

Some Leaders of the A. I. E. E.

William Joseph Hammer, Vice-President of the Institute (1891-2 and 3), Manager (1893-4-5 and 6) and a Life Member and Fellow, was born at Cressona, Pennsylvania, February 26, 1858. His early education was acquired at private and public schools in Newark, N. J., supplemented by attendance at university and technical school lectures abroad.

In 1878 he became an assistant to Edward Weston in the Weston Malleable Nickle Company and in December, 1879, entered Edison's laboratory at Menlo Park, N. J., as general assistant. For a time he had charge of the tests and records on the incandescent lamps, and in 1880 was made the first Chief Engineer of the Edison Lamp Works at Menlo Park, which turned out 50,000 Edison lamps his first year. In October, 1881, he was sent by Mr. Edison to the Paris Electrical Exposition, on his way to London to become Chief Engineer of the English Edison Co. Here he constructed the first central station for incandescent electric lighting in the world, of 3,000 lamps, at 57 Holborn Viaduct, London, which started up January 12, 1882, and employed 2, and later 3, "Jumbo" 30-ton Edison dynamos.* At the same time he installed the large plant using 12 60-light Edison dynamos at the Crystal Palace Electric Exposition and also Edison's Paris Exhibit.

In 1883 he was offered the posts of Chief Engineer of both the French and the German Edison Companies and he accepted the post of Chief Engineer of the German Edison Company (now known as the Allgemeines Elektrizitäts Gesellschaft), putting in many plants throughout Germany. Mr. Hammer invented the automatic motor-driven "flashing" electric lamp sign (now universal), placing it upon the Edison Pavilion at the Berlin Health Exposition in 1883. In 1884 he returned to the United States, taking charge of Mr. Edison's personal interests and 8 Edison Companies at the Franklin Institute Electrical Exhibition, later becoming confidential assistant to President Johnson of the parent Edison Company, and, with E. H. Johnson and Frank J. Sprague, became an incorporator and trustee of The Sprague Electric Railway and Motor Co. and its first Secretary. In 1884-5 he was Chief Inspector of Central Stations of the Edison Company. In 1886-7 he was Chief Engineer and General Manager of the Boston Edison Company. Acting as a contractor, he laid \$140,000 worth of Edison underground tubing, and with the Sprague agents installed 98 Sprague motors. Later, acting as an independent engineer, he completed the 8,000-light plant of the Ponce de Leon Hotel at St. Augustine, Fla., overhauled the Jacksonville Edison Plant, which had been struck by lightning, and installed \$40,000 worth of electrical effects at the Cincinnati Exposition of 1888. He has made many technical reports here and abroad and acted as expert in patent litigation, etc.

Mr. Edison appointed him his personal representative at the Paris Exposition of 1889. Here he set up and operated all Edison inventions, a work for which in 1925 (34 years later), through the personal efforts of Mr. Edison, he was made Chevalier of the Legion of Honor by the French Government.

For his elaborate experiments in telephone relaying between New York and Philadelphia on February 4, 1889, Mr. Hammer received the John Scott Medal from

the Franklin Institute on February 5, 1902. Talking and music were sent through the air 5 times and through 15 separate mediums, the physical characteristics of the sound waves being changed 48 times in transmission and broadcasted by telephone from the Franklin Institute to 14 cities. Some of these experiments were repeated before the Electrical Jury at Paris in 1889. He was a Delegate to the International Electrical Congress at Paris in 1900. In 1896 he was President of the National Conference upon Standard Electrical Rules, which originated "The National Electric Code"; Vice-President of the New York Electrical Society and The Aeronautical Society. In 1889 he made a balloon flight across France; was Chairman of the Jury on Telegraphy, Telephony and Wireless at the St. Louis Exposition of 1904, and Chairman Jamestown Celebration Aeronautical Congress of 1907, and in 1909 one of a syndicate owning first airplane ever sold. Also expert and Secretary of The Aeronautics Commission of the Hudson-Fulton Celebration (1909), built hangars on Governors Island and made contracts with Wilbur Wright and Glenn Curtiss to fly, and in 1911 published a complete Aeronautical Chronology of Aviation, distributing free 22,000 copies. He has testified as an expert for the Wright Bros. in their airplane litigation.

In 1906 the Franklin Institute conferred upon him the "Elliott Cresson" gold medal for his "Historical Collection of Incandescent Electric Lamps," a work of 34 years. This "History of an Art" also received a silver medal at the Crystal Palace Exposition in 1882 and "The Grand Prize" from the St. Louis Exposition in 1904.

In 1902 Mr. Hammer brought from the Curie Laboratory in Paris 9 tubes of radium and took up actively work with radium. He delivered 88 lectures on radium before universities, colleges, scientific societies, etc. He wrote the first book published upon radium (1903) and proposed and used radium for cancer and tumor treatment. He also, in 1902, invented the "Radium Luminous Materials," which are now universally used for instrument dials, etc. He has done considerable original laboratory work upon selenium, radium, X-rays, cathode rays, ultra violet rays, phosphorescence, fluorescence, cold light, wireless, television, etc., and has contributed much to technical literature.

He is a Fellow of the American Physical Society, and the American Association for the Advancement of Science and the A. I. E. E., was one of the founders of the Edison Medal Fund in 1908 and a member of its Executive Committee and President of the Edison Pioneers in 1920. During the World War Mr. Hammer served as Major on the General Staff of the U. S. Army at the Army War College, Washington, D. C., being attached to the Inventions Section of the War Plans Division and later to the Operations Division at the War Department, in charge of Electrical and Aeronautical War Inventions. He also did special work at the U. S. Patent Office at times, marking and holding up certain patents likely to convey information to the enemy, and acting as member of the Advisory Board of Experts attached to the Alien Property Commission. He was elected Historian General of The Military Order of the World War (1926-7-8-9) and a member of The Society of American Military Engineers, and he has served on the general staff of both organizations.

*The New York Edison Co. started up its Pearl Street Plant, the first Central Station in the United States, with 400 lights on September 4, 1882.

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William Joseph Hammer who served the Institute upon its Council as Vice President (1891-2 and 3) and as manager (1893-4-5 and 6) and is now a Life Member and Fellow was born at Cressona, Pennsylvania, Feb. 26, 1858. His early education was acquired at private and public schools in Newark, N.J., and supplemented by study and in attendance at University and Technical school lectures abroad.

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In 1878, he became an assistant of Mr. Edward Weston in the Weston Malleable Nickel Company until it was sold in 1879 and in Dec. 1879 he entered Mr. Edison's laboratory at Menlo Park, N.J. as an assistant upon telephone, electric railway, vacuum pumps and incandescent electric lighting work. He had charge of the tests and records on the incandescent lamps and in 1880 was made the first-chief electrician of the Edison Lamp Works which turned out 50,000 Edison lamps the first year. In October 1881 he was sent by Mr. Edison to the Paris Elec. Expo. on his way to London where he became Chief Engineer of The English Edison Co., constructing the First Central Station for Incandescent Electric Lighting in the World at Holborn Viaduct which started up Jan. 12, 1882. This station employed 2 and later 3 thirty ton Edison "Jumbo" Dynamos, Underground Tubes, meters, heavy current switches, multiple fuses etc. and at the same time he installed the large Plant of 12 Edison Dynamos, engines and boilers at the Crystal Palace Int. Elec. Expo. of 1882 and Edison's Exhibit from Paris Exposition.

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In 1883 he was offered the Post of Chief Engineer of both the French and German Edison Companies accepting the latter and becoming the first Chief Engineer of the Company now known as the Allgemeine Elektrizitaets Gesellschaft organizing the working departments and putting in many plants throughout Germany.

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Mr. Hammer invented the first Automatic motor driven "Flashing" Electric Lamp sign in World (now universal) placing it upon the Edison Pavilion at the Berlin Health Expo. in 1883 where it flashed the name Edison letter by letter and as a whole.

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In 1884 he returned to the U.S. taking charge of Mr. Edison's personal interests and 8 Edison Company's exhibits at the Franklin Institute Int. Elec. Exhibition, later becoming Confidential Assistant to President Johnson of the Parent Edison Company, and with Messrs. E. H. Johnson and Frank J. Sprague became an Incorporator and Trustee of The Sprague Company and its first secretary.

In 1884-5 he held the post of Chief Inspector of Central Stations of the Parent Edison Company, making reports and tests and acting in an advisory capacity.

In 1886-7 he was Chief Engineer and General Manager of the Boston Edison Company and acting as a Contractor, laid \$140,000 of Edison Underground Tubing and changed his Company from a losing proposition to one paying a dividend of 12% and with the Sprague agents installed the first extensive plant for Elec. transmission of power in the World consisting of 98 Sprague motors, his circular data chart of these motors was published in the Elec. World Sept. 3, 1887.

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Later acting as an independent engineer he completed and started up the 8,000 light plant of the Ponce de Leon Hotel at St. Augustine, Fla., overhauled the Jacksonville Edison Plant which had been struck by lightning, acted as Consulting Engineer and contractor to install \$40,000 worth of Electrical effects at the Cincinnati Centennial Expo. of 1888 etc.

While there Mr. Edison asked him to go to the Paris Exposition of 1889 as his Representative and he designed, set up and operated all of Mr. Edison's various inventions which covered 9,800 square feet of space with 19 departments. Mr. Hammer had 45 assistants and his work resulted through Mr. Edison's personal efforts in his being made a Chevalier of The Legion of Honor by the French Government in 1925 (34 years later).

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In 1902 Mr. Hammer received the John Scott Medal and Premium from the Franklin Institute for his elaborate experiments in telephone relaying ~~experiments~~ between New York and Philadelphia on Feb. 4th, 1889 ~~at the time of his lecture~~ before the Institute on "Edison's Life and Inventions in which he employed interconnected, Edison carbon transmitters, "electro-motograph" loud speaking telephone receivers, phonographs, induction coils and batteries and 103 miles of wire 98 miles strung on poles and 6 miles underground and under water. The talking and music were sent through the air 6 times and through 15 separate mediums, and the physical characteristics of the sound waves were changed 48 times in transmission and after reaching the Franklin Institute was broadcasted by telephone to 14 different cities.

Some of these experiments he repeated before the International Elec. Jury at the Paris Expo. of 1889 and he was introduced to the French Academy by Col. G. E. Gouraud as the man who had carried out these experiments which he referred to during his lecture on the Edison Phonograph before the Academy.

In 1906 the Franklin Institute also conferred the "Elliott Cresson" gold medal upon Mr. Hammer for his "Historical Collection" of Incandescent Electric Lamps which he started at the Edison laboratory at Menlo Park and worked upon for 34 years. This "History of an Art" also received a special silver medal at the Crystal Palace Int. Elec. Expo. in 1882 and was awarded "The Grand Prize" by the St. Louis Exposition in 1904.

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Upon his return from a professional trip of 20,000 miles through 13 countries of Europe in 1902 Mr. Hammer brought from the Curie Laboratory in Paris 9 tubes of radium and was the first in America to take up actively work with the radium. He delivered largely at his own expense 88 lectures on radium before Universities, Colleges, Scientific Societies, etc. Wrote the first book published upon radium (1903) which was republished in several countries abroad. Mr. Hammer was perhaps the first man in the ~~world~~ to propose and use radium in cancer and tumor treatment. He also invented the "Radium Luminous Materials" in both powdered and liquid form in 1902 which are now universally used for instrument dials etc.

4 16 He has done considerable original laboratory work upon selenium radium, x-rays, Cathode Rays, ultra violet rays, phosphorescence, fluorescence, cold light, wireless etc., and has contributed liberally to technical literature. He is a Fellow of the American Physical Society, the American Association for the Advancements of Science and of the A.I.E.E.

President of the
He was one of the founders and contributors to the Edison Medal Fund in 1908 and a member of its executive committee and with Messrs. E. A. Scheffler, Charles Wirt and S. B. Paine originated the "Edison Pioneers" of which he was the President in 1920.

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During the World War Mr. Hammer served as a Major on the General Staff of the U. S. Army at the Army War College, Washington, D.C., being attached to the Inventions Section of the "War Plans Division" and later of the "Operations Division" at the War Department in charge of Electrical and Aeronautical War Inventions. He also did special work at the U. S. Patent Office (at times) marking and holding up certain patents likely to convey information to the

enemy and acted as a member of the Advisory Board of Experts attached to the Alien Property Commission.

In 1896 he was President of the National Conference upon standard Electrical Rules which originated "The National Electric Code", Pres. Franklin Experimental Club (1890-2) and Vice President N.Y. Elec. Society and The Aeronautical Society of America. Expert and secretary of The Aeronautics Com. of the Hudson Fulton Celebration (1909) and in 1911 published the first complete Aeronautical Chronology of Aviation and distributed 22,000 copies here and abroad.

He has represented the Institute here and abroad at Congresses, Conventions, Hall of Fame, and White House Ceremonies, etc. and on various committees.

He was Elected Historian General of The Military Order of the World War (1926-7-8) and a member of The Society of American Military Engineers.

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