

The Knowledge Bank at The Ohio State University
Ohio State Engineer

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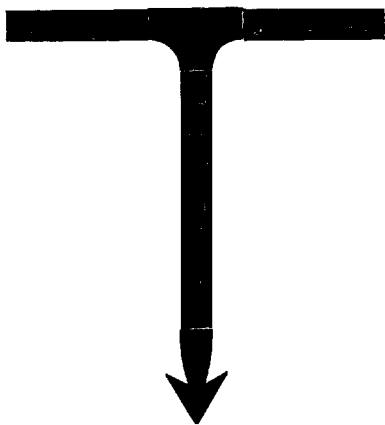
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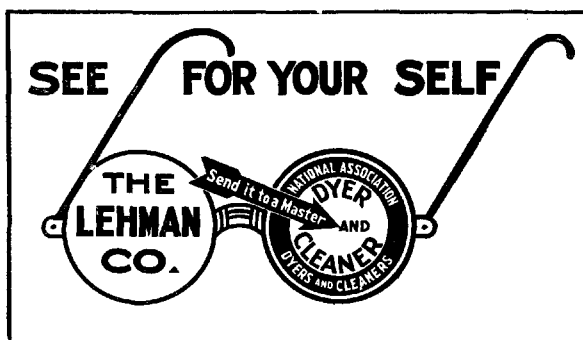
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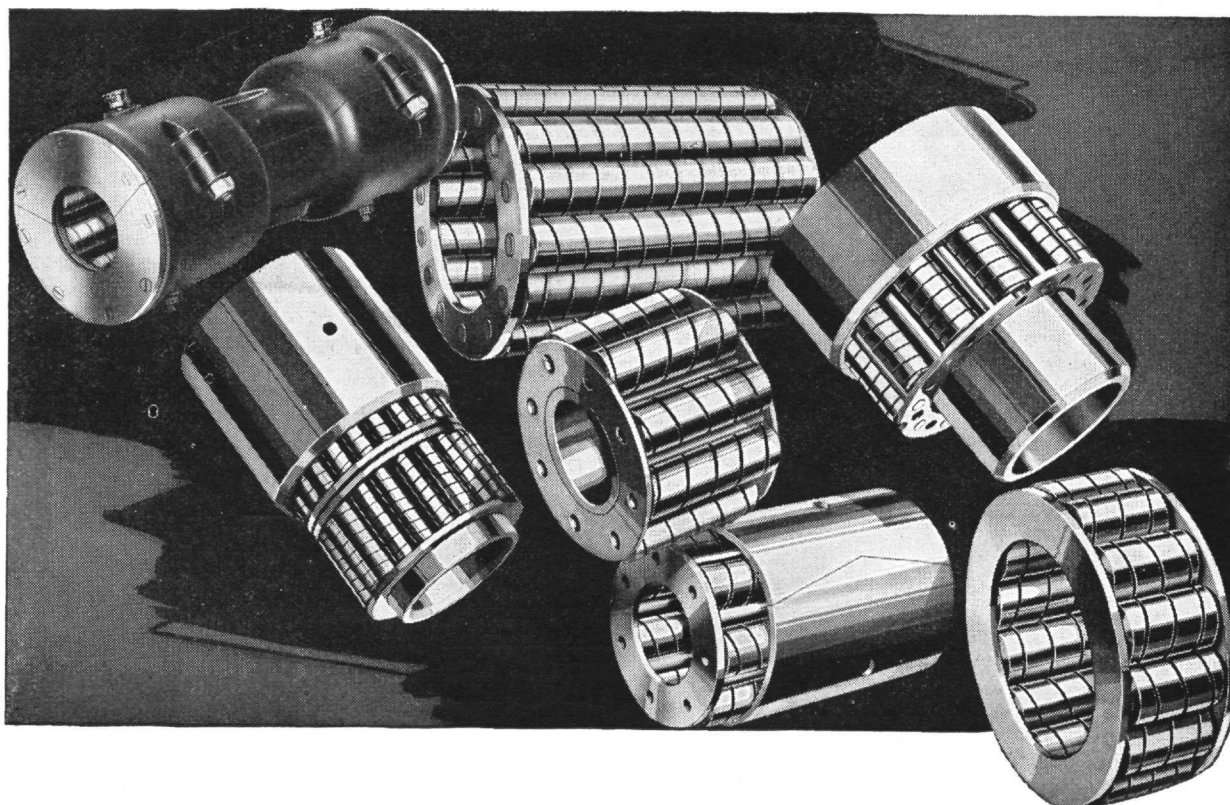
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Hyatt Roller Bearings are used the world over. They are installed in numerous types of equipment—manufacturers representing over forty different industries include them as standard in their products.

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Their application in lift trucks, trailers, etc., has increased the load pulling capacity of workmen.

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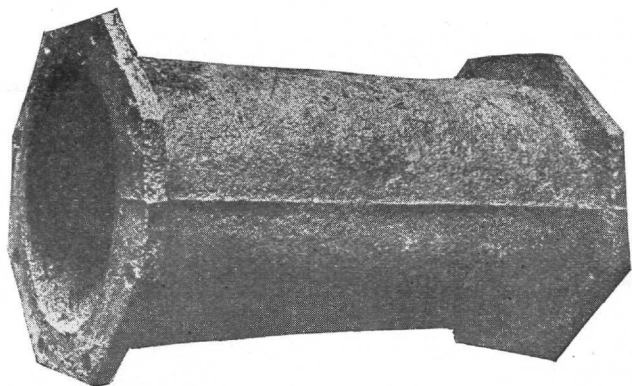
guard against breakdowns and delays.

Textile machinery, line shafts, contractor's equipment, conveyors, etc., operate at maximum capacity for longer periods and at less expense when easy turning Hyatts are substituted for the rubbing friction of ordinary bearings.

In nearly every country on the globe, Hyatt equipment is selected when constant dependable service must be assured. For thirty years and more, the use of Hyatt Roller Bearings has been expanding. You, perhaps, will some day assist in extending their use. When that time comes, the resources of Hyatt are at your disposal. *Hyatt Roller Bearing Company, Newark, N. J.*

HYATT

ROLLER BEARINGS



Still in Service After 250 Years

A HUNDRED years before Napoleon was born, before his wars scourged Europe, before the French Revolution raged, this Cast Iron Pipe was laid, in the reign of Louis XIV, to supply water to the fountains of Versailles.

To the patient researches of M. Blanc, Chief Inspector of the Water Service of Versailles and Marly, into dust-covered volumes in the garrets of the Palace of Versailles, we owe the proof of its antiquity.

A report from the Director of the Water Service, M. Blanc's chief, says: "From their actual state of preservation, which is excellent, excepting the assembly iron bolts, these conduits seem to be able to furnish service for a very considerable time longer."

The high resistance of this Cast Iron Pipe to corrosion may be judged from the clearness of the fine "parting line" produced by the old horizontal method of casting.

THE CAST IRON PIPE PUBLICITY BUREAU
Peoples Gas Building, Chicago

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Our new booklet, "Planning a Waterworks System," which covers the problem of water for the small town, will be sent on request



Send for booklet, "Cast Iron Pipe for Industrial Service," showing interesting installations to meet special problems



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The destructive enemy of sheet metal is *rust*. It is successfully combated by the use of protective coatings, or by scientific alloying to resist corrosion. Well made steel alloyed with Copper gives maximum endurance. Insist upon

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Keystone Copper Steel gives superior service for roofing, siding, gutters, spouting, culverts, flumes, tanks, and all uses to which sheet metal is adapted—above or below the ground. Our booklet *Facts* tells you why. We manufacture American Bessemer, American Open Hearth, and Keystone Copper Steel Sheets and Tin Plates.

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Our Sheet and Tin Mill Products represent the highest standards of quality, and are particularly suited to the requirements of the mining, engineering, and general construction fields. Sold by leading metal merchants. Write nearest District Office.

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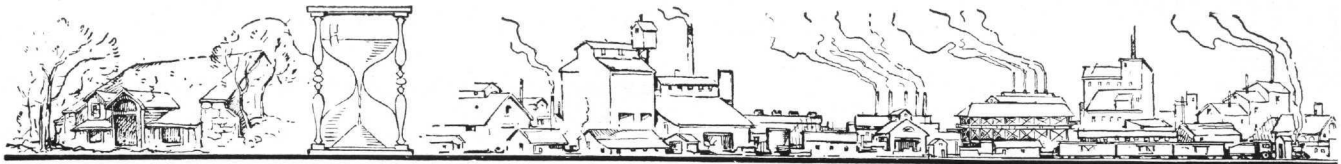
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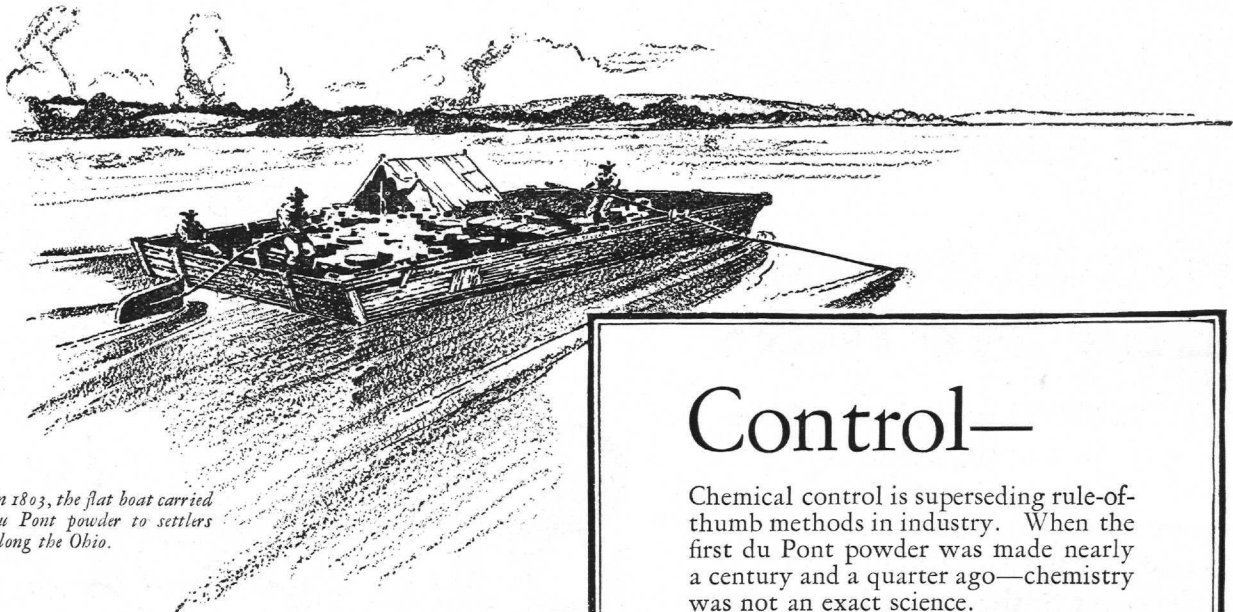
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MAKERS OF POWDERS SINCE 1802



In 1803, the flat boat carried du Pont powder to settlers along the Ohio.

Control—

Chemical control is superseding rule-of-thumb methods in industry. When the first du Pont powder was made nearly a century and a quarter ago—chemistry was not an exact science.

Today, the chemical engineer with the vast resources of modern science at his disposal controls production from raw material to finished product.

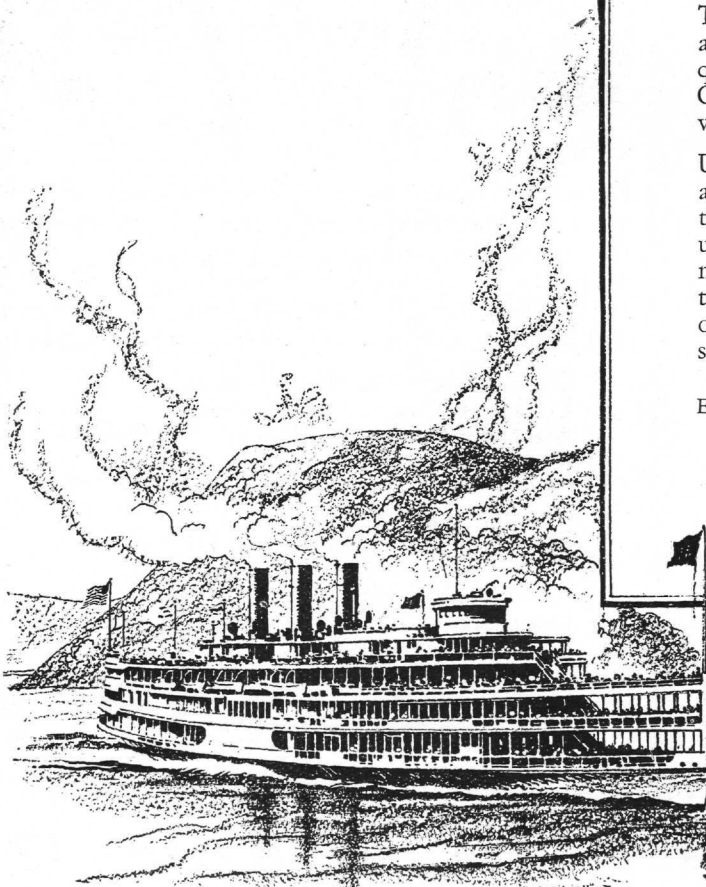
To chemical control, through research and experiment, is due that unvarying quality which makes the "Du Pont Oval" a symbol of excellence everywhere.

Under the du Pont name is published a practical and authoritative work—the "Blasters' Handbook." It is being used by instructors and students in many of our leading technical institutions throughout the country. A copy of the "Blasters' Handbook" will be sent free upon request.

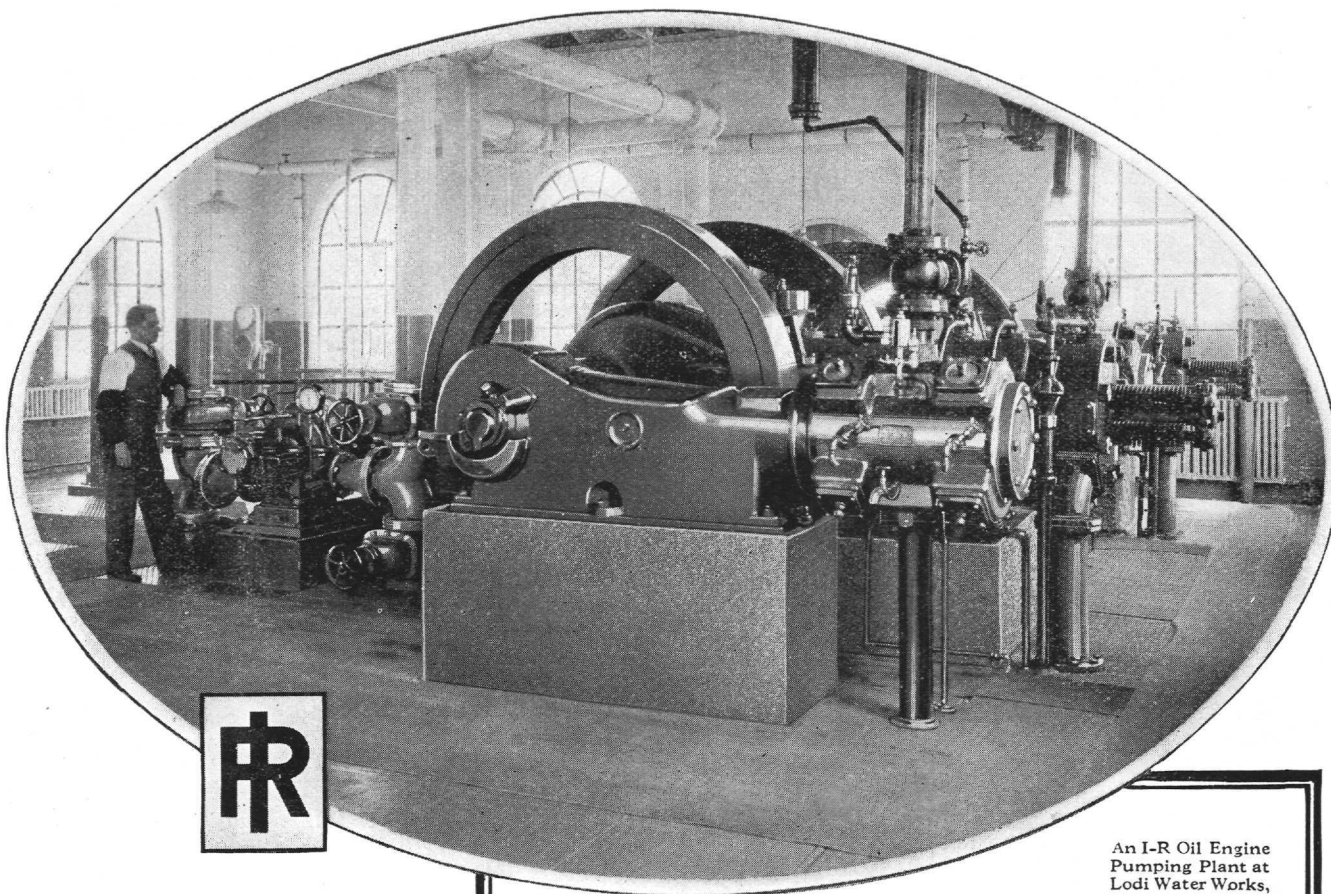
E. I. DU PONT DE NEMOURS & CO., Inc.
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Today, du Pont explosives are used to improve channels and so contribute to the safety of navigation on our great inland waterways.



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Pumping Plant at
Lodi Water Works,
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COMPRESSORS

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TIE TAMPERS
CAMERON PUMPS

VACUUM PUMPS
CONDENSERS

AIR LIFT PUMPS
AIR HOISTS
OIL & GAS ENGINES

OIL-ELECTRIC
LOCOMOTIVES

Selecting the Job and the Employer

As Commencement approaches, the college senior reflects on things past and looks forward to the future. He realizes that a man derives his greatest happiness in life from his family, his friends, and his work. He is looking for employment with a concern whose integrity and stability match the high quality of its products.

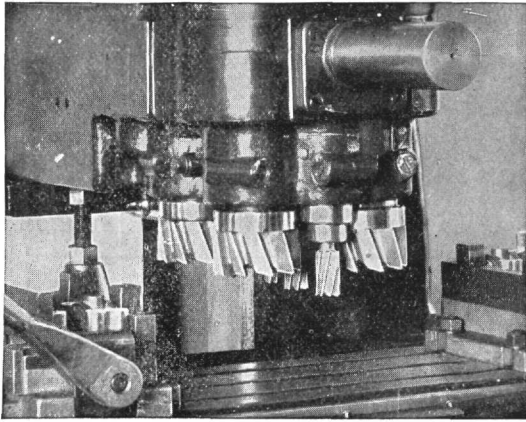
Ingersoll-Rand has long stood as a leader among the manufacturers of compressed air machinery, pumps, condensers, mining and quarrying equipment, and oil engines. For fifty-five years it has been combining the latest advances in engineering with the most careful methods of manufacture—a policy of progress resulting consistently in products of the highest quality. It is continually broadening its field, and its customers are found all over the world.

Among the major factors which have contributed to the stability and success of the Company are: recognition of engineering talent, promotion of superior employees to the highest places in the organization, and a plan of industrial research that has kept its products abreast of the times.

INGERSOLL-RAND CO., 11 Broadway, New York City

Offices in principal cities the world over

Ingersoll-Rand

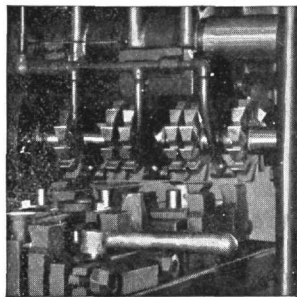


More cuts per minute by adding more good cutters

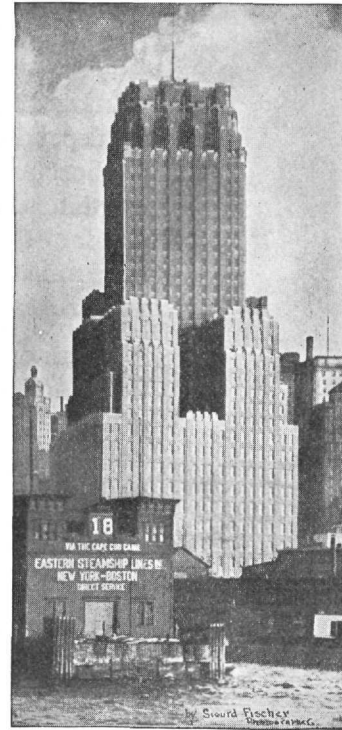
IN the endeavor to achieve quicker and more economical methods in milling, the number of cutters used in a single set-up has tended to increase. This is particularly true of automotive shops where high production is the watch-word.

Two automotive jobs are shown. Above is a Brown & Sharpe Automatic Milling Machine which fairly bristles with cutters. Eight Brown & Sharpe cutters—four Coarse Tooth End Mills and four Spiral Shell End Mills—are used. Below is a view of an operation on a Brown & Sharpe No. 13B Plain Milling Machine in which six Brown & Sharpe Coarse Tooth Side Milling Cutters and three Spiral Shell End Mills (in back) are used.

The advantage of such operations depends largely on the durability of the cutters. Too frequent stops for sharpening or changing cutters are disastrous to the production schedule. As the best insurance of durability, long life, and long service between sharpenings Brown & Sharpe Cutters were chosen for these and many similar jobs.



BROWN & SHARPE MFG. CO.
PROVIDENCE, R. I., U. S. A.



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Brick
PAVEMENTS
OUTLAST THE BONDS

NATIONAL PAVING BRICK MANUFACTURERS ASSOCIATION, ENGINEERS-BLDG., CLEVELAND, OHIO

An Open Letter to John P. Senior

Dear Senior:—

Your campus days are very nearly over but don't let anyone mislead you into thinking that the "gladdest years of life" have also passed. Tackle the job of living with a little gumption and you'll find each succeeding year more enjoyable and satisfying than the year that preceded it.

Your big job in the next few years is to set your standards and erect your reputation. What the world wants to know about you is the soundness of your judgment and the dependability of your performance. Don't take chances on those two points. A clean reputation for solidity, trustworthiness and dependable performance is the goal to aim for. (Your dollar-income at first probably won't total very much under the best of circumstances, so be sure your *reputation-income* is the biggest possible.)

Team up with the best in everything that you handle. Stand for, advocate, fight for the best materials, the best designs, the best construction methods. Don't let your name come to get associated with second-bests, make-shifts and could-have-been-better-with-a-little-more-work-and-thought.

Build your reputation now—your fortune will come later.

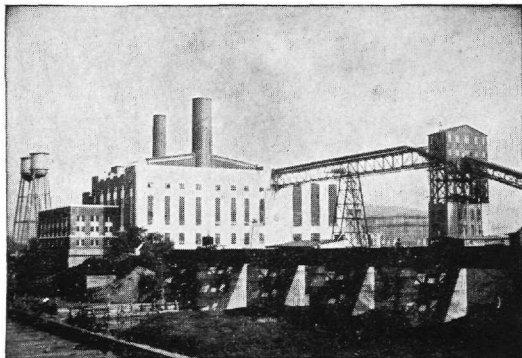
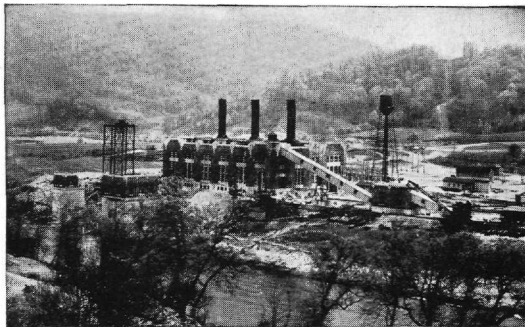
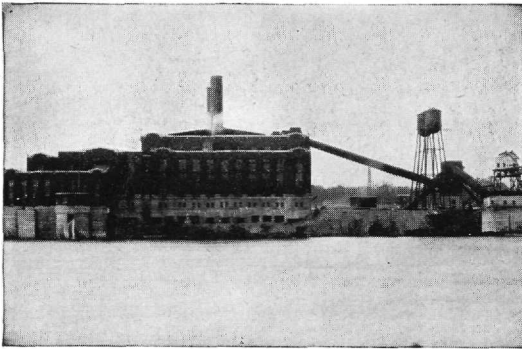
The world doesn't owe you a living but it's ready and willing to pay you handsomely when you have justified it. It's a great world once you have made it respect you.

I've seen a lot of it and I know.

Sincerely yours.

Vitrified Brick

Three Unusual Public Servants



Sargent and Lundy Engineers of these Power Stations

These public utility power stations, constructed by The Foundation Company, are now contributing to the welfare of the communities they serve.

The Power Station of the Columbia Power Company, near Cincinnati, Ohio, contains the latest developments in steam and electrical generation. It has a present capacity of 120,000 H.P. which will be ultimately increased to 480,000 H.P. Ground was broken February 14, 1924, and power was generated December 10, 1925,—such the record for construction.

In the heart of the Kentucky coal fields a steam power plant has been constructed, designed to utilize fuel near its source and transmit electrical energy to nearby industrial centers, including the mines from which the fuel is taken. This \$3,500,000 station of the Kentucky Utilities Company, near Pineville, Kentucky, is a link in a chain of super-power stations in this region.

At Philo, on the Muskingum River in Ohio, is situated a power plant of the Ohio Power Company which has become noted for its economical operation. Located where a navigation dam makes a considerable difference in level in the river, water for condensing is taken above and discharged below the dam without pumping. Unusual efficiency is obtained with the most modern fuel handling machinery in both wet and dry storage.

Power plant construction is a specialty of this organization.

THE FOUNDATION COMPANY

CITY OF NEW YORK

*Office Buildings • Industrial Plants • Warehouses • Railroads and Terminals • Foundations
Underpinning • Filtration and Sewage Plants • Hydro-Electric Developments • Power Houses
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PITTSBURGH
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SAN FRANCISCO
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MONTREAL, CANADA

MEXICO CITY
LIMA, PERU
CARTAGENA, COLOMBIA

LONDON, ENGLAND
BRUSSELS, BELGIUM
TOKYO, JAPAN

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

Buckets of Brawn for Bearings

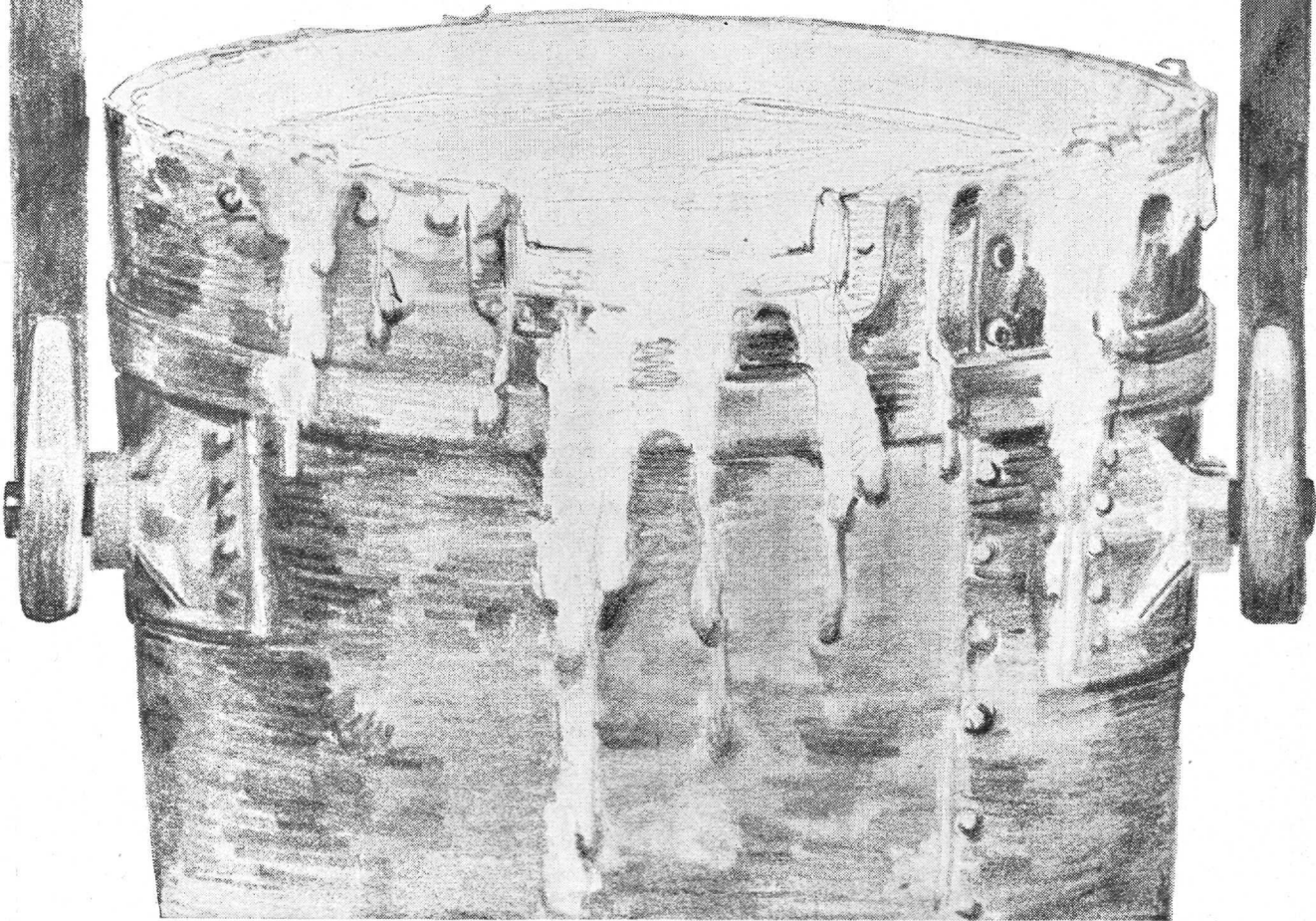
Wherever there is a Timken Bearing in machinery there is a point of hard service. That's just why each bearing is there.

For very vital reasons Timkens are awarded tough jobs in motor cars, trucks, tractors, machine tools, electric motors and other mechanical devices throughout transportation, agriculture, manufacture, and all other divisions of Industry. Timken Tapered design provides for the inevitable "side-thrust" on bearings, which best engineering dare not ignore. Timken positive roll alignment, exclusive, adds to bearing speed possibilities. And only Timken, in its field, produces its own electric bearing steel.

Finest material for the worst work in machinery is assured by the complete, extremely modern Timken steel plant which is part of the great self-contained Timken Bearing industry.

Such resources and facilities could be reared on nothing but the engineering success of some 150,000,000 Timken Bearings. Facing an engineering career, you will be facing the universal preference for machinery designed around Timken Tapered Roller Bearings. It will be well to know Timkens. The little stiff-bound Timken book, sent gratis upon request, will tell you much.

THE TIMKEN ROLLER BEARING COMPANY
C A N T O N , O H I O

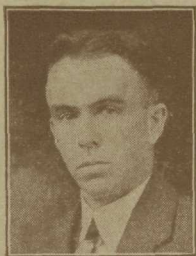


The world's largest producer of electric furnace steel is Timken. In these giant buckets or "ladles," the liquid Timken steel leaves the furnaces to go through all the processes of manufacture, entirely within the Timken plants

TIMKEN Tapered **ROLLER BEARINGS**



They call it the "Pierce Type"



R. T. PIERCE

When the class of '15 at Maine was being graduated, the name "Pierce" meant no more in the field of metering than Sweeney or Jones. Today, however, if you'll talk to such companies as the Detroit Edison Company, The Southern California Edison Company, the Duquesne Light Company, or the United Verde Copper Company, you'll learn that "Pierce" means a type of remote metering, which enables a man in a central dispatcher's office to read the condition of a sub-station several miles away.

Superpower brought in the need for an improved method of remote metering, and R. T. Pierce, Maine '15, in the employ

The question is sometimes asked: Where do young men get when they enter a large industrial organization? Have they opportunity to exercise creative talents? Or are they forced into narrow grooves?

This series of advertisements throws light on these questions. Each advertisement takes up the record of a college man who came with the Westinghouse Company within the last ten years or so, after graduation.



of Westinghouse, devised it. He designed a system that operates on a new and different principle, and that has met with general acceptance in the Central Station field. He also was active in the recent re-designing of the entire Westinghouse instrument line.

It was only a few months after Pierce had completed the graduate student course at Westinghouse that he was given an assign-

ment in the instrument section of the engineering department. He took it merely as a "fill-in" job. Soon he saw that instruments play a vital part in every electrical operation. As an instrument engineer, Pierce spent several weeks on the U. S. S. Tennessee and the Colorado during their trial runs. He has ridden in the cabs of electric locomotives. He is in closer touch with radio than anyone not a radio engineer.

A design engineer comes continuously in contact with sales negotiations, and Pierce's contact with them proved so beneficial that he was lately made head of the Instrument Section of the Sales Department, which means that he really has charge of the sale of all instruments to Westinghouse customers.

Westinghouse





Crows

In a field in sunny Spain stands a stone mortar. Crows hover around it, picking up bits of grain and chaff—cawing.

Here Marcheta, in the fresh beauty of her youth, will come to pound maize. For years she will pound maize. The stone will stand up under the blows; not a dent has the muscle of three generations of women made upon it. But the crows will hurl their black gibes upon a woman aging early and bent with toil. *Old Marcheta*—still in her thirties.

The American woman does not pound maize. But she still beats carpet; she still pounds clothes; she still pumps water. She exhausts her strength in tasks which electricity can do better, and in half the time.

The high ideals of a community mean little where woman is still doomed to drudgery. But the miracles which electricity already has performed indicate but a fraction of the vast possibilities for better living and the tremendous opportunities which the future developments in electricity will hold for the college man and woman.



Electricity, which can release woman from her burdens, has already created a revolution in American industry. Wherever mankind labors, General Electric motors can be found carrying loads, driving machinery and saving time and labor. And there is no branch of electrical development today to which General Electric has not made important contributions.

A series of G-E advertisements showing what electricity is doing in many fields will be sent on request. Ask for booklet GEK-1.

GENERAL ELECTRIC
GENERAL ELECTRIC COMPANY. SCHENECTADY. NEW YORK

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