me pleasure to testify to the ability of Mr. William J. Hammer in electrical enterprises over which he has had supervision. I consider that he possesses exceptional qualities fitting him for the field of work which he has taken up. I feel confident that work entrusted to his care would receive the conscientious, painstaking attention which its importance demands."

ELIHU THOMSON.

"I take pleasure in recommending Mr. William J. Hammer to any one who contemplates doing anything in the way of electricity, as from my long acquaintance with him I know him to be thoroughly competent to advise in all matters connected with the same, and I know of no one more thoroughly competent than he."

WILLIAM WALLACE.

"I wish to say for him, that no man in the electric business, is as able, conscientious, energetic and fertile in resources in the matter of *detail* as he. He is the man we have all been looking for, and you can turn over to his care the largest equipment with absolute certainty that his work, whether supervisory, planning or constructing, will be of the very highest order."

EDWARD H. JOHNSON.

"I believe your very wide and diversified experience, both in this country and abroad, in connection with electric lighting and power matters, should fit you in a very high degree for the position of a consulting and constructing engineer."

H. M. BYLLESBY.

"It gives me great pleasure to state that I most strongly recommend Mr. W. J. Hammer as a consulting and constructing engineer.

"He has been for ten years actively working in many positions and in many countries, always connected with the planning, construction and inspection of large electric plants.

"Personally I know Mr. Hammer to be a man of the highest character and reliability."

FRANCIS R. UPTON.

"From my knowledge of and close acquaintance with Mr. Hammer, I believe him to be one of the most thoroughly conscientious and competent electrical engineers with whom I have had occasion to deal. His personal associations with Mr. Thomas A. Edison in Paris and other parts of Europe, as well as in the Edison Laboratory in this country, have peculiarly fitted him for the career upon which he has entered, and I most heartily commend him to all who may have occasion to avail themselves of his advice or services."

FRANK S. HASTINGS.

"He is entirely capable, both in a supervisory capacity or as a practical constructor and operator. His capacity for hard work and knowledge of and attention to detail, and his thorough probity and earnestness are too well known to need any special word. It will give me pleasure to be of any possible assistance to him."

FRANK J. SPRAGUE.