

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.

NEW YORK, April 18, 1894.

The eighty-sixth meeting of the INSTITUTE was held this date at 12 West 31st street, and was called to order at 8 P. M. by President Houston.

The Secretary read the minutes of the last meeting which were approved.

The Secretary read the following list of associate members elected and transferred at the Council meeting in the afternoon :

Name.	Address.	Endorsed by.
BEST, A. T.	Electrical Engineer, Hotel Ponce de Leon, St. Augustine, Fla.	W. G. Whitmore. Chas. D. Shain. Aug. Noll.
CARUS-WILSON, CHARLES A.,	Professor of Electrical Engineer- ing, McGill University, Mon- treal, P. Q.	T. C. Martin. Joseph Wetzler. L. Stieringer.
COLVIN, FRANK R.,	Treasurer and Business Manager, <i>The Electrical Engineer</i> , 203 Broadway, New York City.	James Hamblet. Geo. M. Phelps. A. E. Kennelly.
GEORGE, JOHN C.,	President, Raleigh Electric Street Railway Co., Marine Bank Bldg., Baltimore, Md	Louis Duncan. Samuel Reber. S. W. Huff.
GERRY, JAMES H.,	Superintendent, The Self-Winding Clock Co., 163 Grand Ave.	Edward Durant. James Hamblet. Geo. A. Hamilton.
GLADSTONE, JAMES WM.,	Manager, Edison Mfg. Co., West Orange, N. J.	T. A. Edison. A. E. Kennelly. Edwin J. Houston.
HOBART, HENRY M.	Engineer, General Electric Co., Schenectady, N. Y.	Ralph W. Pope. F. W. Tischendoerfer. C. P. Steinmetz.
HOOD, RALPH O.,	Electrical Engineer with General Electric Co., 180 Summer St., Boston, Mass.	A. E. Kennelly. Elihu Thomson. Caryl D. Haskins.
HUBBARD, WILLIAM C.,	Electrician, Royal Arc Electric Co., 143 Liberty St., New York City.	Louis B. Marks. E. T. Birdsall. Chas. D. Shain.
INGOLD, EUGENE,	Consulting Engineer and Expert, Pittsburgh, Pa.	T. C. Martin. A. L. Rohrer. J. R. Lovejoy.

KEEFER, EDWIN S.,	Supt. of Electric Light Construction, Western Electric Co., 22 Thames St., New York City.	G. A. Hamilton. Ralph W. Pope. J. Stanford Brown.
MACLOSIE, CHAS. H.,	Engineer, with B. J. Arnold, 436 The Rookery, Chicago, Ill.	B. J. Arnold Fred. DeLand. Lemuel S. Boggs.
NEILER, SAMUEL G.,	Ass't. Electrical Engineer, The World's Columbian Exposition, 4318 Berkley Ave., Chicago, Ill.	R. H. Pierce. Lemuel S. Boggs. Fred. DeLand.
PROCTOR, THOS. L.,	General Manager, Riker Electric Motor Co., Newtown, L. I., N. Y.	Philip Mauro. Joseph Wetzler. Andrew L. Riker.
SEARLES, A. L.,	Engineering Dept., The Royal Arc Electric Co., 73 Watt St., New York City.	Chas. D. Shain. E. T. Birdsall. Louis B. Marks.
TOERRING, C. J., JR.,	Electrician, Royal Arc Electric Co., 143 Liberty St., New York City.	Louis B. Marks. Franklin L. Pope. Edw. L. Nichols.
WILEY, WALTER S.,	Supt. South Omaha Electric Light Co., South Omaha, Neb.	W. F. White. Harris J. Ryan. D. C. Jackson.

Total 17.

TRANSFERRED FROM ASSOCIATE TO FULL MEMBERSHIP.

Approved by Board of Examiners, December 7th, 1893.

GREENE, S. DANA	Assistant General Manager, General Electric Co., Schenectady, N. Y.
EICKEMEYER, RUDOLF	President Eickemeyer and Osterheld Manufacturing Co., Yonkers, N. Y.

Approved by Board of Examiners, March 20th, 1894.

MORROW, JOHN THOMAS	Supt. Electrolytic Plant, Boston and Montana Consolidated Copper and Silver Mining Co., Great Falls, Mont.
JOHNSTON, A. LANGSTAFF	Consulting Engineer, Hestonville, Mantua and Fairmount Passenger R. R. Co., 4300 Lancaster Ave., Philadelphia, Pa.
CRANDALL, JOSEPH EDWIN	Electrician, C. & P. Telephone Co., 619 Fourteenth St., N. W. Washington, D. C.

Total 5.

The following applications for associate membership have been received and will be acted upon at the meeting of Council, June 20th, 1894.

A. L. Croxton, San Francisco; L. G. Lilley, Wyoming, O.; Maurice Oudin, Schenectady; Frank H. Knox, Baltimore; Paul A. N. Winand, Philadelphia; Frank W. Brady, Wellsburg, W. Va.; Geo. H. Harris, Birmingham, Ala.; Frederick L. Hutchinson, Elizabeth; Edwin H. Bennett, Jr., Bayonne; Herbert Lloyd, Philadelphia; John E. Criggal, Springfield, Mass.; Albert Scheible, Chicago; John B. Blood, Schenectady; Arthur E. Childs, Philadelphia; George Stephens, Peterborough, Ont.; Jas. P. Malia, Chicago; H. C. Eddy, Chicago; Philip G. Gossler, Brooklyn; Wm. K. Archbold, Boston; Jos. C. Mayrhofer, New York; C. C. Chesney, Pittsfield, Mass.; F. C. Caldwell, Columbus; Joel W. Stearns, Jr., Denver; George S. Bliss, Pittsburg. Total 24.

Any objection to the election of these candidates should be filed with the Secretary before that date.

THE PRESIDENT:—Have you any other communication to make, Mr. Secretary?

THE SECRETARY:—I have the sad announcement to make, Mr. President, of the death of one of our esteemed members, Dr. Franz Schulze-Berge, who is well known to the profession, and who died on the 21st of March, in Brooklyn, N. Y. A suitable obituary notice has been handed in, and will be printed in the TRANSACTIONS.

THE PRESIDENT:—There is a communication here from the Committee on Units and Standards, which I will ask the Secretary to read.

THE SECRETARY:—This recommendation of the Committee on Units and Standards is based on a letter from T. C. Mendenhall, Superintendent United States Coast and Geodetic Survey, Washington, D. C., in which he requests the support of the INSTITUTE.

NEW YORK, April 18th, 1894.

To the President and Council,

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.

Gentlemen:—Your committee on Units and Standards begs to recommend that a resolution be forwarded to Congress from the INSTITUTE urging the passage of the bill legalizing the electrical units adopted by the Chicago Congress.

F. B. CROCKER, GEO. A. HAMILTON,
W. D. WEAVER, A. E. KENNELLY,
WILLIAM E. GEYER.

THE PRESIDENT:—Gentlemen, you have heard the communication from the Committee on Units and Standards? What is your wish? What disposition of the case will you make? Will you take action on it now?

MR. TOWNSEND WOLCOTT:—I would like to ask about the question of jurisdiction—if that is a proper thing for our society to do. I think it is a very desirable thing to do, and if it is also proper I should be in favor of it.

THE PRESIDENT:—The Chair does not quite understand.

MR. WOLCOTT:—Are we authorized to do such a thing? Is the AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS authorized to do such a thing?

THE PRESIDENT:—I suppose it is competent for the AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS to do what they may see fit in the premises. Of course, all they could do would be to make a recommendation.

SECRETARY POPE:—I think this communication from the chairman of the committee will throw a little light on it.

THE PRESIDENT:—The Secretary will please read the letter directed by the committee to the President.

The Secretary read the following letter:

NEW YORK, April 18th, 1894.

Professor Edwin J. Houston,
President.

Sir:—Our committee has signed the appended rough draft of a recommendation to Council, which can be considered at the next Council meeting. In the

meantime, however, in case of urgency arising, we suggest that the sense of the meeting be taken informally. This might also serve as a notice that formal action will be taken at the next (annual) meeting of the INSTITUTE.

Yours respectfully,

A. E. KENNELLY.

THE PRESIDENT:—If Mr. Hamilton or Mr. Crocker, or any other member of the committee would like to say anything about this matter, the Chair would be pleased to extend the courtesy of the floor to them.

PROF. FRANCIS B. CROCKER:—The desirability of doing something of this sort is unquestionable, I think. But as to its formality, possibly, some doubt might arise. Therefore, to avoid the latter question the committee suggests that the sense of the meeting be taken—to which, of course, there can be no objection—and that formal action could be delayed until the next meeting of the INSTITUTE, which will be the annual meeting, and which would certainly be proper time to take formal action. This statement will also serve as a notice that such formal action will then be taken. In the meantime the bill might come up in Congress, and it would be well if the officers of the INSTITUTE could use the fact that the sense of the meeting had been taken at a regular meeting.

THE PRESIDENT:—I see Mr. Hamilton and Professor Geyer; do they wish to add anything to what Professor Crocker has said?

MR. GEORGE A. HAMILTON:—I think what Professor Crocker has said covers the ground very thoroughly.

THE PRESIDENT:—Professor Geyer.

DR. WILLIAM E. GEYER:—Of course, anything that we may do will not bind anybody, and as Professor Crocker has said, the idea is to find out whether the INSTITUTE would approve of such action.

THE PRESIDENT:—Does Mr. Weaver wish to add anything? Does Mr. Kennelly?

MR. A. E. KENNELLY:—I have not anything to add to the remarks made by Professor Crocker.

THE PRESIDENT:—Does any other member of the INSTITUTE wish to speak on this matter? If not, what action will the INSTITUTE take on the recommendation?

PROF. CROCKER:—I move that it is the sense of this meeting that the passage of the bill legalizing the electrical units adopted at the Chicago Electrical Congress of 1893, be recommended.

MR. GEORGE M. PHELPS:—Mr. Chairman, if you will permit me, I will suggest a slight addition, to make the action possibly stronger; and that is, that this meeting recommend to the general and annual meeting of the INSTITUTE to be held in May, a more formal endorsement and recommendation of the measure. I offer this because one or two speakers suggested that this meeting give its sense on this subject, and that the general meeting in May might take a more formal action.

PROF. CROCKER :—I accept that amendment.

THE PRESIDENT :—Gentlemen, it is moved and seconded, as you have heard. Are you ready for the question ?

[The motion was put and carried.]

THE PRESIDENT :—I take great pleasure now in introducing to you Mr. I. H. Farnham, of Boston, who will read a paper on the Destructive Effect of Electrical Currents on Subterranean Metal Pipes.

MR. FARNHAM :—I have had the honor and pleasure of being a member of this society for some time, though have never attended but one of your meetings, so I feel almost like a stranger ; I hardly know what your customary methods are. Perhaps, as the paper is printed, a synopsis is all that you usually have presented here. It has occurred to me that as we need the room darkened in order to see the lantern diagrams, which renders it impossible for you to read the paper as it is presented ; perhaps, it will be as well for me to keep pretty close to the printed paper, and this I will attempt to do.

The subject before us has frequently been discussed and sometimes it has been very poorly presented. I will give you one example. There was a meeting of engineers in a city—no matter what city—a few months ago, and as this subject of electrolysis was to be talked about I was invited to be present. A committee was to report upon the matter. The committee had been in existence for a year, and the three members of it each made a separate report. The first one had found some gas pipes in months gone by, which he believed, had been destroyed by electrolysis, but of late he was not so sure about it. He thought that there might be some doubt as to whether electrolysis was really doing any damage in that city. The next member of the committee related the fact, that in his city they had connected an incandescent lamp from the gas pipe to the water pipe in a cellar, and the current which flowed there lighted the lamp. The last one, whose remarks were really the most interesting, came forward with a specimen pipe in his hand and said, "I have something to show you, electrolysis materialized." He knew it was a case of electrolysis, because he saw it take place. He said that a trolley wire broke, and it swish-swashed sometime through the air, and finally struck a gas post, and in striking the gas post it produced "this hole in the pipe," which he showed. I don't know whether that is a sample of all these meetings and papers, but that is one at which I happened to be present. If, now, I am able to give you a little outline of the work we have accomplished in this field it may form a sufficient basis for your discussion.

Mr. Farnham then read the following paper :