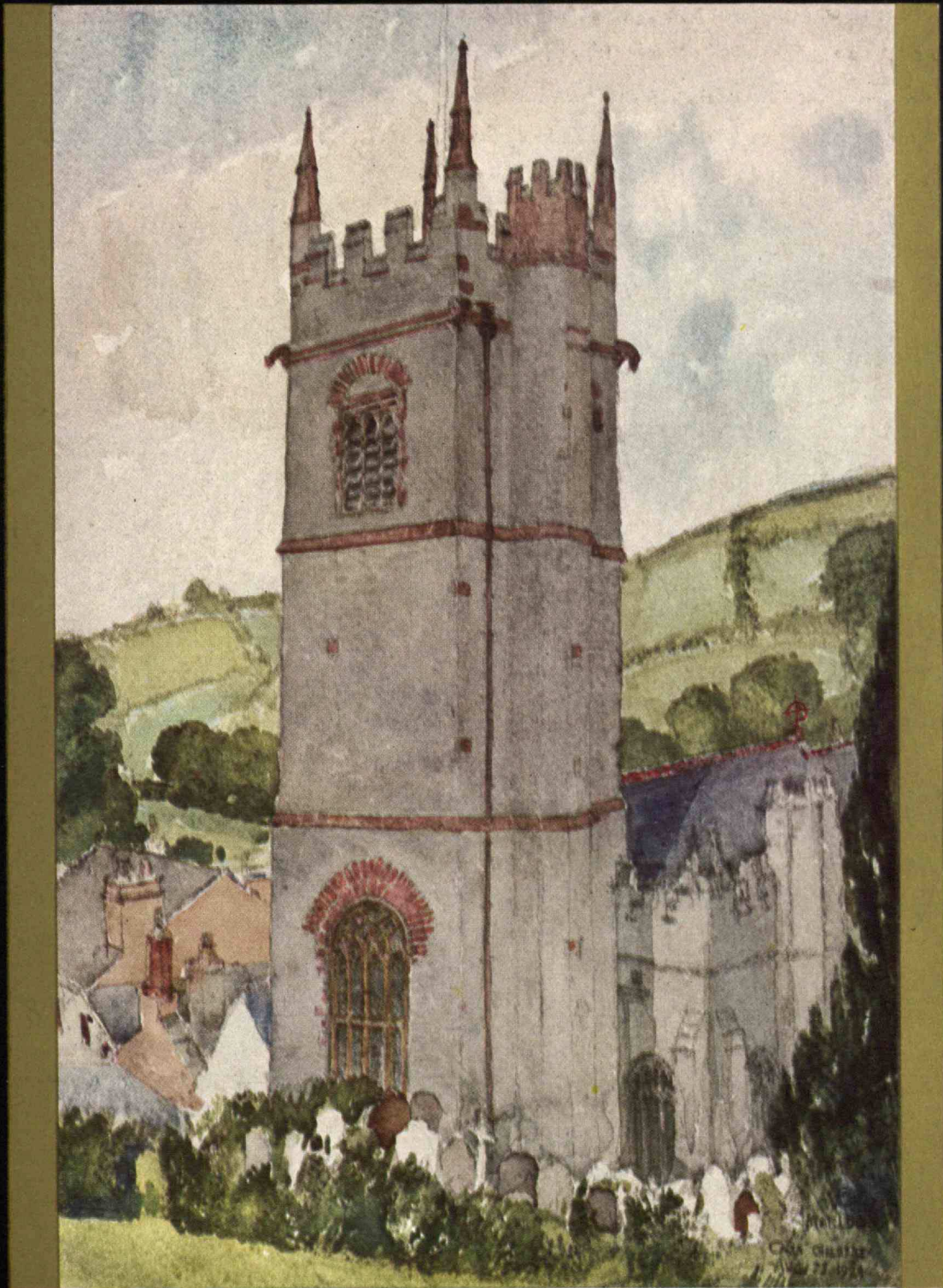


# THE TECHNOLOGY REVIEW

FEBRUARY 1931





# New York State National Bank

ALBANY . . . . . NEW YORK

This building, heated by steam generated by cast iron oil fired boilers, is equipped with Johnson Heat & Humidity Control. The installation consists of 250 Johnson Dual Thermostats, 11 Johnson Model Thermostats and 630 Sylphon Radiator Valves . . . . with wall boxes for future thermostats as required for office additions, extensions, alterations, etc. A Johnson Control Board is in the office of the chief engineer, which is operated to set the thermostats in the building for normal temperature during the day and lower temperature for the night; and in the morning back to normal temperature again . . . . .

. . . . . Henry Ives Cobb, Architect, New York City.



## JOHNSON SERVICE COMPANY

ESTABLISHED 1885

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Denver  
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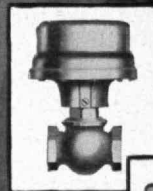
Minneapolis  
New York  
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Each Johnson Installation Made By  
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The All-Metal System.  
The All-Perfect Graduated  
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& Day) Control:  
Fuel Saving  
25 to 40  
per cent  
per year.

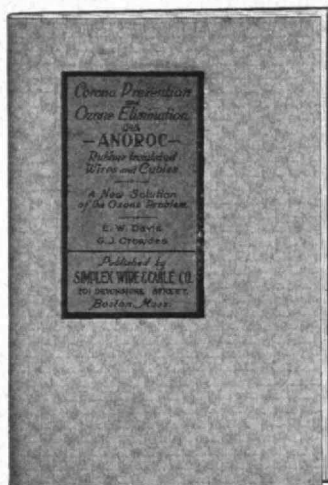


# JOHNSON HEAT AND HUMIDITY CONTROL



**TUSCARAWAS RIVER BRIDGE**  
for Pennsylvania Railroad  
at Gnadenhutzen, Ohio  
Built by  
**McClintic - Marshall**

# "Corona Prevention -and- Ozone Elimination"



"Corona Prevention and Ozone Elimination with Anoroc Rubber Insulated Wires and Cables" is a new and interesting 20 page booklet containing description of tests and giving data on the latest Simplex product, Anoroc Rubber Insulation for high voltage wires and cables.

Anoroc rubber insulation absolutely prevents the formation of ozone in or about a cable at normal operating voltage, making all ozone proof or ozone resisting qualities superfluous. It removes the only objection to rubber insulation for high voltage conductors and retains all of the electrical, chemical and physical characteristics which have made rubber the most adaptable and desirable insulation for cables.

Anoroc rubber insulated cables are designed to meet specific operating conditions and are insulated to stand a 35% over-voltage without danger of corona forming.

The efficacy of this method of protecting cable insulation from ozone has been amply demonstrated by laboratory tests fully substantiated by actual service under operating conditions.

Patent applied for.

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## THE TABULAR VIEW

NICHOLAS MURRAY BUTLER scarcely needs an introduction to the world for he is known both here and in Europe as a prominent educator. His varied activities make an imposing list — too numerous to include in this column. Since 1902 Mr. Butler has been President of Columbia University, from which college he received his bachelor's, master's, and doctor's degrees. His dominant interest is in the field of education, where he is constantly facing the problem of indifference to higher education and prejudice as to its real significance. To quote from his annual report in 1925: "If Abelard came back, he would be confronted with the spectacle of countless numbers of men and women, all hugely pleased with the brightness of their own intellectual illumination, whose minds are blocked to the progress of reason by the barriers of prejudice and fanatical prepossession." ¶ Mr. Butler is aptly called a modern Abelard, confronted as he is with the well-meaning ignorance of an uncomprehending world, and he is ever trying to raise the standards of a people complacently accepting mediocrity for excellence. President Butler's reports are far from a perfunctory annual duty; they represent a valuable, up-to-date survey of conditions in education as they exist today. Although he has written many books, essays, and addresses which are comprehensive in scope, he comes back again and again to certain favorite subjects: democracy and government, philosophy and education, and international peace. His article entitled "Science Endangered" is an excerpt from his report for 1930 as President of Columbia University.

IN THESE days when it is fashionable to abominate royalty, more consideration might well be given to royalty's by-products. The power of royal prestige has been and may be a deciding factor in the introduction of everyday utilities. Let us consider two contributions of royalty to science. The instance described by Professor Williams in his article on page 229 is an example, for aluminum undoubtedly received an impetus toward a greater use by virtue of the glee of the Prince Imperial over a rattle made of it. Another example of royalty's aid to science was recorded in the December Review and sharpens the point — the popularization of chloroform by Queen Victoria's use of it at the birth of Prince Leopold. Royal patronage, we conclude, is a most effective means of advertising. ¶ Dr. ROBERT S. WILLIAMS, the author of "The Evolution of A Baby Rattle," was graduated from Technology in 1902. He received his Ph.D. from Göttingen in 1907 and was connected with the Department of Chemistry from that time until 1927. Since then he has had charge of the Division of Physical Metallurgy in the Department of Mining and Metallurgy. He is a member of the Chemical Society, Mining and Metallurgical Engineers, the American Academy, and the British Institute of Metals.

"INVENTION AND ECONOMICS" by B. ALDEN THRESHER deals with the problem of innovation in its effect upon society, a subject that the current business  
(Continued on page 220)





Thousands of specifications for grinding wheels are necessary to meet the demands of rapid production with precision.

Schooled men in laboratories . . . . . engineers afield . . . . . skill and exacting methods in the grinding wheel manufactory. - - -

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GRINDING WHEELS, GRINDING and LAPPING MACHINES, ABRASIVES FOR POLISHING

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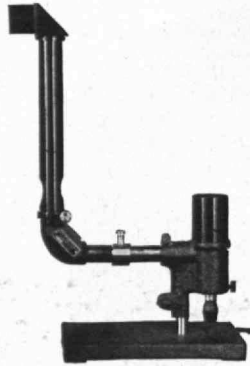
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PULPSTONES, REFRACTORIES, POROUS PLATES, FLOOR and STAIR TILES, ABRASIVE AGGREGATE

---

# BAUSCH & LOMB for PRECISION

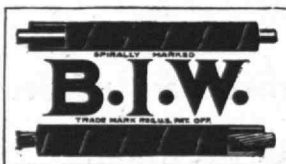
Optical Thickness Gauge—for measuring the wall thicknesses of hollow transparent objects. One of the Bausch & Lomb family of precision instruments for solving the problems of industry.



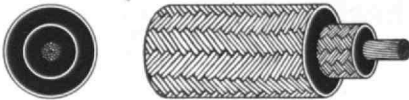
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## GAS TUBE SIGN WIRE INTERLAYER BRAID



U. S. Patent 1458803

INSULATION consisting of heavy wall of high grade rubber.

PROTECTED by a layer of ozone proof compound. INTERLAYER braid of black cotton between the compounds.

COVERED with an outer moisture-proof and flame-proof cotton braid.

A very flexible and serviceable wire for any 15,000-volt continuous service.

APPROVED BY UNDERWRITERS' LABORATORIES

For 25 years manufacturers of high-grade  
rubber-covered wires and cables

**BOSTON INSULATED WIRE  
and CABLE COMPANY**

BOSTON, MASS.

## THE TABULAR VIEW

(Continued from page 218)

depression has given real immediacy. Elmer Davis in a recent letter to the Editor of the *New York Times* remarked: "Classical economics, again, tells us that if men are laid off because of an improved process, the saving will lead indirectly to the creation of new jobs somewhere else to take care of them. But every corner has its apple seller already. Till applied social science catches up with applied physical science, every improvement in the mechanics of living is a disaster for somebody and somebody's wife and children." ¶ Economists have been too arbitrary in assuming that invention is always helpful, for the subject has not been studied sufficiently. Mr. Thresher points out that there is a specific demand for systematic analysis of the economic effects of this principle of innovation in relation to modern life. The world looks to research on a scientific basis to predict the trend of results and to help solve this serious problem. This means that the economist must acquire the engineering as well as the financial attitude. ¶ Mr. Thresher was graduated from the Institute in 1920. For seven years he was engaged in engineering, executive and research work in textile, paper products and food products industries. In this connection he has contributed various technical articles from time to time to the *Textile World*. An active interest in economics led him to study further in this field beginning in 1927, and he received his master's degree from Harvard University the following year. Before becoming an instructor in the Department of Economics at the Institute in 1929, he held the Henry Lee Memorial Fellowship in Economics at Harvard University.

HAROLD E. LOBDELL, '17, is publisher of The Review and Dean of Undergraduates at M. I. T. His extensive study of railroad speeds answers questions one so often hears posed: what are the fastest trains, and are American trains as fast as those in Europe? Dean Lobdell is rapidly becoming an expert railroad statistician, an accomplishment to which few of us can aspire, but which all of us severally admire.

THE book reviewer for this issue is DR. JAMES A. TOBEY, who has been a frequent contributor to The Review. In November, 1929, he wrote the article about human longevity, "Forestalling Death," and in March, 1930, he contributed the article entitled "Business Discovers Health," showing how commerce employs science to aid public well-being. Dr. Tobey, who was graduated from Technology in 1915, has been very active in the service of the National Health Council. He has also served as health officer of Summit and West Orange, N. J., as representative of the State Department of Health, scientific assistant with the United States Public Health Service, and has been connected with the Sanitary Service of the Red Cross. During the war he was first lieutenant in the United States Army Sanitary Corps. In 1922 he was admitted to the Bar of Washington, D. C. As a result of his studies he has written many articles and books, be-

(Concluded on page 222)

**The** TRADE MARK **Brasscrafters**

## Mirrors of Lasting Brilliance

Mirrors scientifically silvered by the new "EVALAST\*" process —brilliant—permanent. Guaranteed to withstand climatic and atmospheric moisture. Thoroughly tested and approved by United States Navy.

PLATE I  
SILVERED BY THE USUAL PROCESS

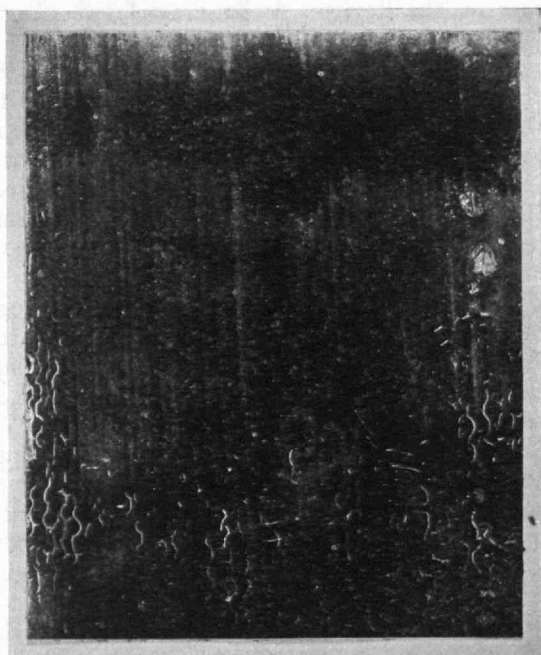


PLATE I — The deterioration, so apparent in the streaks, crazes, and dullness, is common in mirrors silvered by the usual process. Mirrors so affected may be found everywhere — in homes, on ships, institutions, and public building installations.

PLATE II  
SILVERED BY THE "EVALAST" PROCESS

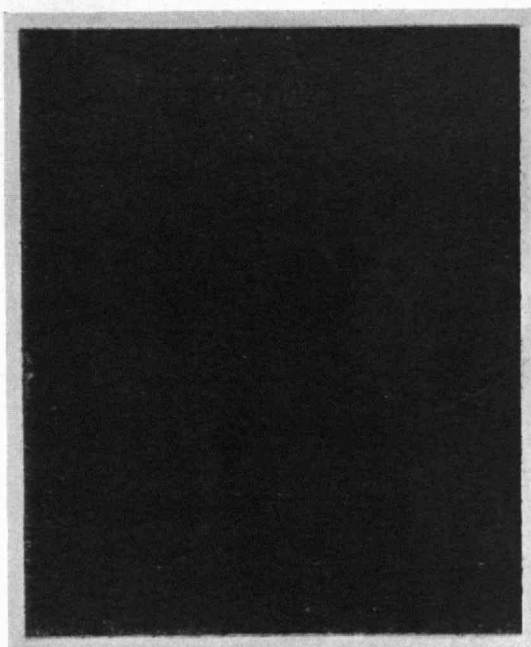


PLATE II — Shows, in comparison with Plate I, much better than word description can, the perfection and freedom from the usual deterioration which are guaranteed to you when you buy and install the BRASSCRAFTERS' "EVALAST" Mirrors and Medicine Cabinets.

*These illustrations were made from actual photographs (without retouching) of specimens of mirror plates which were submerged constantly in water for over eight months, except for occasional inspection, and demonstrate graphically the action of silver under atmospheric moisture when applied by the usual process and by the "EVALAST" Process.*

### *Science Specifies Brasscrafters' "Evalast"*

Architects, contractors, builders and home owners will find our Handbook "O" on mirrors and medicine cabinets of valuable assistance when considering new building projects or renovations.

**J. P. EUSTIS MANUFACTURING CO.**

**The** TRADE MARK **Brasscrafters**

*Originators and Manufacturers of Metal Frame French Plate Mirrors, Metal  
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## THE TABULAR VIEW

(Concluded from page 220)

sides being Associate Editor of the American Journal of Public Health. In 1930 he became Director of Health Service of The Borden Company in New York.

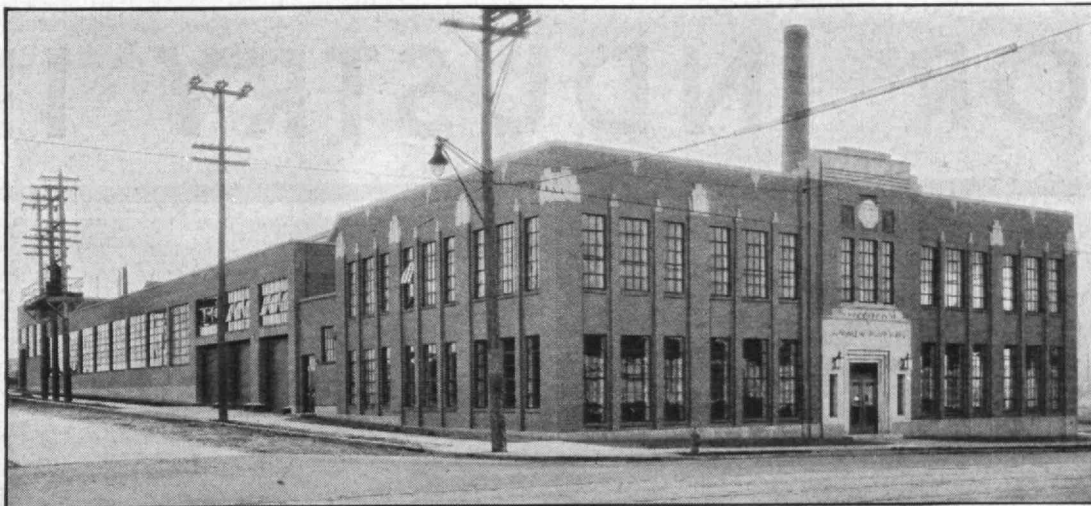
TO HUXLEY has been attributed the remark that six monkeys set to pound unintelligently for millions of millions of years on typewriters would be bound in time to write all the books in the British Museum. The reverse operation of this law of probability unfortunately applies to the appearance of errors in magazines and books. To its unescapable operation (we would, of course, admit no other reason) may be attributed those errors which appear in The Review. As an example we point to the biographical note on Mr. Harold B. Warren in this column last December. Mr. Warren was never a Professor of Landscape Architecture at either the Institute or Harvard University, but instead he was for a good many years instructor in Drawing and Water Color in the Schools of Architecture and Landscape Architecture at Harvard University, from both of which positions he has just retired.

ON THE 126th birthday of William Barton Rogers, the founder of Technology, a tablet was dedicated to his memory. LAUREN B. HITCHCOCK describes these impressive exercises in this issue of The Review, giving an idea of Dr. Rogers' activities at the University of Virginia. Professor Hitchcock took the course in Chemical Engineering at the Institute, graduating in the Class of 1920, and in 1927 he obtained his master's degree. At the present time he is an Associate Professor in the school of Chemical Engineering at the University of Virginia.

THE water color reproduced on the cover of this issue was executed by CASS GILBERT, '80, in 1924. It pictures Marlton Church in England, the church of his ancestors. Mr. Gilbert has achieved world-wide distinction as an architect, being particularly well known as the designer of the Woolworth Building and as the architectural advisor on the new Hudson River Bridge and the Kill van Kull Bridge. He is a member and a director of the American Academy of Arts and Letters. In 1928 he was reelected President of the National Academy of Design.

REQUESTS come to us at intervals for editorial treatment of subjects dear to the hearts of Review readers. One reader, for example, requested a study of the wood pulp situation, a request to which we promptly conceded as indicated by the article on that subject in the December number. At the suggestion of another reader we looked into glass technology in America and "A Sermon on Glass" was the result. With editorial abandon we herewith publicly announce we shall be receptive to all suggestions sent us, providing they fall within the scope of The Review. We are also happy to receive any questions on science and engineering which derive from the reading of the magazine.





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# 60% Increase in Industrial Construction...

WE ARE now doing 60% more construction work for industrial companies than we were a year ago, indicating that many manufacturers are taking advantage of present favorable construction conditions to build replacements and new plants.

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Our services as construction engineers—to execute both engineering design and construction or to build from the plans of other engineers or architects—are available to those contemplating new manufacturing, warehouse or power facilities.

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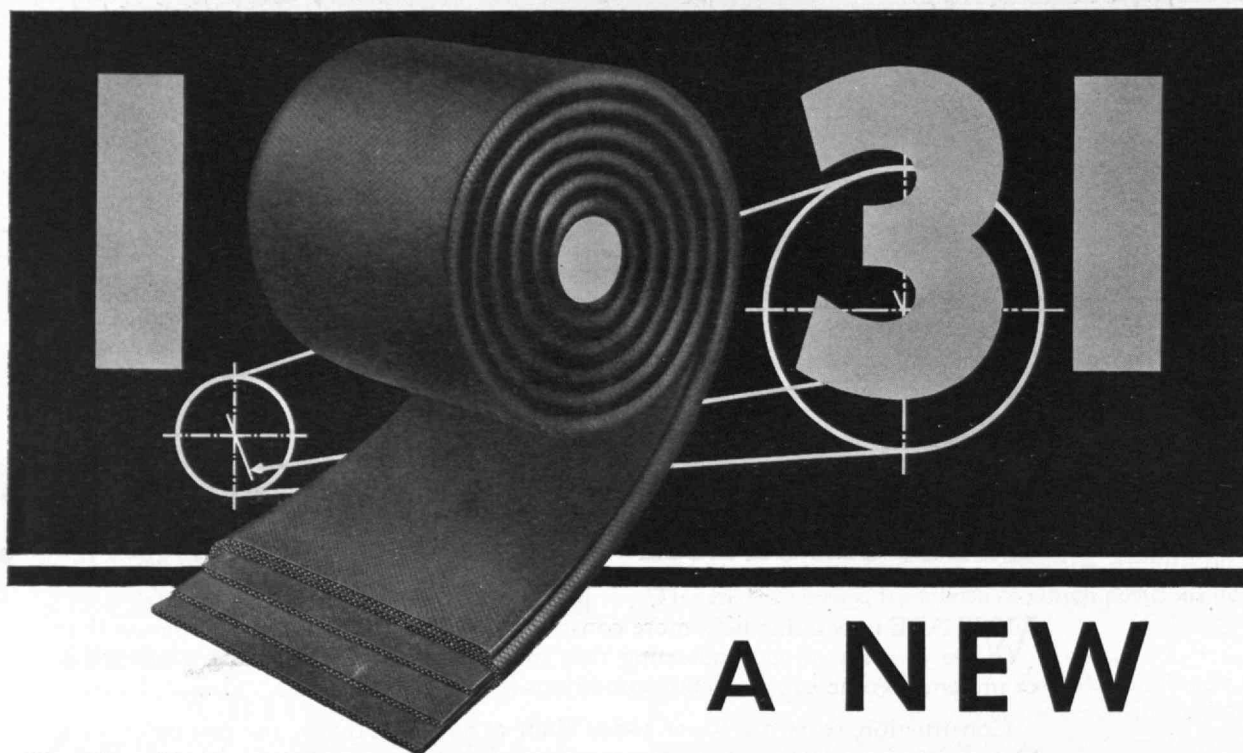
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# FOR INDUSTRY IN



## A NEW GOODYEAR TRANSMISSION BELT

Sixteen months ago Goodyear announced in these pages the development of a new type of endless belting—Compass—a nearly stretchless belt of cord—the first major improvement in belt design in 50 years.

Within a few months Goodyear had made a second major improvement in belting—a new Goodyear belt for a modern machine drive—Goodyear Emerald Cord Multiple "V" Belt.

Today Goodyear announces the GOODYEAR THOR BELT, SEAMLESS—a 1931 belt produced for all

standard requirements in industrial belting.

This latest Goodyear development is covered on the edges by a splitless and seamless envelope. The new belt is protected from fraying under constant shifting and from tearing along a seam—all the advantages of "raw edge" construction plus high durability in a protected edge. The new Goodyear belt

is made of strong silver-duck, cushioned and firmly bound between plies with rubber. It holds at the fasteners. It tirelessly takes up the shocks of changing machine loads. It delivers

a constant flow of power. The perfect belt for textile machinery—the powerful belt for rock crushers.

All Goodyear Mechanical Rubber Goods are specified to work by the G.T.M.—Goodyear Technical Man. He will place the Goodyear Thor Belt, Seamless, successfully in work for you—fit it to your own requirements for economy, profits, and power.

To learn about Goodyear developments in Belting, Industrial Hose, Molded Rubber Goods, or Packing, just write to Goodyear, Akron, Ohio, or Los Angeles, California, and ask the G.T.M. to call.

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