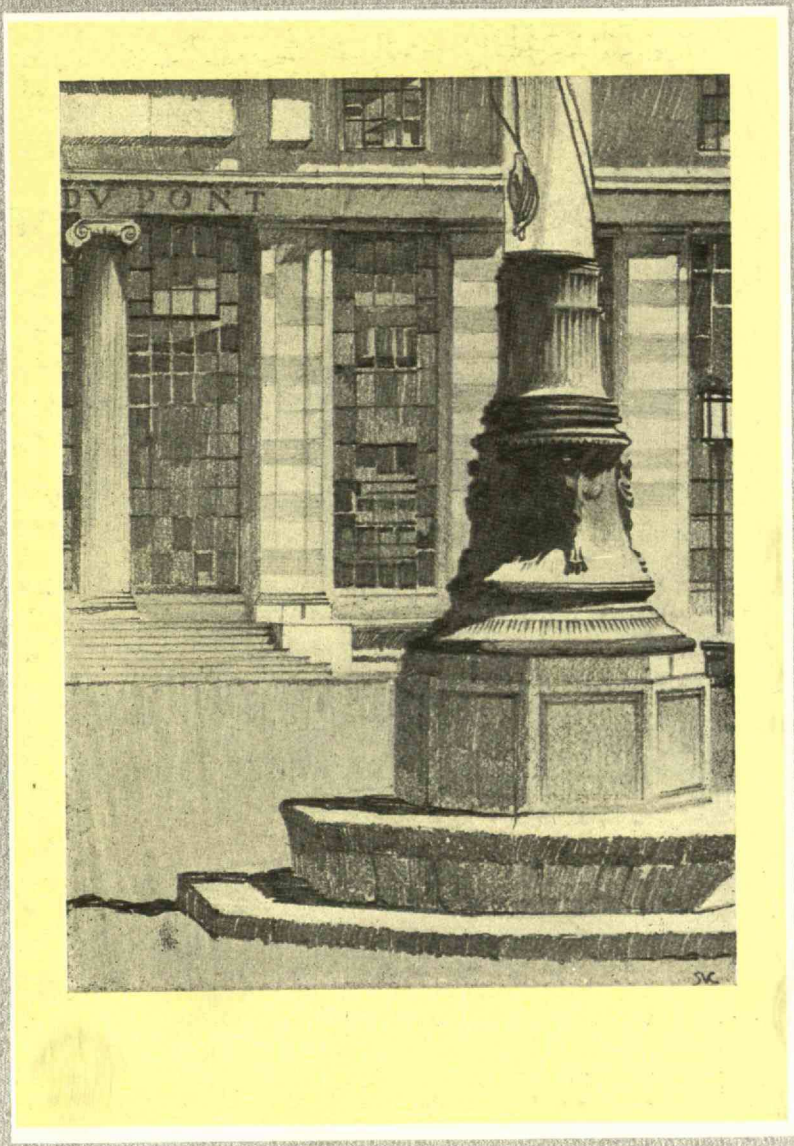
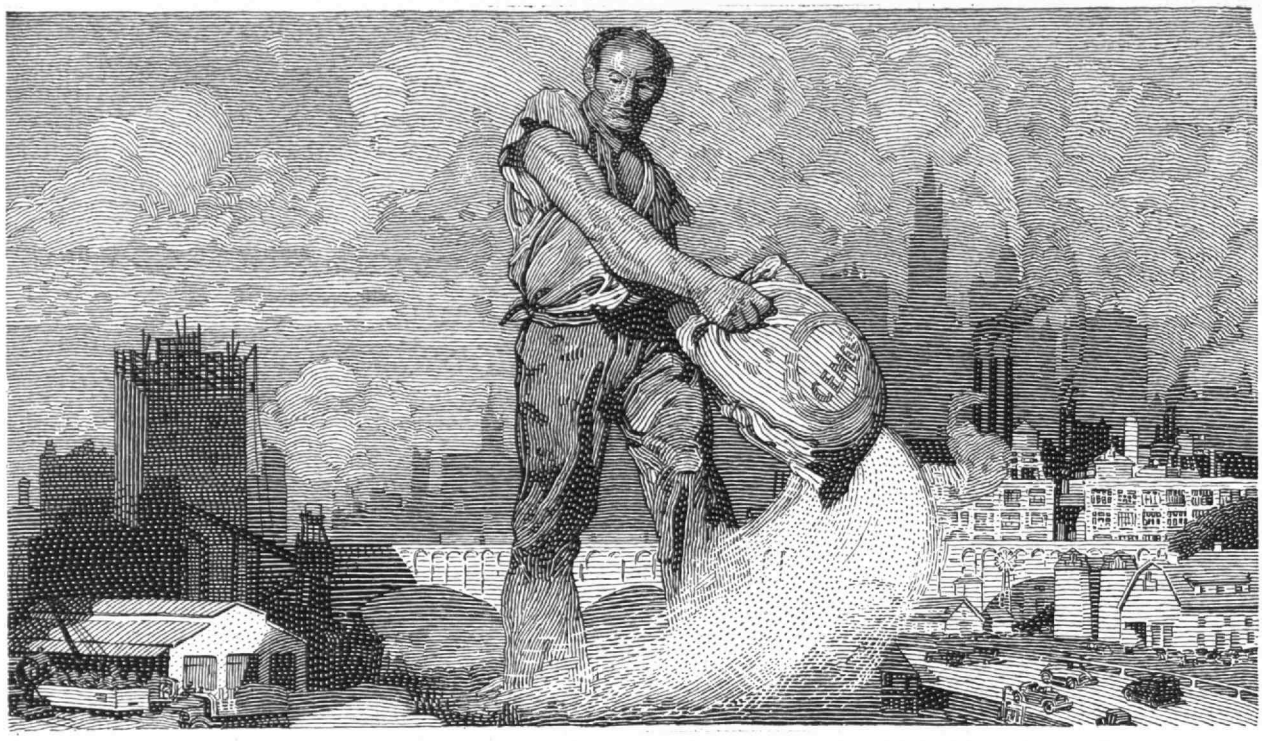
THE TECHNOLOGY REVIEW



JULY
1926

RELATING TO THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY



The Magic Sack—

GOOD ROADS—FARM BUILDINGS WAREHOUSES—SKYSCRAPERS

—all out of the magic sack of cement!

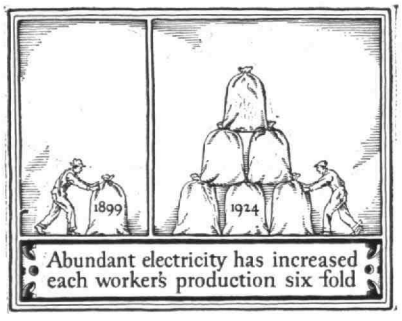
THE United States produced in 1924 well over a half billion sacks of cement, for which the largest single use was in the construction of good roads.

How much these roads have helped to make us a nation of neighbors needs no repetition. But the means by which the cement industry made such roads possible are not so well known. Though only five times as many workers are employed, the production of cement has increased thirty times in the last quarter century. The lion's share of the work is not done by men but by electricity—its use has increased more than fifteen-fold.

In other words, the harder, coarser tasks of cement making have been shifted from the shoulders of men to the tireless shoulders of motors—a lasting economic gain.

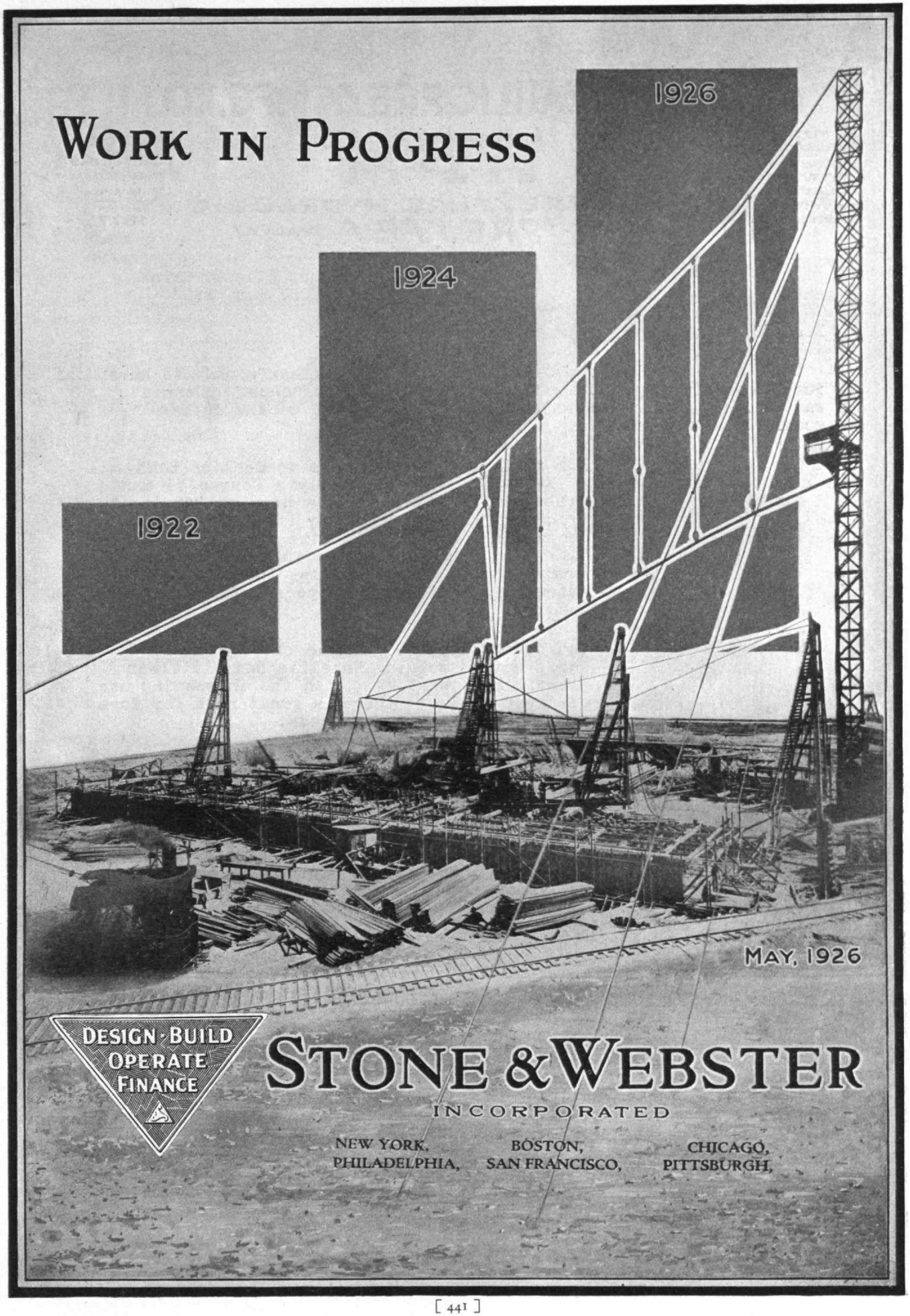
There should be more industries of which a similar story might be told, for American business has found a way to accomplish the seemingly impossible—to pay the highest wage and still maintain the lowest costs. Through the applications of electricity, the productive power of each workman may be so increased that, single-handed, he outworks the old-time "gang" and receives more than the old-time foreman's wage.

The General Electric Company's monogram is found on the motors that run the grinders, weigh the cement and sew the sacks. As in so many other industries, these initials have helped men to see that electricity works at lowest cost in money and human strength.



Abundant electricity has increased each worker's production six-fold

GENERAL ELECTRIC


WORK IN PROGRESS
1926
1924
1922
MAY, 1926
DESIGN · BUILD
OPERATE
FINANCE
STONE & WEBSTER
INCORPORATED
NEW YORK,
PHILADELPHIA,
BOSTON,
SAN FRANCISCO,
CHICAGO,
PITTSBURGH,

THE HYDRAULIC PRESS MFG. CO.

DISTRICT SALES OFFICES
NEW YORK
PITTSBURG
CLEVELAND
CHICAGO
PORTLAND ORE.

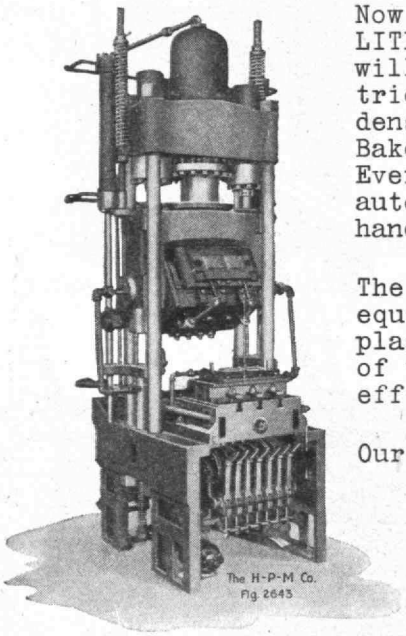
Engineer Builders of
H-P-M
HIGH PRESSURE HYDRAULIC
PUMPS **PRESSES** VALVES

FACTORY
MOUNT GILEAD
OHIO.
U.S.A.
SINCE
1877

Mount Gilead, Ohio
JULY 1st, 1926

Dear Alumni :-

The Technology Club of Central Ohio - that's us! We have just recently organized with headquarters at Columbus. "Dennie" was on hand at our second meeting, giving us all of the latest gossip from the 'Stute.



Now to talk shop! Suppose we mention BAKELITE, this time. Naturally a Course VI man will tell us Bakelite is a popular "dielectric" and Course X will say it's a "phenol condensation" product. But the rest of us know Bakelite in the many forms in which we use it. Everything from radio dials, tube sockets, automobile ignition to pipe stems and cane handles.

The hydraulic press is the chief item of equipment in molding Bakelite and all other plastic compositions. With the increasing use of these products there is great need for more efficient production methods.

Our company has therefore been working along these lines. We have perfected and patented full automatic presses like the one pictured here.

The operator merely places the raw Bakelite powder in the mold, shifts a lever - and goes on to the next press. The automatic control does the rest, applying two pressures, heating, chilling, opening and ejecting. One unskilled operator serves several units.

Everyone is interested in Bakelite from some angle or other. I'll be glad to send you more complete dope - on this and any other application of HIGH PRESSURE HYDRAULICS that may interest you. Drop me a line.

Yours for Tech.
Howard J. MacMillin II-21.
Second Vice-President
THE HYDRAULIC PRESS MFG. CO.

P.S. The dial on the new single control Atwater-Kent is being molded by H-P-M Automatics.

THE TECHNOLOGY REVIEW

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CHARLES HAYDEN, '90, *President*
CHARLES W. AIKEN, '91, SAMUEL C. PRESCOTT, '94 } *Vice-Presidents*
ORVILLE B. DENISON, '11, *Secretary-Treasurer*

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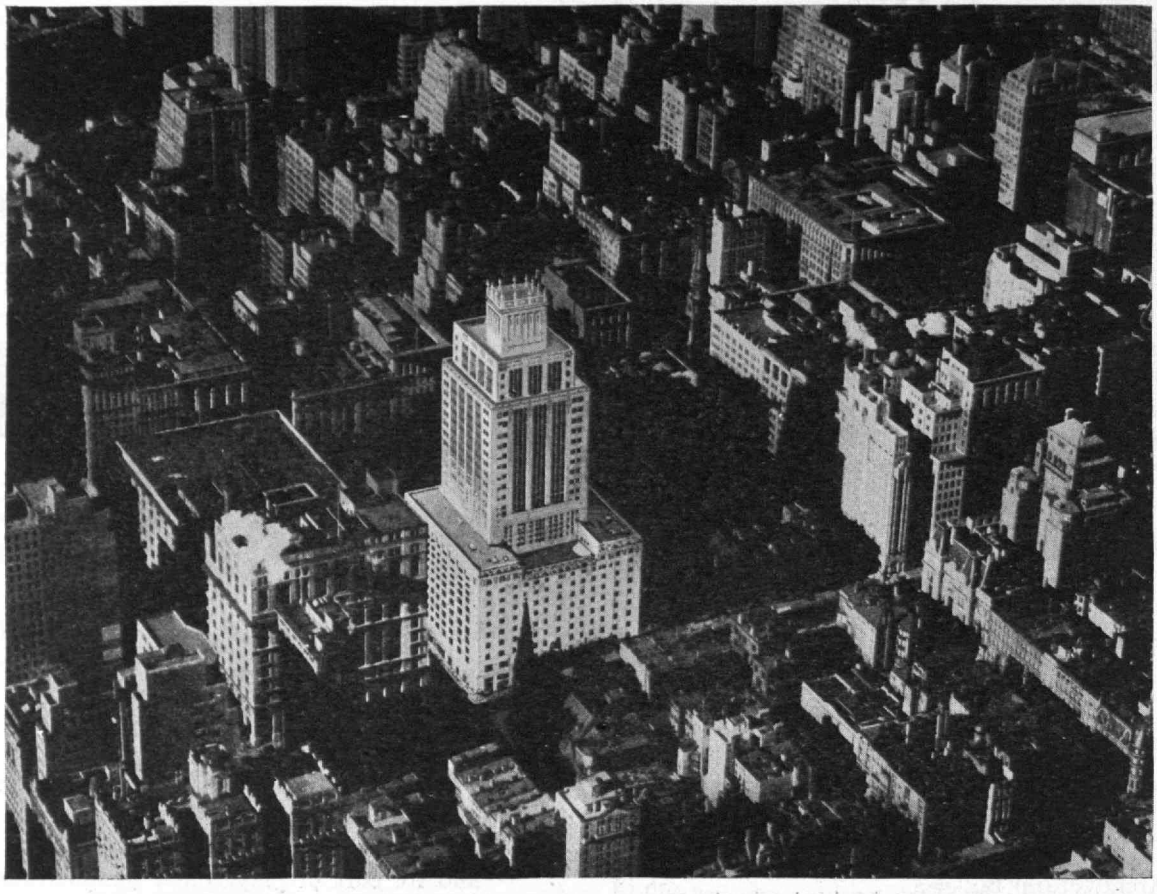


200 MADISON AVENUE
25 FLOORS—8½ MILLION CUBIC FEET
WARREN & WETMORE, ARCHITECTS

Foundations to earnings in minimum time.

Five floors were occupied six months
after beginning the erection of steel.

DWIGHT P. ROBINSON & COMPANY
INCORPORATED
BUILDERS

CHICAGO NEW YORK LOS ANGELES

MAXIMUM RETURN TO CLIENTS PER DOLLAR INVESTED

The
TECHNOLOGY REVIEW
RELATING TO THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY
VOLUME XXVIII · · · JULY, 1926 · · · NUMBER 8

The Past Months

HARRY MANLEY GOODWIN, '90, Professor of Physics and Electrochemistry, has been appointed the first Dean of Graduate Students. Following his graduation he began his teaching in the Institute as an Assistant in the Department of Physics. One year later he was appointed an Instructor, was made an Assistant Professor in 1897, an Associate Professor in 1903 and a Professor in 1906. He will continue to be in charge of the Course in Electrochemical Engineering in the Department of Physics. In 1892 Dr. Goodwin was granted leave of absence for study abroad and was awarded the degree of Doctor of Philosophy from the University of Leipsic in 1893 and in the winter of 1893–94 studied at the University of Berlin, returning to resume teaching at Technology in the autumn of 1894.

Other appointments for the academic year 1926–27, announced by the Corporation included the promotion of four Associate Professors to full Professorship. They are F. E. Armstrong to Professor of Political Economy; S. P. Mulliken, '87, to Professor of Organic Chemistry; N. C. Page, '02, to Professor of Electricity and Donald S. Tucker to Professor of Economics.

Those promoted from the grade of Assistant Professor to that of Associate Professor are H. L. Bowman, S. M. '14, Structural Engineering; T. L. Davis, '13, Organic Chemistry; J. J. Eames, '02, Experimental Engineering; D. A. Fales, '14, Automotive Engineering; L. J. Gillespie, Physico-Chemical Research; A. L. Goodrich, '98, Drawing and Descriptive Geometry; E. H. Schell, '12, Business Management and W. C. Schumb, Inorganic Chemistry. Dr. Charles Terzaghi, Lecturer and Research Associate, is appointed Associate Professor in Foundation Engineering.

Other promotions included the following instructors who are appointed Assistant Professors: W. A. Crosby, '17, English; M. W. Dole, '04, Mechanism; K. D. Fernstrom, '10, Economics; V. O. Homerberg, '21, Metallography; A. A. Morton, Organic Chemical Research; Penfield Roberts, English; L. H. Young, '15, Physics; and F. H. Slack, Public Health Laboratory Methods.

Three resignations from the Faculty have been made public: Associate Professors C. P. Burgess, Airship Design; and D. A. MacInnes, Physico-Chemical Research; and Assistant Professor W. F. Jones, '09, Structural Geology.

From a woodcut by Kenneth Reid, '18

MICHAEL I. PUPIN, PH.D., SC.D., LL.D.

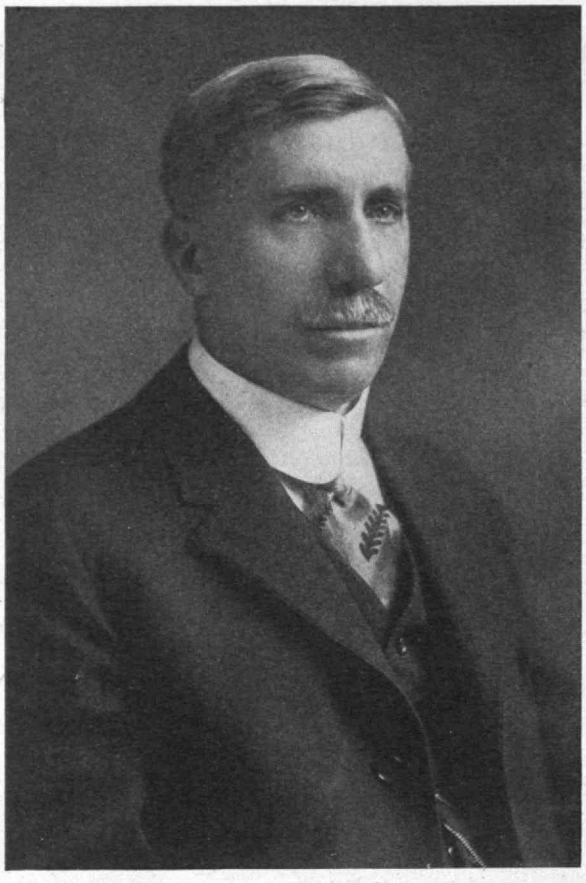
Professor of Electromechanics at Columbia and President of the American Institute of Electrical Engineers, who addressed the graduating class on June 8. His subject was "The Idealism of Science"

DEGREES were awarded to 637 candidates at the graduation exercises on the afternoon of June 8. As was the case last year, the ceremonies were held in the open air in du Pont Court. Nearly 3000 guests, relatives and friends of the seniors were assembled when the academic procession marched from the main entrance, and through Eastman Court, lead by President Stratton and Dr. Michael I. Pupin, Professor of Electromechanics and Director of the Phoenix Research Laboratories at Columbia and President of the American Institute of Electrical Engineers, who delivered the address to the graduating class.

Dr. Stratton had as his escort, Colonel Alexander Macomber, '07, Chief Marshal; Dr. Pupin was escorted by Professor Charles M. Spofford, '93, Chairman of the Faculty. Then came the Reverend H. K. Sherrill of Trinity Church, who gave the invocation, and Dean

Henry P. Talbot, '85. Brigadier General M. H. Barnum, U. S. A., who made the award of commissions to members of the Reserve Officers Training Corps was accompanied by Colonel Frederick W. Phisterer, Head of the Department of Military Science and Tactics, and Rear Admiral Philip Andrews, U. S. N., by Professor J. R. Jack, Head of the Department of Naval Architecture and Marine Engineering. Members of the Corporation and Faculty and candidates for degrees followed.

The degrees awarded by President Stratton included eleven Doctorates of Philosophy and of Science. The degree of Master of Science was awarded to 124 candidates; nine received the degree of Master in Architecture and one the Certificate in Public Health. The new Bachelors of Science numbered 492 and included students in nearly every branch of engineering, from this country, its territories and twenty-nine foreign countries. In the latter China led with thirty graduates; Belgium, India and Japan each had six; Canada had twenty-four; Italy and Mexico four each. Others came from the countries of Europe, England and the Near East. South America had ten graduates.



MORTEN CARLISLE, '90
Who functioned as President of The Technology Clubs Associated at the Eighth Meeting of the federation

Establishment of three new scholastic honors, to be known as the Swope Fellowships, after the donor, Gerard Swope, '95, President of the General Electric Company, was announced by President Stratton. Two of the Swope Fellowships are for students in the Department of Electrical Engineering and carry stipends of $1000 and $500, respectively. The former is for study here or abroad. The third provides $1000 for a student in the Department of Physics for study here or abroad. The first award of these honors was made to Edward D. Wayne, '26, and Joel Tompkins, '26, of the Electrical Engineering Department, and John B. Coleman, '26, of the Department of Physics.

This year's honors list included the award of a John Simon Guggenheim Memorial Fellowship to Dr. Norbert Wiener, Assistant Professor of Mathematics (now Visiting Lecturer at the University of Göttingen). Fellowships were conferred on ten other students whose names and honors follow: Julius A. Stratton, '23, Traveling Fellowship in Mathematics and Theoretical Physics for study abroad; Bertram E. Warren, '24, Malcolm Cotton Brown Fellow for study abroad; Shepard Vogelgesang, '26, Traveling Fellowship in Architecture; Ralph F. Tefft, G., Dalton Fellow in Chemistry; George R. Rucker, '25, Savage Fellow in Chemistry; Joseph F. Walker, Jr., '25, du Pont Fellow in Chemistry; King E. Gould, S.M. '25, Swett Fellow in Electrical Engineering; Philip K. Bates, '24, Saltonstall Fellow in the Department of Biology and Public Health; David Allen Shepard, '26, Verges Fellow in Chemical Engineering.

The Research Fellowship in Fuel and Gas Engineering, of the Massachusetts Gas Companies and the Boston Consolidated Gas Company, was conferred on Hoyt C. Hottel, graduate student in Chemical Engineering.

The Rotch Architectural Prizes awarded for the highest record at the end of the senior year went to Robert C. Dean, '26, and Frank J. Roorda, '26. The former also received the Student Medal of the American Institute of Architects for having the highest record throughout the four years.

FRED W. MORRILL, '07
Presiding officer of the Club in Cincinnati

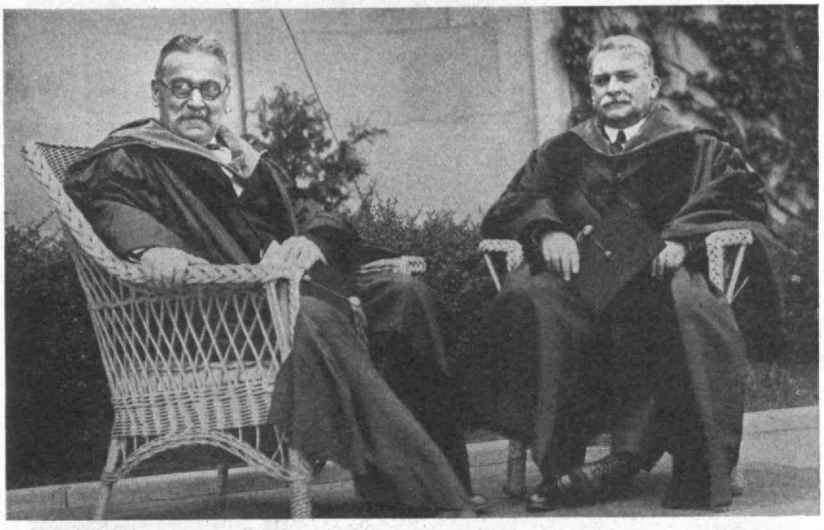
STUART R. MILLER, '07
Chairman of the Smoker at the Hotel Alms

DESPITE the lure of beach or mountain and thoughts of vacation by those who have studied throughout autumn, winter and spring, the Institute is on a twelvemonth production basis and in the

rooms ranged about du Pont Court students retrieving fallen academic fortunes or accumulating "futures" in the Summer Session were already hard at their labors when this year's candidates for degrees marched nearby.

In addition to the regular subjects several new ones make their initial bow and blush. For example, a course in Yacht Design and Model Making by Professor George Owen, '94, and a non-mathematical treatment of the fundamentals of the modern theory of electrons by Professor Max Knobel, '19.

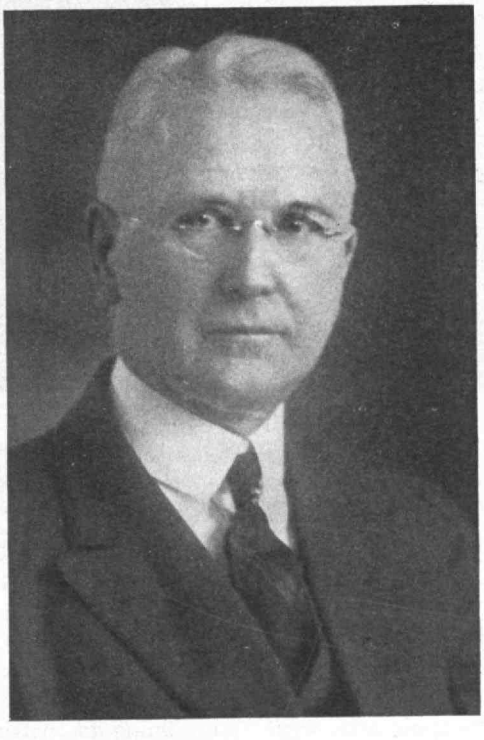
Various courses in methods of teaching for high school teachers are continued and expanded in view of the experience of 1925. These are being given by members of the Institute staff supplemented by such men as Walter F. Downey, Headmaster, Fred R. Miller and Charles H. Stone of the Boston English High School; Joseph R. Lunt, Head of the Science Department of the Mechanics Arts High School of Boston.



PROFESSOR PUPIN AND PRESIDENT STRATTON

Above: The two central figures of the commencement program on June 8, as posed by Frank Colby of The Transcript *that morning in the President's garden. Below: A studio portrait by Notman of the Head of the Course in Electrochemical Engineering, new Dean of Graduate Students, Chairman of the Committee on Graduation, to whom should be accredited the flawless excellence of the arrangements for the graduating exercises*

DEAN HARRY M. GOODWIN, '90



COINCIDENT with press time on the last number of The Review there took place at the Hotel Alms in Cincinnati, Ohio, the Eighth Convention of the federation known as The Technology Clubs Associated. Fred W. Morrill, '07, President of The Technology Club of Cincinnati, the host, called the first session to order on Friday afternoon, April 23, and after a brief address of welcome introduced Morten Carlisle, '90, who functioned as President of The Technology Clubs Associated, in place of Rudolph Tietig, '98, who had been taken ill just previous to the Convention.

Although delegates were present from but about one-fifth of the various Clubs in the continental United States, the gathering of the federation, while disappointing to the Cincinnati Club whose preliminary plans had been formulated with a view to entertaining many more, was productive of considerable discussion and resulted in a practical reorganization by which the member Clubs are to be grouped regionally. How this came about and its significance in view of announcement of the Institute's proposal to establish a series of "regional" freshman scholarships is described in more detail on page 459.

At the Friday evening meeting Thomas C. Desmond, '09, President of The Technology Club of New York, was elected President of the federation; George B. Jones, '05, of Chicago and Arthur S. More, '02, of Rochester, N.Y., Vice-Presidents; Orville B. Denison, '11, of Boston, Secretary-Treasurer. All elections were by unanimous vote. New York City was chosen as the site of the Ninth Convention, the tentative date for which is sometime in May, 1927.

Besides the transaction of business the Friday evening meeting, of which Stuart R. Miller, '07, was in charge, was addressed by Professors Leicester F. Hamilton, '14, Chairman of the Dormitory Board, who described present-day conditions in the Technology housing units, and Warren K. Lewis, '05, Head of the Department of Chemical Engineering, who discussed certain phases of the Institute's relations to industry. Cinema films of the School of Chemical Engineering Practice were then shown as exhibits of certain of the latter's assertions. Mr. Desmond spoke about the project for a National Technology Center in New York and a summary of his proposal, which was unanimously endorsed by the meeting, appears on page 462. The final speaker was H. E. Lobdell, '17, Editor of The Review, who gave facts and figures relating to the last four years of The Review's publication.

Saturday morning and afternoon were devoted to trips to the Columbia Power Company on the Ohio River and to Mariemont, the housing development of

which George L. Mirick, '93, is Managing Director.

Frank W. Willey, '08, of Cincinnati, as toastmaster at the Convention banquet held on Saturday evening, introduced five speakers: Professor Emeritus Robert H. Richards, '68; Professor Samuel C. Prescott, '94; David A. Shepard, '26, President of the Senior Class; President-elect Desmond, and Mr. Denison.

A SCHOOL of engineering in the industries allied to and including the graphic arts has been proposed by a group of leaders who are interested in further development in the technology of their professions. Their project was formally presented to President Stratton on May 11, by a provisional committee of representatives of leading American firms, who in submitting a report on the subject unanimously recommended that the Institute establish a school to train men qualified to lead in the printing and publishing industries. Their report called attention to the fact that the printing industry, although fifth in importance in the United States, has never been developed along scientific or engineering lines by any institution of authority in contrast to the important work of the academies of printing and allied arts in Leipsic, Vienna, Paris and Turin.

In tentatively discussing subjects for instruction in the proposed school, the committee submitted a list covering a broad field, including the graphic arts, with research and instruction in the technology of paper, printing inks, metals, the various processes used in printing, photochemistry, photomechanical materials, electrochemistry, electrotyping, photographic appliances, power transmission, principles of printing presses, composition machinery, bookbinding, lighting, air conditioning, scientific management, including business administration and cost accounting, and the mathematics of printing, as well as cultural subjects.

In discussing the need for training men in printing and publishing, John S. Williams, Production Director of the Curtis Publishing Company of Philadelphia, said there was a great need for technically trained men who would find most attractive opportunities in the graphic arts. Charles F. Hart, Mechanical Superintendent of the New York *Times*, pointed out that nearly every company desires such men and that at present they are sought for in vain.

W. S. Rossiter, President of The Rumford Press, said that while many college graduates were attracted to the printing industry, few now have the proper training to qualify them for the work from the scientific point of view. In this viewpoint William S. Forbes, '93, President of the Forbes Lithographic Manufacturing Company, concurred. Henry L. Bullen of the American Type Founders Company asserted that progress in the printing and allied industries had been retarded through the slow and costly trial-and-error method.

Photo by Times Wide World

RICHARD H. RANGER, '11

Inventor of the apparatus for sending photographs by radio. He is here seen standing by the London transmitter which, as predicted in the last number of The Review, inaugurated a pioneer commercial service between London and New York on May 1. See the story on page 454

SAMUEL HOMER WOODBRIDGE, '79, a retired member of the Faculty, died on Saturday, June 5, at Portland, Conn. He was a graduate of Williams College in the Class of 1873 and studied for three years (1876–9) in the Department of Physics at Technology, becoming an Instructor in that Department in 1884, an Assistant Professor in 1895 and an Associate Professor in 1900. He held this later grade until his retirement in 1914.

While an undergraduate he became practically interested in matters of ventilation because of the atmospheric conditions existing in the crowded class and lecture-rooms, and through his efforts and under his