



# THE Lamme Medal

OF THE  
American Institute of  
Electrical Engineers



SECOND AWARD (1929)

TO

Rudolf Emil Hellmund

for his contributions to the  
design and development of  
rotating electrical machinery

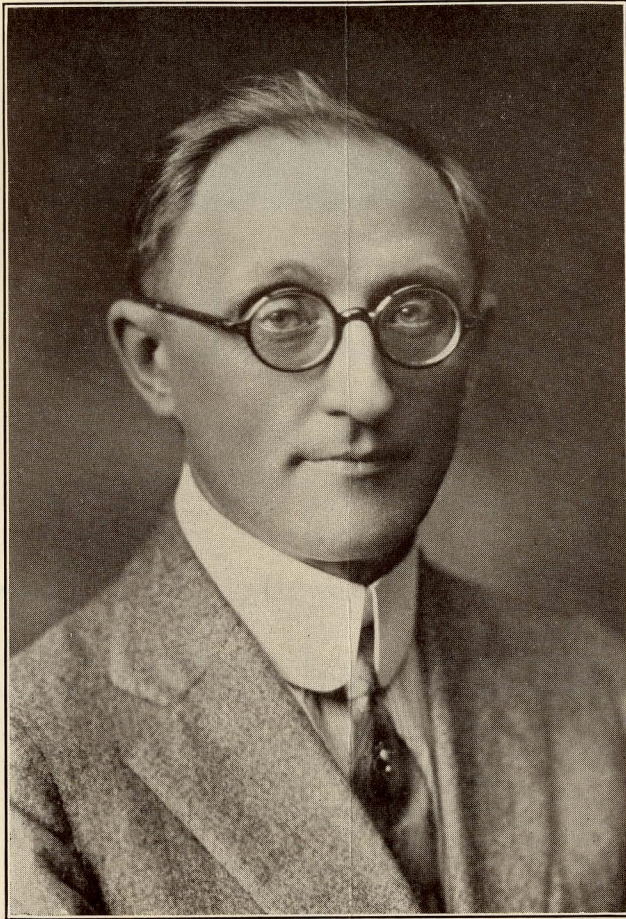


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RUDOLF EMIL HELLMUND

## The Founding of the Medal

BENJAMIN GARVER LAMME provided for the award of a gold medal by the American Institute of Electrical Engineers in accordance with this provision in his will:

"I hereby authorize and empower my said executors and trustees to pay over to or place in trust for the American Institute of Electrical Engineers the sum of six thousand (\$6,000) dollars, of which an amount not exceeding one thousand (\$1,000) dollars shall be expended for a die, and the balance shall be held as a trust fund, the yearly income from which is to be used for a gold medal (together with a bronze replica thereof) to be given annually to a member of said Society who has shown meritorious achievement in the development of electrical apparatus or machinery; and if accumulation from said funds, in the judgment of said beneficiary warrants, two medals (together with bronze replicas thereof) may be given in some years."

The Institute has accepted the trust. It has adopted suitable by-laws by which the award is made by a committee of nine members, three of whom receive appointment each year. The first committee was appointed August 1st, 1928.

Mr. Lamme made similar bequests to the Society for the Promotion of Engineering Education and the Ohio State University, providing in the former for the annual award of a medal "for accomplishment in technical teaching or actual advancement of the art of technical training," and in the latter for the award every five years of a medal to a graduate of the Ohio State University in any branch of engineering for meritorious achievement in engineering or the technical arts. The three organizations have adopted a common obverse for their medals and each has prepared a suitable reverse.

The first award (1928) by the American Institute of Electrical Engineers was made to Allan Bertram Field "for the mathematical and experimental investigation of eddy current losses in large slot-wound conductors in electrical machinery."

The Society for the Promotion of Engineering Education has awarded the Lamme Medal "for accomplishment in technical teaching or actual advancement of the art of technical training," as follows: 1928, to George Fillmore Swain; and 1929, to Irving Porter Church.

## The Founder

BENJAMIN GARVER LAMME was born near Springfield, Ohio, January 12, 1864. He grew up on the farm, received his early education in the country school, and finally went to the Ohio State University, where he graduated in 1888 with the degree of Mechanical Engineer.

Early in the following year, he entered the service of the Westinghouse Electric & Manufacturing Company at Pittsburgh, and a few months later began his career as a designer of electrical machinery. His success in this field was phenomenal, covering as it did pioneer work in street railway motors and D. C. generators, single and polyphase A. C. generators, turbo-generators, synchronous converters, induction motors, and the single phase railway motor, on all of which he left an inefaceable mark of his engineering skill.

Mr. Lamme was recognized as the chief electrical designer of the Westinghouse Company almost from the time he began his work, and was Chief Engineer for many years prior to his death in 1924.

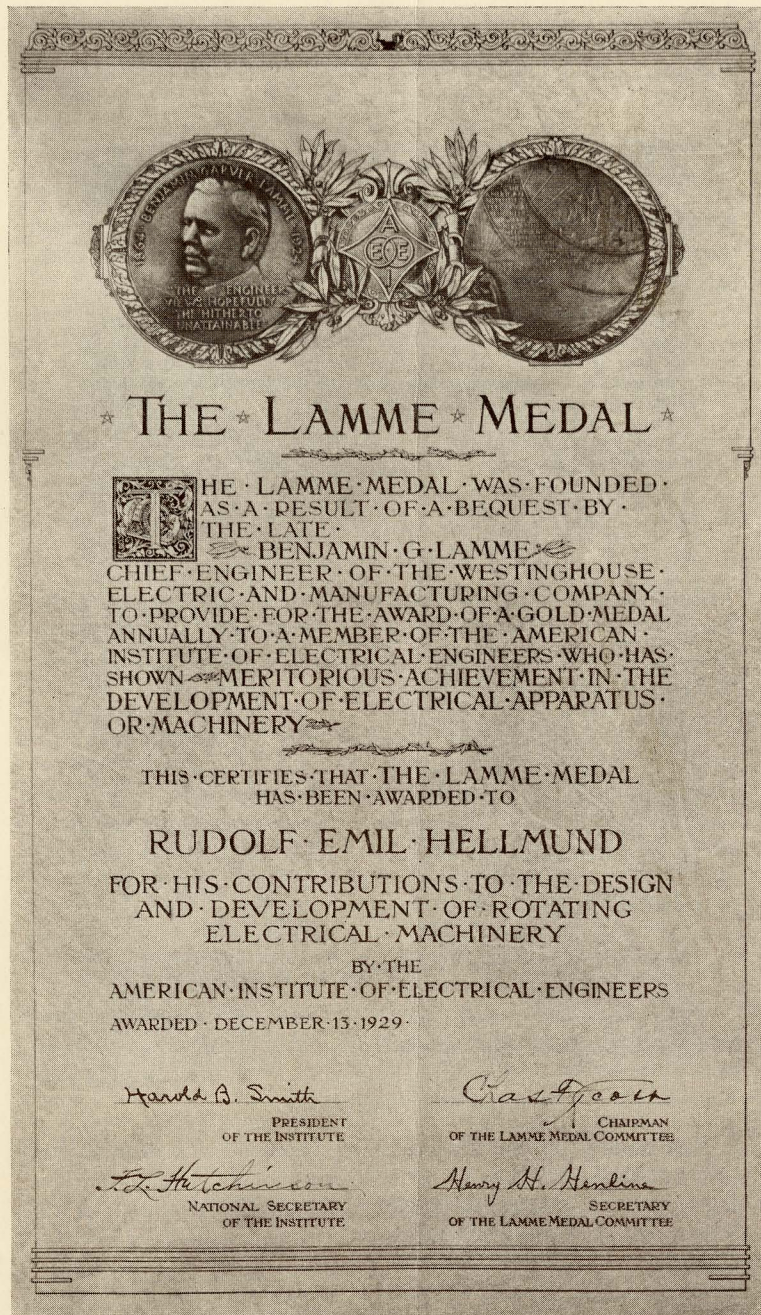
His technical papers, some of which have become classics, are remarkable examples of the presentation of technical matter in clear, understandable, non-mathematical language.

In spite of his modest and retiring disposition which caused him to shun publicity, his ability was eventually recognized, and he was awarded the Edison Medal in 1918 for "Invention and Development of Electrical Machinery." He also received the first award of the Joseph Sullivant Medal, which is awarded at five-year intervals by the Ohio State University to the alumnus who has made the most notable contributions to "the Liberal, the Fine, or the Mechanic Arts." He was a member of the Naval Consulting Board during the War.

## The Medal

ON the Obverse of the Medal, accompanying the portrait, are the words "The engineer views hopefully the hitherto unattainable." These words are taken from an article prepared by Mr. Lamme for the Ohio State Engineer on "The Electrical Engineer of Today." Their appropriateness is the greater as they aptly characterize his own attitude.

The Reverse of the Institute Medal represents Niagara, America's greatest source of power. It is the birthplace of large scale



CERTIFICATE OF AWARD

hydroelectric power; here were installed the great electric generators which Lamme designed. In the background is the modern industrial city, typical of a new civilization made possible by electric power.

The medal was designed by Erwin F. Frey, Ohio State University.

## The Recipient

RUDOLF EMIL HELLMUND, Chief ~~Electrical~~ Engineer of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, was born in Gotha, Germany, February 2, 1879. After receiving his early education in Gotha, he attended the Ilmenau Technical College, from which he was graduated with honors in Electrical Engineering in 1898. He later took post graduate work at the University of Charlottenburg.

The four years following his undergraduate work were spent in practical work with three firms: with Poeschmann & Company, near Dresden; with the Land & Sea Cable Works at Nippes, near Cologne; and with the Espingen Machine Works at Stuttgart. He stayed two and one-half years with the last named firm, where he had charge of the test floor, in addition to doing design work on apparatus and appliances. It is interesting to note that this stage of his experience was quite similar to that of the founder of the medal, in that both laid the foundation for a broad career in design work on fundamentals obtained from personal testing of machines.

On completion of his course in Charlottenburg, in 1903, Mr. Hellmund came to the United States and was employed by the Krantz Company of Brooklyn as a designer of switches and panel boards. In 1904 and 1905 he was associated with William Stanley of Great Barrington, Massachusetts, and worked upon the design of induction motors and also on self-compounding alternators. Following this he was employed by the Western Electric Company at Hawthorne, Illinois, and designed a line of induction motors which was then marketed by that company. This experience directly qualified him for similar work with the Westinghouse Electric & Manufacturing Company which he took up at East Pittsburgh, Pa., in October, 1907. He worked on the design of several lines of induction motors for about four years, after which he was engaged for a time on application engineering in the General Engineering Department.

In 1912 he was placed in charge of the design of all direct and alternating-current motors for light and heavy traction. In 1917,

Mr. Hellmund was assigned miscellaneous consulting work in which he continued until 1921, when he was made Engineering Supervisor of Development.

In 1926 he was appointed Chief Electrical Engineer of the Westinghouse Electric & Manufacturing Company, <sup>and in 1933, Chief Engineer</sup> which office he still holds.

He has obtained about 300 United States and foreign patents, covering the details of apparatus and systems of control and operation.

Mr. Hellmund has contributed more than a hundred articles, editorials and discussions, on technical subjects, which have appeared in the proceedings of the Engineering Societies of the United States, England, and Germany, and in the technical press of these countries and France.

In 1913, he married Miss Hetty Borgman of Pittsburgh. They have one son, Rudolf, born in 1915.

He joined the Institute in 1905, was transferred to the grade of Member in 1909, and became a Fellow in 1913. He is also a director of the German Electrotechnical Society.

## The Achievement

THE AWARD of the LAMME MEDAL, 1929, is made to Mr. HELLMUND for his contributions to the design and development of rotating electrical machinery.

His extensive contributions have been made through three distinctive channels:

- FIRST, through the results of his own personal work in design;
- SECOND, through widespread contributions to the technical literature of dynamo-electric design;
- THIRD, through the training of young men in the practice of methods of calculation resulting from his own experience.

Under the first, are his advances in ventilating systems and in stator and rotor structures for industrial and railway motors. He originated numerous control systems, types of armature windings, regenerative systems, control systems and structures for phase converters and phase converter locomotives. All of these are in practical use and many are the subjects of patents.

Under the second, his contributions to the technical literature may be grouped broadly under several classifications. The first of these is the use of graphical methods for studying factors of induc-

tion motor design and performance, such as: graphical study of the rotating field; leakage reactance, particularly zig-zag and differential leakages; higher harmonic currents.

The second group concerns itself with A.C. commutator motors and covers studies of types and performance; commutation; practical general introduction of non-resistance lead motor into the United States.

The third group relates to regeneration in both direct current and phase converter locomotives, and includes discussion of the original application of each.

A fourth group of writings covers phase converter locomotives in detail and the control of the phase converter, phase balance, the general effect of single-phase excitation and related subjects.

A further miscellaneous group includes ventilation problems, flashing, transient conditions in induction motors, and a number of papers on educational subjects.

In his extended contributions to technical literature, his style is exceptionally clear, and he has written largely to be helpful to the student who takes pains to follow his work.

Under the third heading, viz., the training of young men, Mr. Hellmund has contributed directly, as did Mr. Lamme, by passing along to succeeding classes, both formally and informally, an intimate knowledge of the analyses and methods by which success in commercial designing is attained.

The contribution to the art of designing rotating machinery, which is recognized by this award of the medal, is an integration of years of patient study and strenuous work. With it is coupled the spirit of service which makes available to all the contributions of a gifted few.