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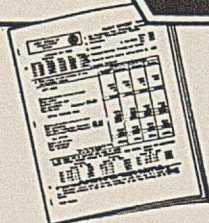
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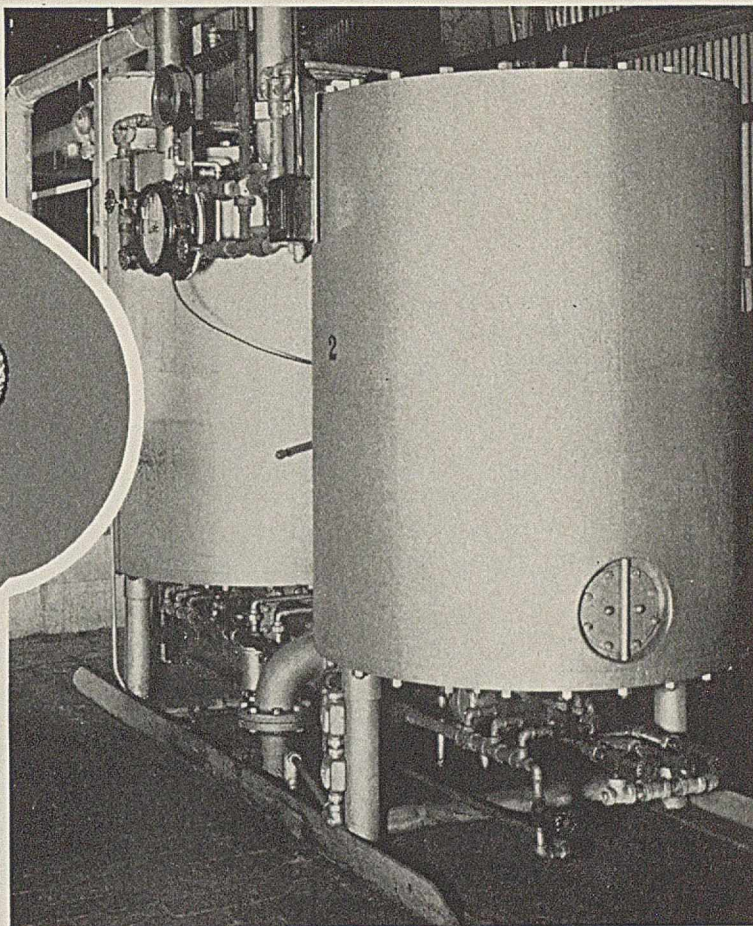
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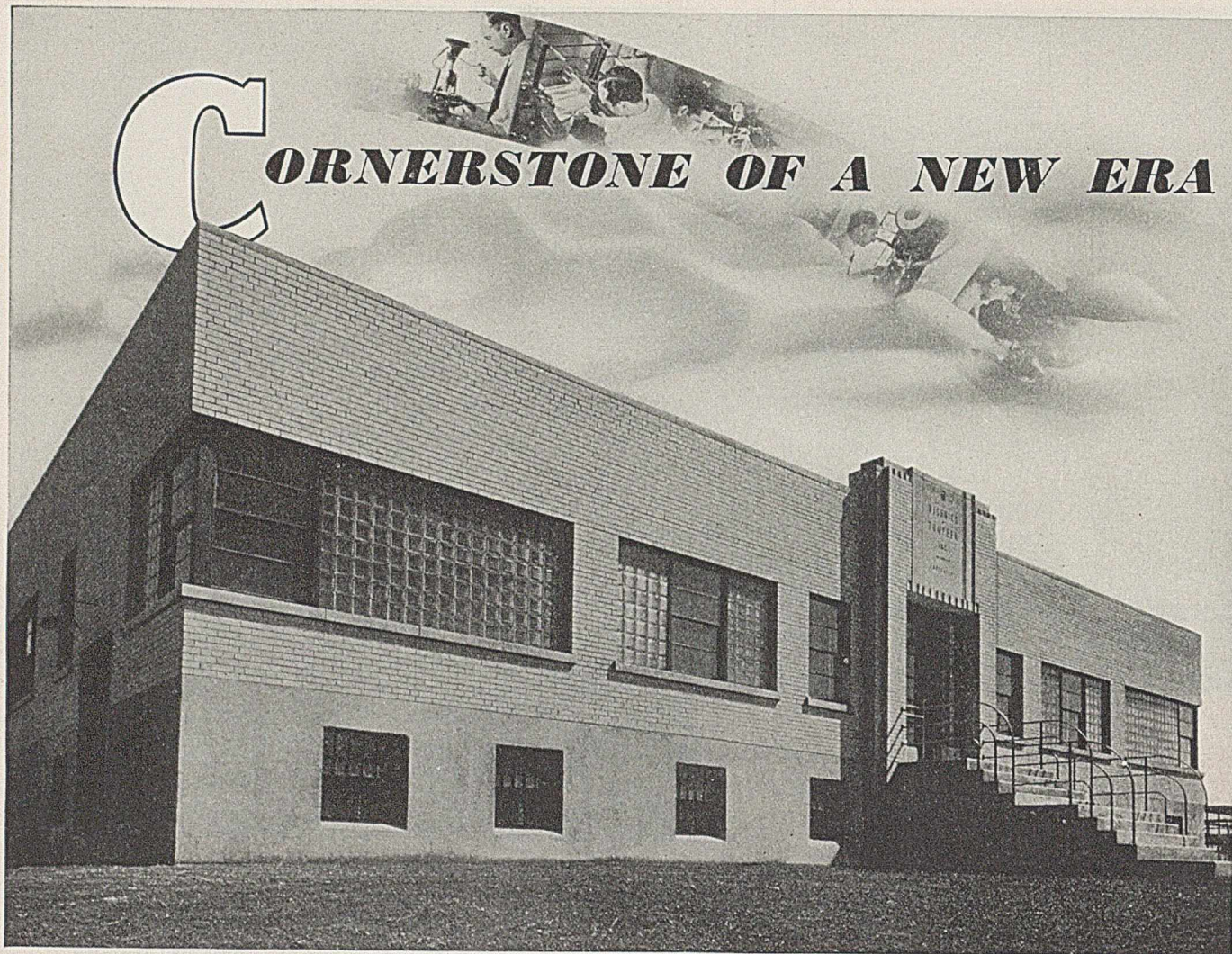
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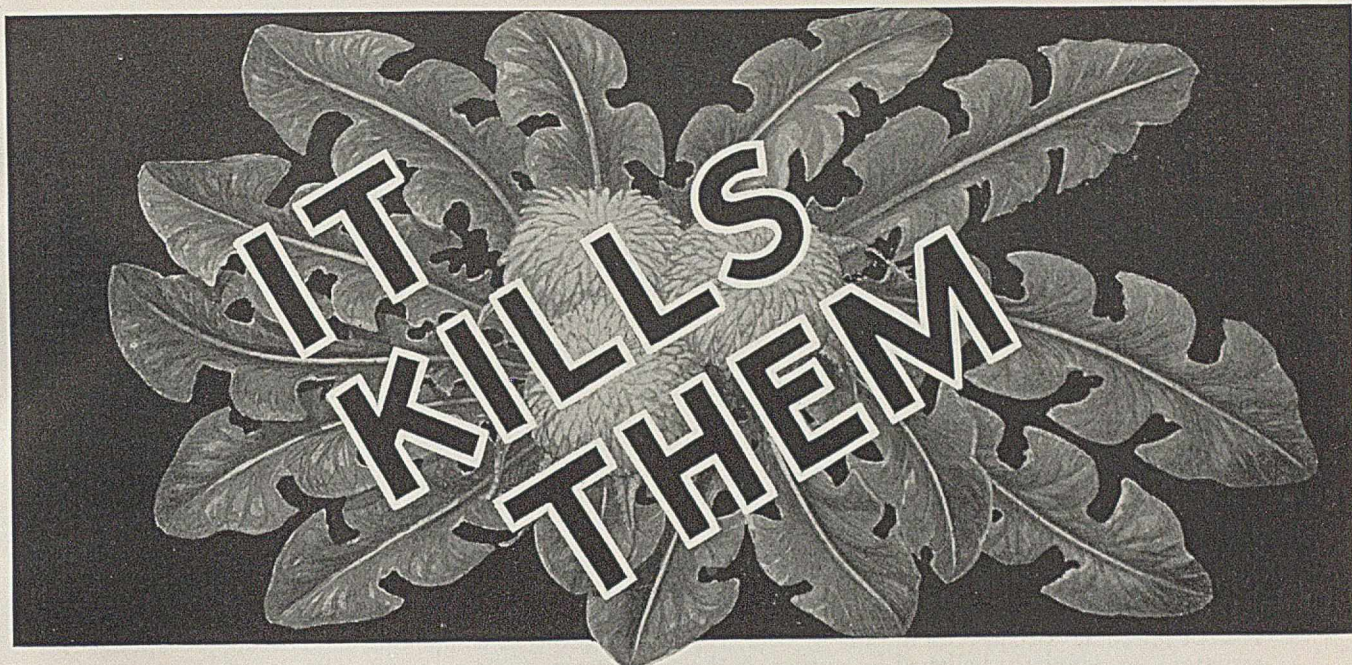
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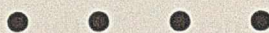
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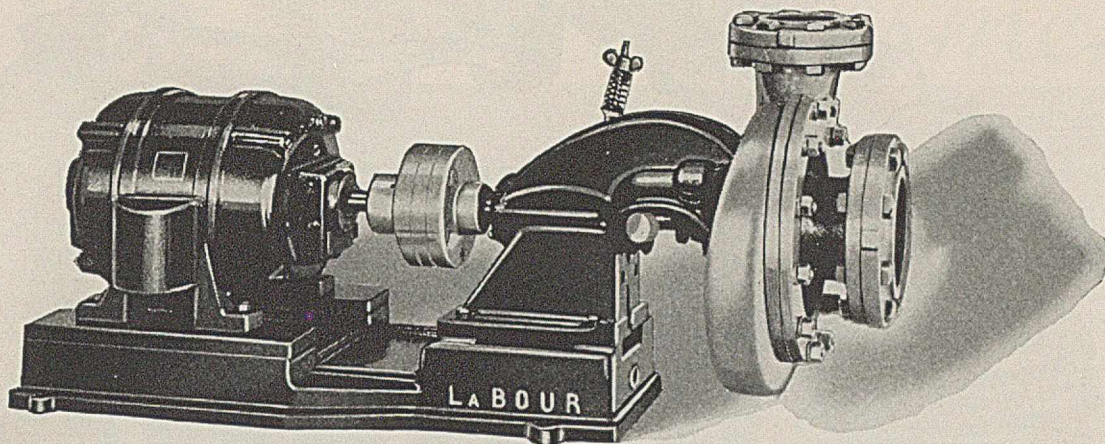
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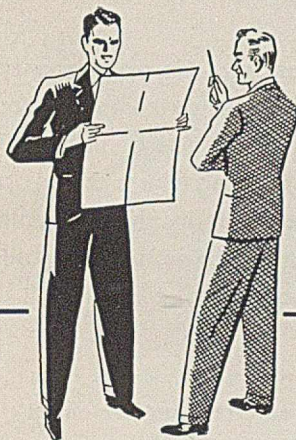
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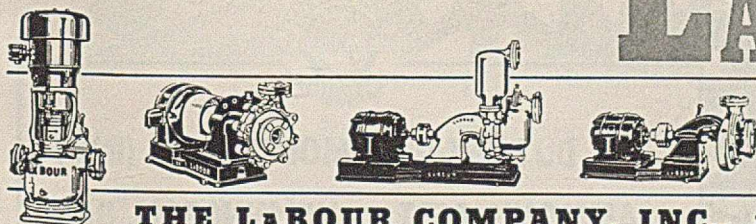
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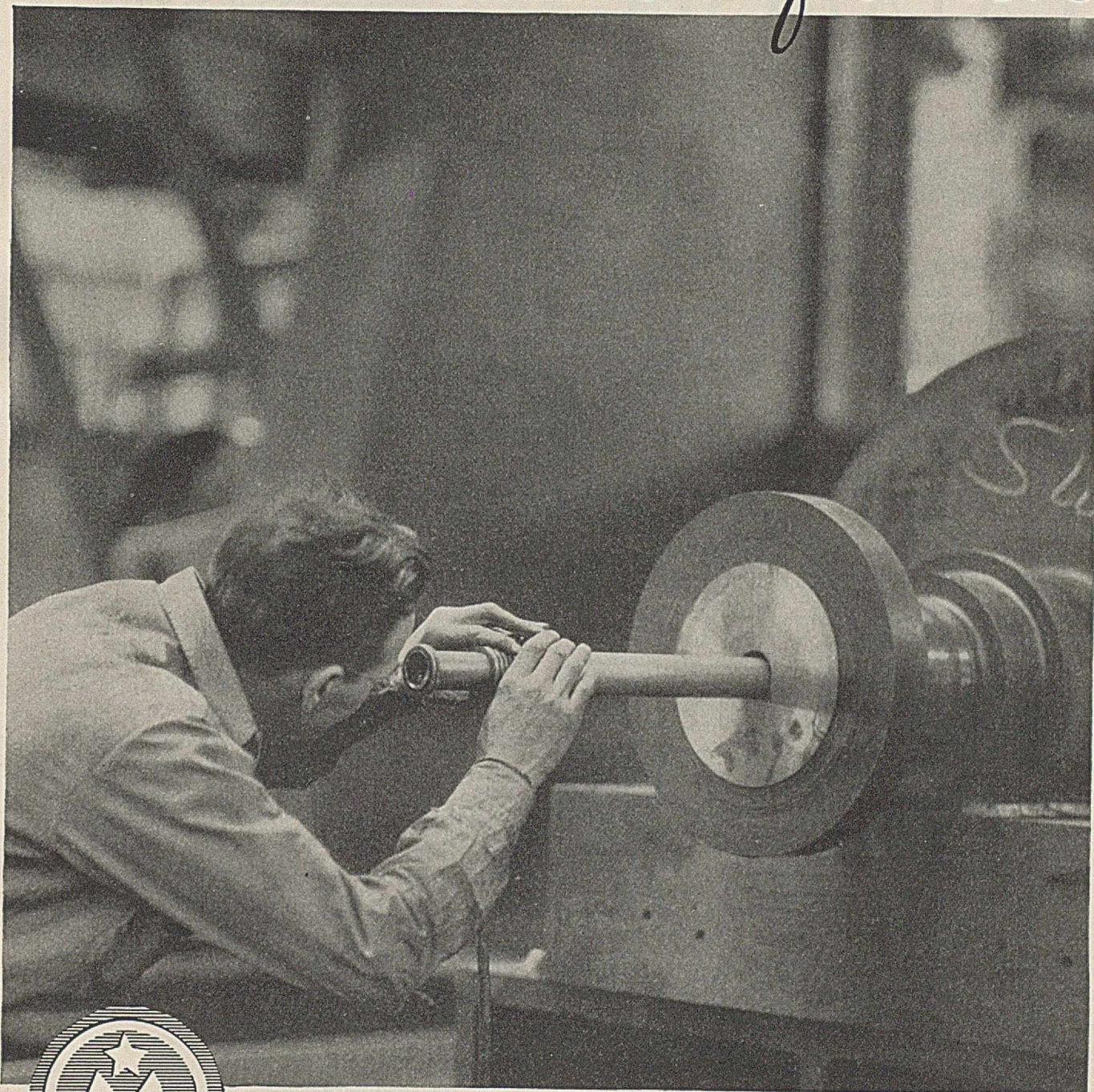
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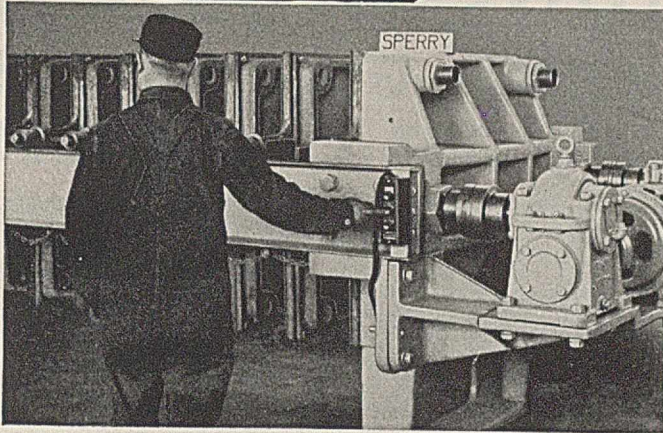
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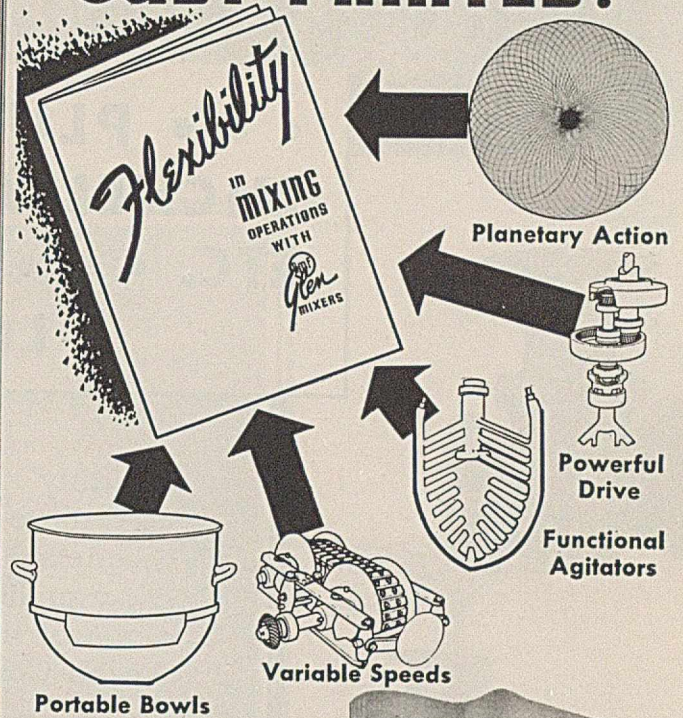
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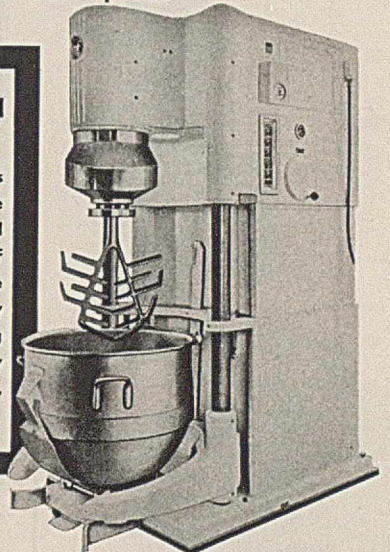
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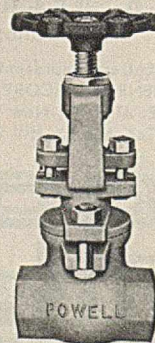
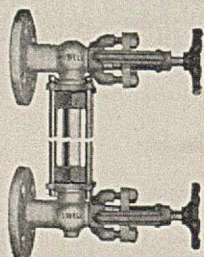
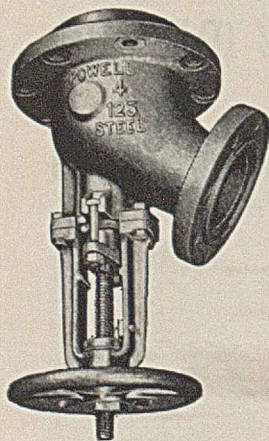
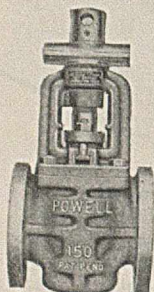
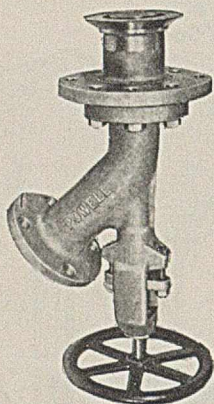
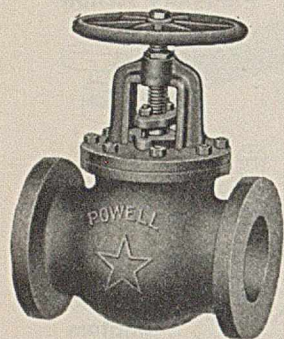
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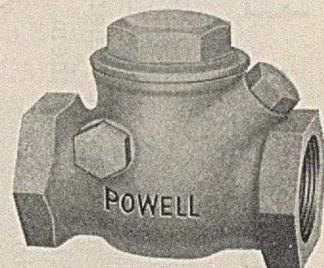
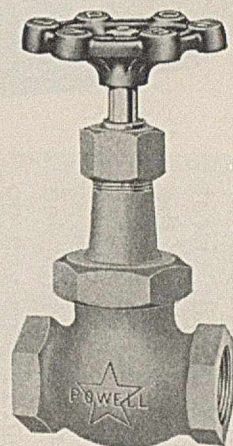
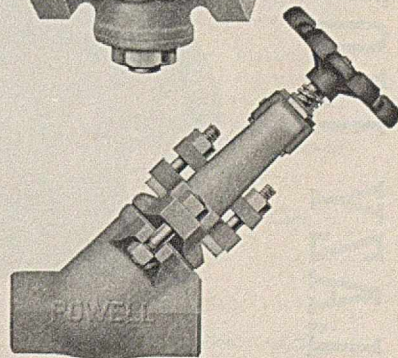
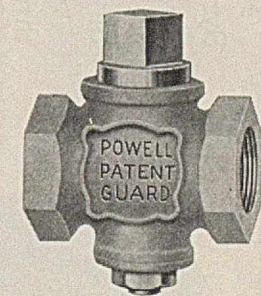
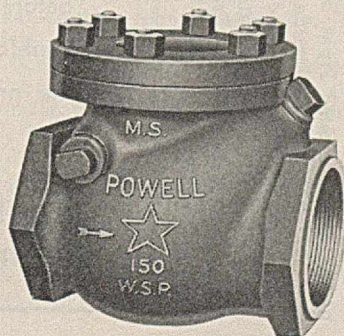
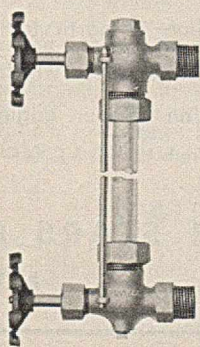
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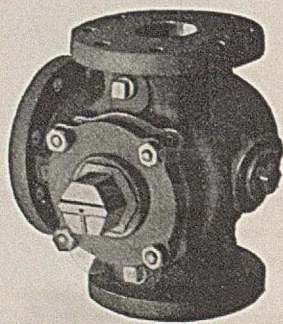
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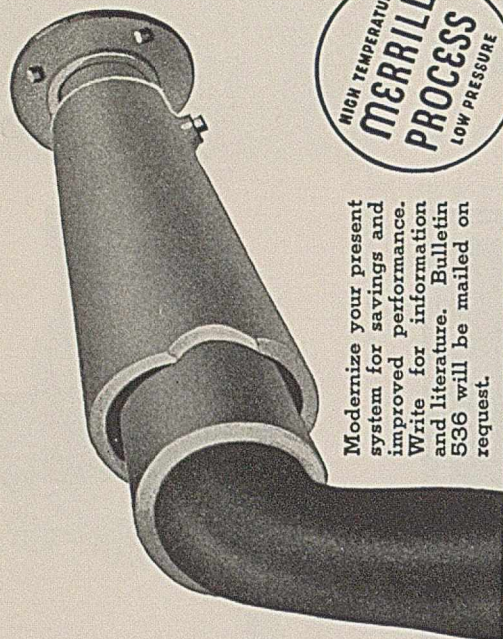
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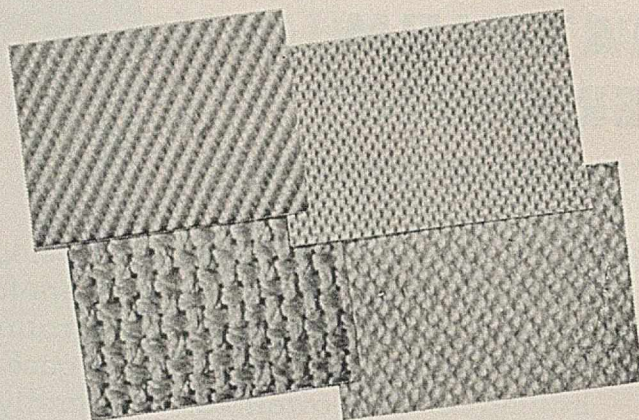
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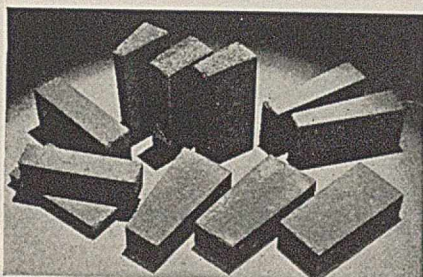
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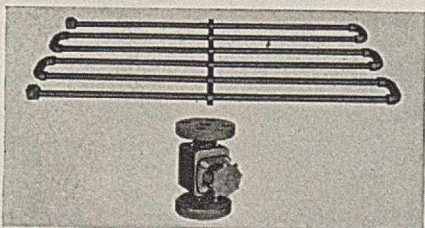
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"Karbate" is a brand of material, of carbon or graphite base, which is impervious to the seepage of fluids under pressure. Graphite and "Karbate" No. 2 have high thermal conductivity and excellent heat transfer properties.

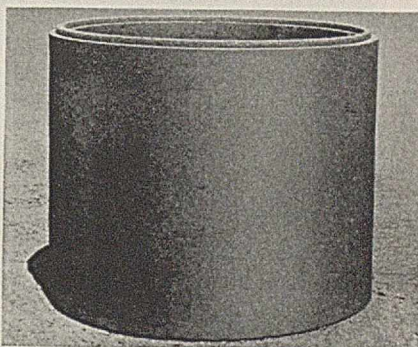


**CONSTRUCTION MATERIALS** — Carbon and Graphite construction materials are available in a variety of forms including brick, flat tile, blocks, beams, tubes and other structural shapes. These products are used for the construction or lining of vats, tanks, towers, digesters and other types of processing equipment because of their high resistance to corrosion and their ability to resist the destructive effects of severe thermal shock. Graphite construction materials are used where high thermal conductivity is needed.



**PIPE, VALVES and FITTINGS** — Carbon, Graphite and "Karbate" pipe and fittings are available in sizes from 1/2 inch to 6 inches I.D. Saunders type valves of "Karbate" construction can also be supplied. These corrosion resistant products are used for the construction of heating coils — both steam and gas-flame types, condensers, evaporators, drain lines and other types of conveying, circulating and

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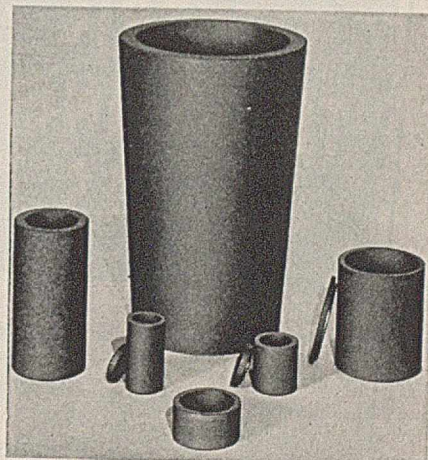


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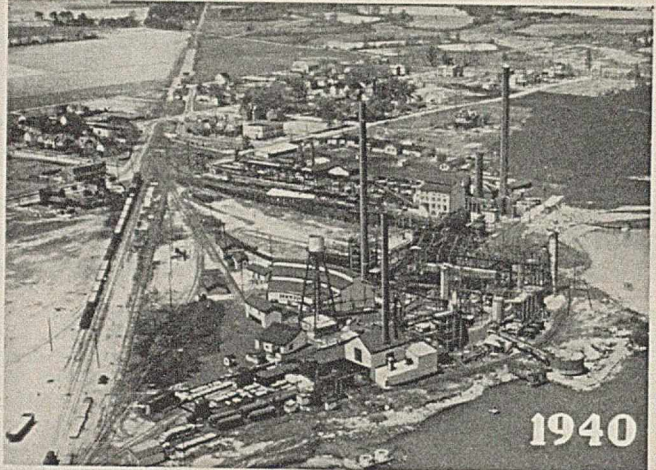
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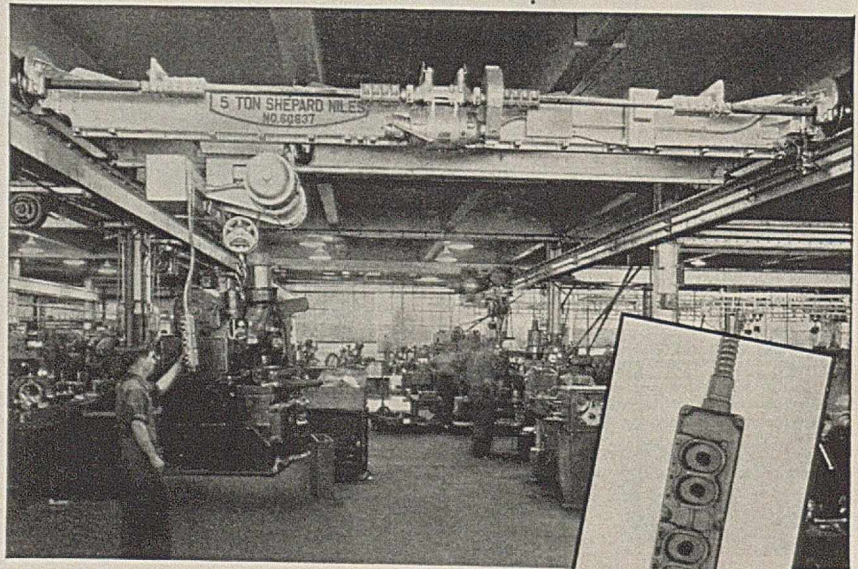
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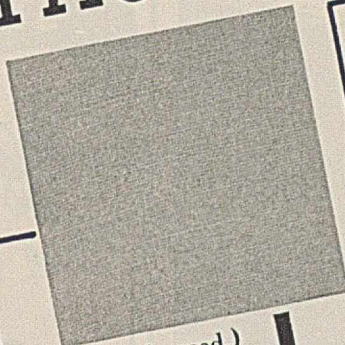
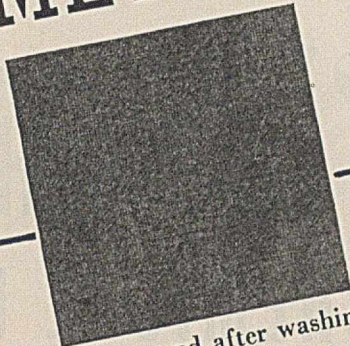
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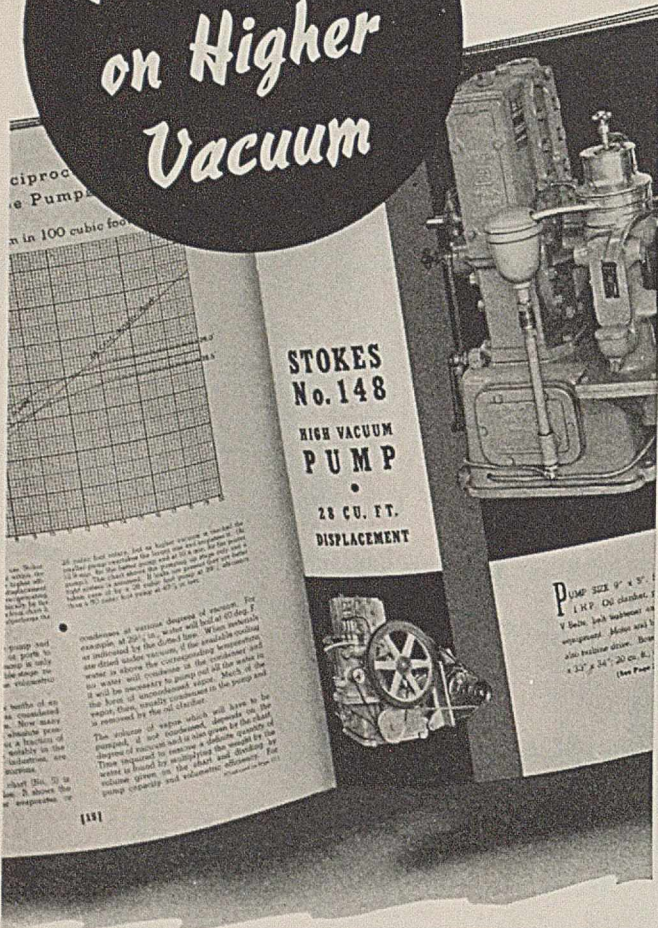
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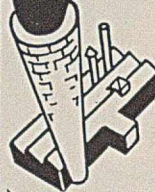
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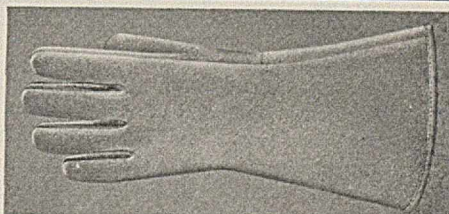
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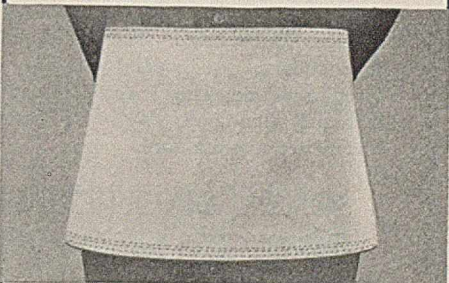
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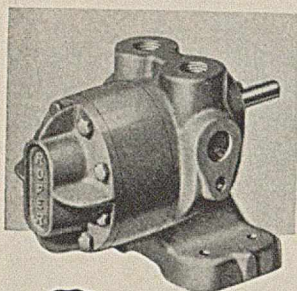
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● For withstanding the paint enemies around chemical plants, nothing can match Dixon's Flake Silica-Graphite Paint. The flat silica-graphite flakes, overlapping like shingles, produce a continuous coating. Graphite, water-repellent and chemically inert, is unaffected by chemical fumes or particles, and sets up no chemical reaction in the metal it protects. Graphite clings with utmost tenacity, has great covering power, spreads easily.

Ten-year-old coatings are common. Eighteen-year-records are reported. For lowest painting cost per square foot per year, paint with Dixon's Flake Silica-Graphite Paint. They are available in fourteen colors, including aluminum. Write for Master Specification No. B1-16 and color card.

JOSEPH DIXON CRUCIBLE CO.  
JERSEY CITY NEW JERSEY



# DIXON'S FLAKE SILICA-GRAPHITE PAINT

Now...in  
**One Step**

**Blending**  
**Pulverizing**  
**No Separating**  
**No Bolting**

Speedy and thoro pulverizing in a single step—that's the One Step Mikro-Pulverizer. One pass thru the mill generally results in a finished product—pulverized and blended; no bolting or separating necessary.

Dustless operation without fans or cyclones. Astonishing savings in time and labor. Large and small units. Performance guaranteed.

Write for new 32-page catalog.

PULVERIZING MACHINERY COMPANY

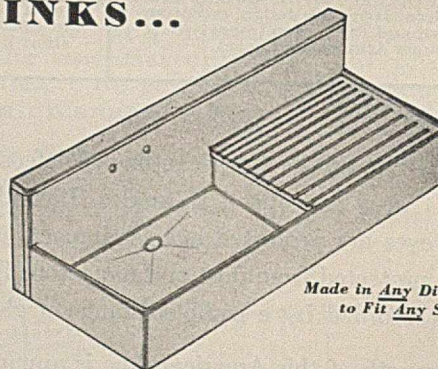
135 Valley Road  
Roselle Park, N. J.

# MIKRO-PULVERIZER

REG. U. S. PAT. OFF.



## ALBERENE STONE COVERED-CORNERED SINKS...



Made in Any Dimensions  
to Fit Any Space

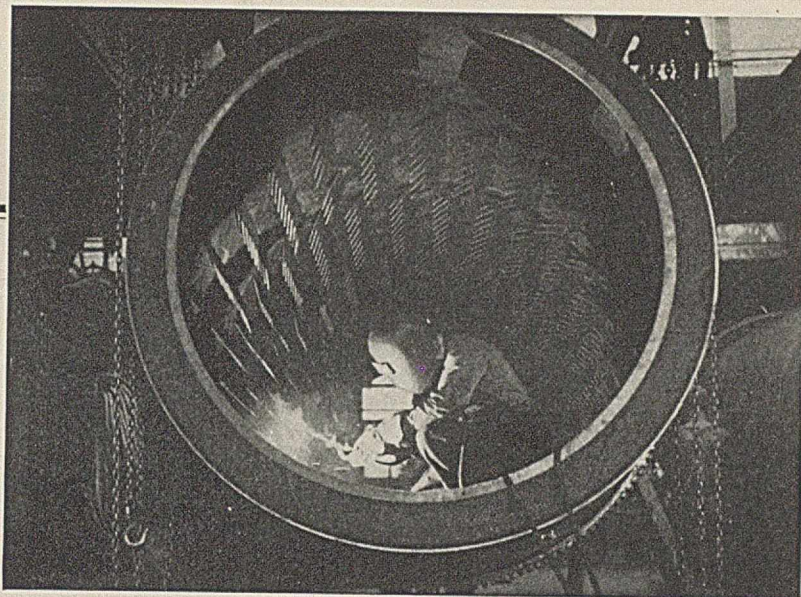
Coved-corner Sinks can be furnished in carefully selected hard stone as well as in the standard medium grade stock.

In common with other Alberene Stone Sinks, the Coved-corner Sink can be supplied in any sizes or dimensions required to fit any space. Inasmuch as we have no standard size sinks, the making of sinks to your specified sizes does not involve additional cost to you.

The coved-corners add the last word in ease of cleaning to the other recognized advantages of Alberene Stone Sinks.

## ALBERENE STONE CORPORATION OF VIRGINIA

419 FOURTH AVE., NEW YORK • Quarries and Mills at Schuyler, Va.



← Photo at left shows Hersey Dryer being constructed by Electric Weld

**SINCE  
1873**

## **HERSEY'S BEEN BUILDING DRYERS**

**BUT THE 1940 HERSEY DRYER HAS THE ENGINEERING, THE CONSTRUCTION AND THE HIGH EFFICIENCY THAT INDUSTRY DEMANDS TODAY**

During this year Hersey has built one or more Dryers for the following products—

BERRY WASTE  
CERELOSE  
CELLULOSE ACETATE  
NAPHTHOIC ACID  
POTASSIUM NITRATE  
POTATO STARCH  
SALT  
SODIUM NITRATE  
SUGAR

The total list of different products dried in Hersey Dryers is five times the number listed above.

The Hersey Pilot Plant and engineering ability are at your disposal. Write for catalog and information sheet.

**HERSEY MANUFACTURING CO.**  
South Boston  
Massachusetts

# DEFEATING CORROSION AND CONTAMINATION WITH PLATINUM-CLAD

**T**HE extraordinary ability of platinum to resist the action of chemical agents is so well known as to need no comment and its use in large scale industrial installations would be commonplace were it not for the prohibitive cost of solid platinum for such purpose.

With the perfecting of Baker Platinum-Clad, its use in this field has been enormously enlarged and has engaged the attention of chemical engineers everywhere.

Platinum-Clad is pure platinum or an alloy of platinum so securely bonded to a base metal body that they may be fabricated like a single piece of metal. The gauge of the platinum can be specified to suit the case. Thus a platinum surface is provided to either protect the base metal from corrosive action or to insure the product, in process of manufacture, from contamination.

Platinum-Clad is made in sheets and tubing with platinum upon one or both surfaces, and in wire. Some suggested uses are:

Kettles  
Heating and Cooling Tubes  
Storage Tanks for Chemicals and Essential Oils  
Anodes for Electro-Chemical Processes

Tubing for Conveying Corrosive Liquids or which are to be immersed in such liquids  
Gaskets  
Rupture and Safety Discs

Why not let us send you our booklet, *Platinum Metals and the Chemical Industry?* It is highly informative.

**BAKER & CO., INC.**

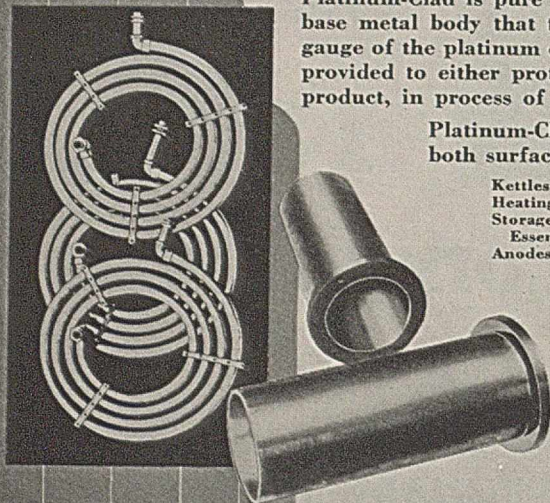
SMELTERS, REFINERS AND WORKERS OF PLATINUM, GOLD AND SILVER

113 Astor St., Newark, N. J.

NEW YORK

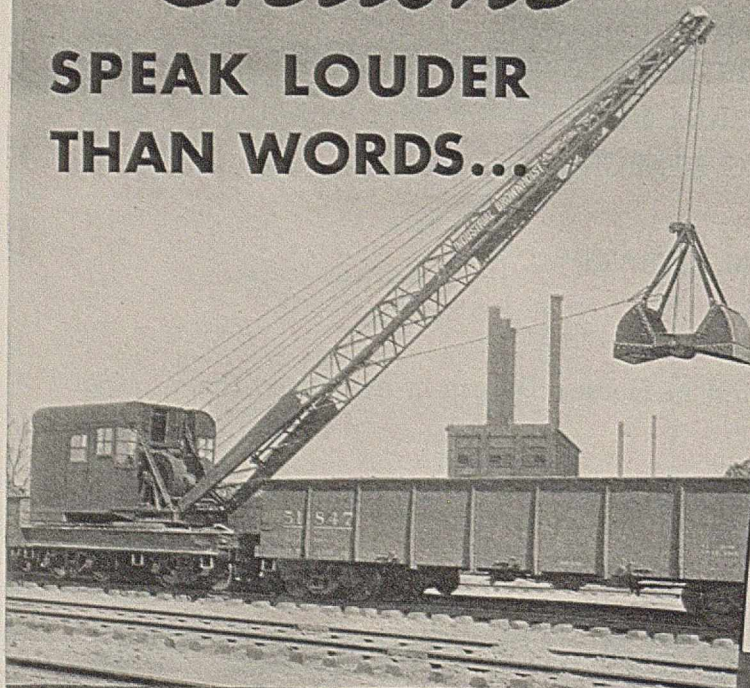
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CHICAGO



## Actions --

### SPEAK LOUDER THAN WORDS...



"Over 12,000 hours of steady operation in hard steel plant service before even a bushing was replaced...using an average of 1.675 gallons of oil per hour...the crane was in service 24 hours per day a large part of this time."

.....

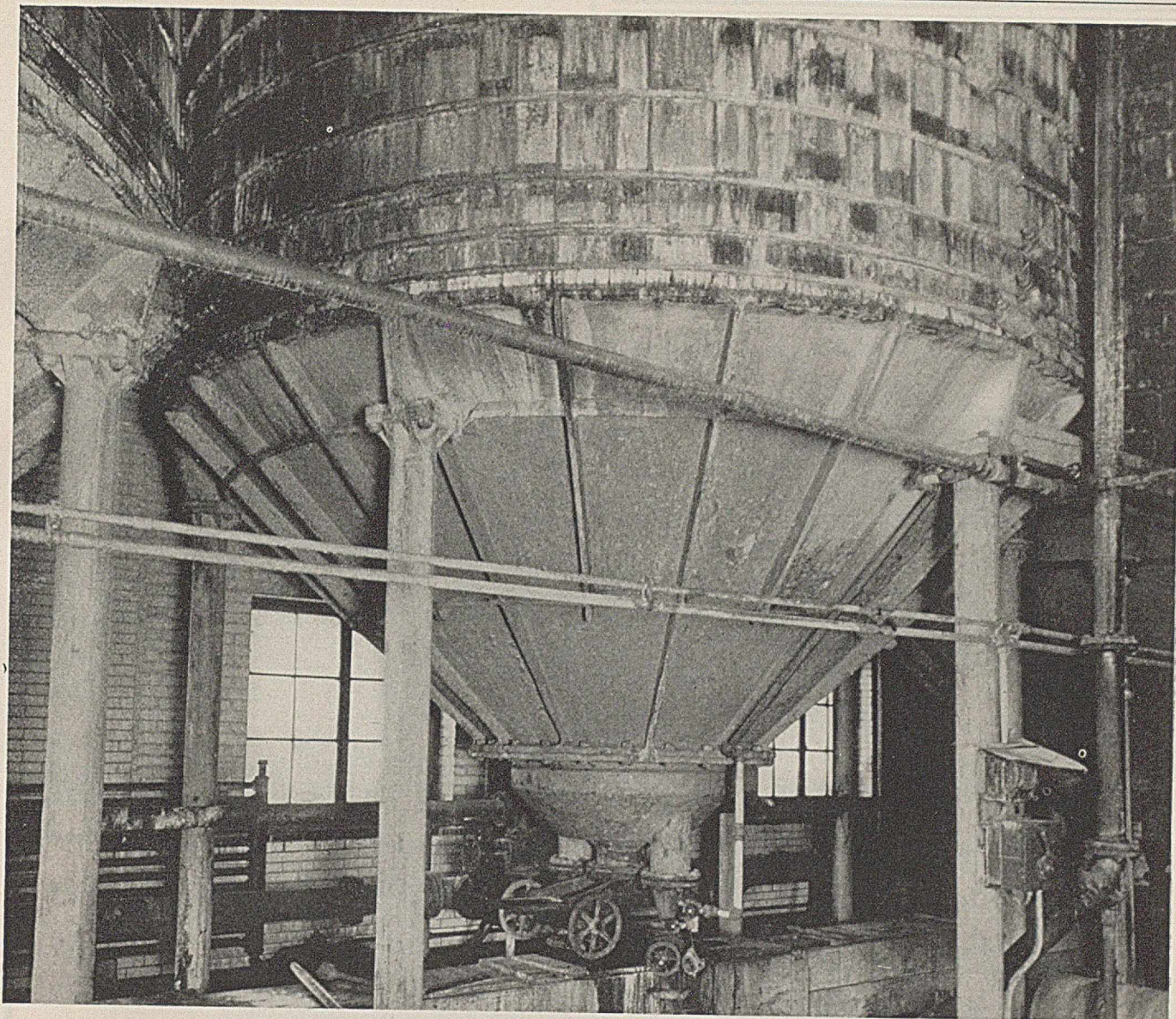
The above statements are those of a large steel company operating a 30-ton Industrial Brownhoist Diesel crane purchased in 1937. The figures are typical of the performance data which come to us from other users of Industrial Brownhoist Diesel locomotive cranes.

Compare these operating costs with those of your present crane.

## INDUSTRIAL BROWNHOIST

GENERAL OFFICES: BAY CITY, MICHIGAN  
DISTRICT OFFICES  
New York, Philadelphia, Pittsburgh, Cleveland, Chicago,





## Bakelite Resin Coatings Solve Another Difficult Corrosion Problem

A glucose manufacturer faced the serious problem of protecting his steep tanks from the corrosive action of steep water—a solution containing .01 to .04 per-cent sulphur dioxide. This solution ate through the cast iron shells at a rapid rate, leaving a carbon deposit. Repeated scraping to remove this deposit made the shells porous.

The problem was solved by a heat-hardenable Bakelite Resin Coating, applied by the Lithcote process developed by Lithgow Corporation. Tests prove that after one year's service the Bakelite Resin Coating still retains its protective value; in the same period the

cast iron shell would have been worn away at least  $\frac{1}{8}$  inch.

To determine how *your* equipment may be similarly safeguarded at low cost, write for informative Portfolio 15.

BAKELITE CORPORATION  
Unit of Union Carbide and Carbon Corporation



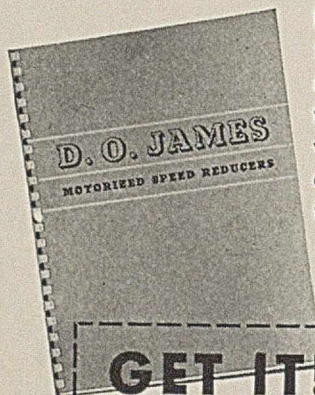
30 EAST 42nd STREET, NEW YORK

# BAKELITE

The word "Bakelite" and the  Symbol are registered trade-marks of Bakelite Corporation

**SYNTHETIC RESINS**  
FOR ANTI-CORROSIVE FINISHES

# MOTORIZED Speed Reducers

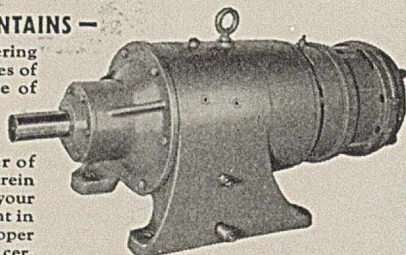


D. O. James Motorized Reducers are precision manufactured to meet the requirements of service for which they are designed. They have the highest possible efficiency, accessibility and are most compact.

**GET IT!** Initial this space, attach to your letterhead and mail to us

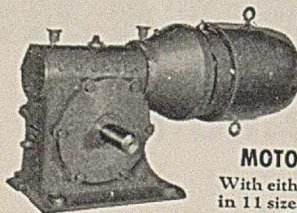
#### THIS CATALOG CONTAINS —

112 pages of engineering data, weights and prices of the D. O. James line of Motorized Reducers. It lists completely selection tables, service factors and character of load. Information therein will prove helpful to your engineering department in the selection of the proper type of Motorized Reducer.



#### MOTORIZED PLANETARY REDUCER

Horizontal and vertical drive, made in 35 sizes, ratios 10 to 1200:1,  $\frac{3}{4}$  to 75 H. P.



#### MOTORIZED WORM GEAR REDUCER

With either horizontal or vertical drives. Made in 11 sizes, ratios 6 to 80:1 and a horse power range of  $\frac{1}{8}$  to 50 H. P.

#### MOTORIZED HELICAL REDUCER

With either horizontal or vertical drive. 13 sizes, ratios  $1\frac{1}{4}$  to  $9\frac{1}{2}$ ;  $1\frac{3}{4}$  to 50 H. P.

Sales and engineering offices in ALL principal cities



# D. O. JAMES

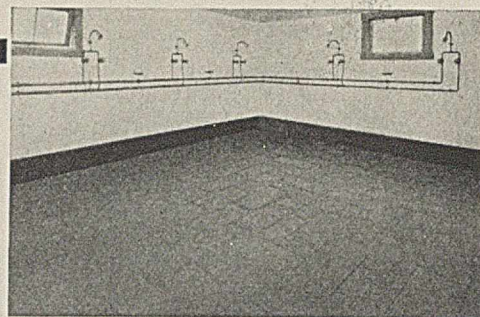
D. O. JAMES MANUFACTURING COMPANY

ESTABLISHED 1888

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FOR OVER 50 YEARS MAKING ALL TYPES OF GEARS AND GEAR REDUCERS

Shower Room  
— Emery  
Industries,  
Ivorydale, O.



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HERE is the high efficiency flooring that industry has been looking for — ELASTITE Asphalt Tile — another development of CAREY research and experience.

Recommended as a superior flooring for factories, warehouses, loading platforms, service stations, printing plants, offices, stores, etc. — for general use wherever a suitable sub-base exists and where loading, temperature and chemical conditions fall within proper limits.

CAREY ELASTITE Asphalt Tile is a compound of asphalt and mineral filler, reinforced with asbestos fibres, densely compressed and die cut to size. Available in black and red colors, in  $\frac{1}{2}$ " thickness, and in sizes 12" x 12" and 12" x 24".

This modern tile helps to reduce accidents, lower maintenance, save time, improve appearance, promote cleanliness. Specify it for new construction and for resurfacing rough or worn floors. Write today for catalog and samples — address Dept. 64.

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Dependable Products Since 1873  
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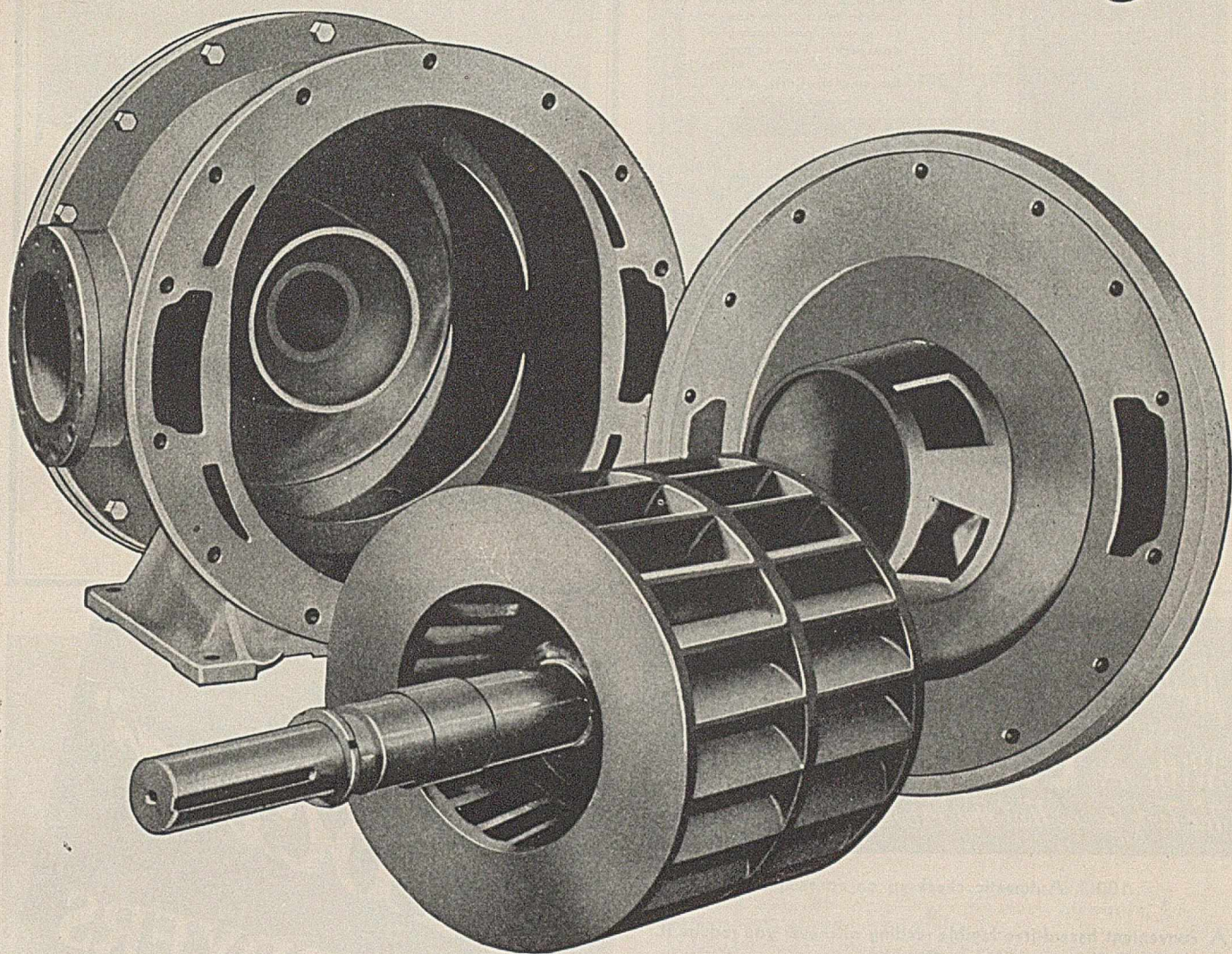
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# Only Nash Vacuum Pumps have all of these advantages



Nash Vacuum Pumps are simple, having but one moving part. These pumps have unusual characteristics. They will handle a gas and a liquid simultaneously. Slugs of liquid entering a Nash Vacuum Pump do no harm. Thousands are rendering service where this condition is present.

A unique feature of Nash Vacuum Pumps is that, in handling hot and saturated vapors, they have a condensing effect . . . The operating principle involves an internal liquid seal, which condenses and contracts hot vapors and gases . . . Unless the amount of hot vapor is great,

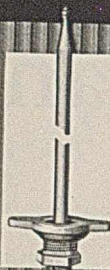
other condensing devices are not necessary.

This liquid seal may be varied with the gas being pumped. On solvent work the percentage of recovery may be increased by using a suitable liquid as the pump seal and recirculating this liquid. Because of the complete lack of internal lubrication, the solvent cannot become contaminated.

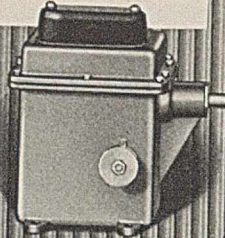
Nash Vacuum Pumps are furnished in a wide range of capacities up to 5,000 cubic feet per minute. In single stage design they efficiently maintain vacuums up to 27 inches of mercury, and in two stage design vacuums above 29 inches.

**THE NASH ENGINEERING COMPANY**  
226-A S. WILSON ROAD • SOUTH NORWALK, CONNECTICUT • U. S. A.

## Bulb-type Micro-Control ...for DAMPERS!



Provides accurate, automatic, proportioning control for processing operations where a remote bulb instrument is desired to govern positioning of dampers. For temperatures up to 500 F. Write for new Bulletin F-1675.



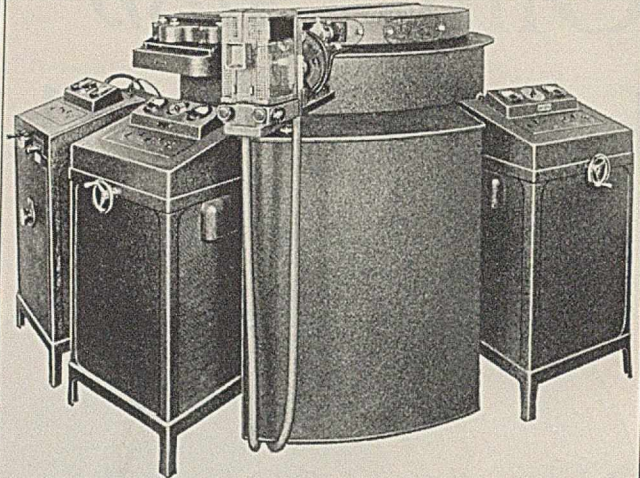
# BARBER-COLMAN

ELECTRIC SYSTEM OF TEMPERATURE CONTROL

**BARBER-COLMAN COMPANY**

ROCKFORD, ILLINOIS

## SPECTROGRAPHIC EQUIPMENT



AC ARC & SPARK  
UNIT

ARL  
SPECTROGRAPH

DC ARC  
UNIT

A complete line of electrical source units, AC Arc, DC Arc and AC Spark.

Spectrograph with constant dispersion and resolution. Comparator and Densitometer for film or plate. Developing, Washing and Drying Equipment for film or plate. Calculating and Specimen Mold also furnished. An experienced staff to supervise installation. Accuracy of spectrochemical analysis plus or minus 3%.

Write to

**Harry W. Dietert Co.**

9330B Roselawn Ave.

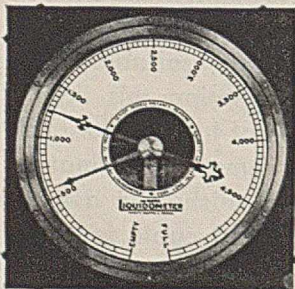
Detroit, Michigan

*Meet the Necessity of  
Accurate Liquid Control*  
With A **LIQUIDOMETER**  
*The Tank Gauge That Has Proved its Dependability*

100% Automatic check-up on consumption.

A convenient hazard-free legible reading whenever you require it.

No pumps, valves or auxiliary units required to get a LIQUIDOMETER reading.



Balanced hydraulic transmission system ingeniously compensates for temperature variations on communicating tubing.

Accuracy unaffected by changes in specific gravity.

Approved by Underwriters' Laboratories and similar groups for measuring hazardous liquids.

Remote or Direct Reading models available.

Write for complete details.

THE **LIQUIDOMETER** CORP.

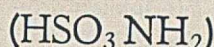
38-13 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

**"Proctor"**  
DRYERS

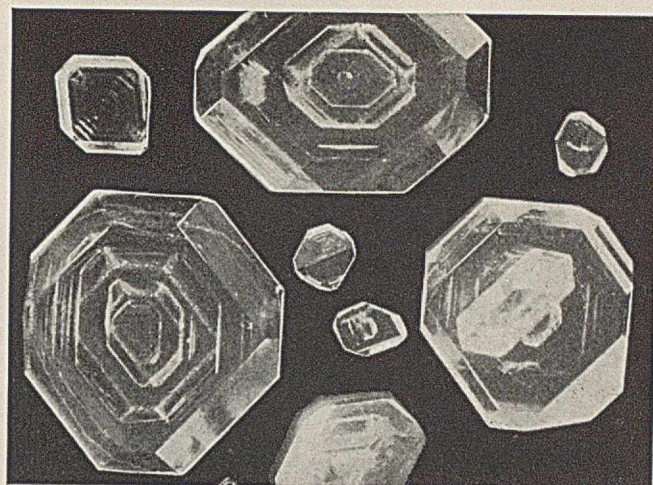
This trade-mark has long identified drying equipment that is scientifically designed for each job to be done . . . equipment designed so as to assure correct, unvaryingly uniform drying at the very lowest production costs. The Proctor organization has designed and built thousands of dryers (from small tray dryers to great continuous systems) that have not only met the most exacting demands, but have continued to do so, year after year, with a minimum of upkeep costs.

PROCTOR & SCHWARTZ • INC • PHILADELPHIA

# SULFAMIC ACID



**S**INCE the recent introduction of this inorganic acid and its salts, many important industrial uses have been



Above crystals were prepared to illustrate the crystal form of Sulfamic Acid.

developed. The unusual characteristics of this new product may suggest applications to some phase of your processing.

## PHYSICAL PROPERTIES:

White crystalline solid  
Melting point - 205° C.  
Molecular weight - 97.1  
Non-volatile  
Non-hygroscopic  
Odorless

### Solubility:

Water.....24.2 grams per 100 grams water at 25° C.

Organics.....Slightly soluble in alcohol, acetone or ether;  
Moderately soluble in formamide.

Sulfamic Acid is only slightly soluble in concentrated sulfuric acid solutions. Sulfamate salts are very soluble in water, usually showing much greater solubility than the corresponding sulfates, chlorides, or nitrates. For example, lead sulfamate has a solubility of 218 grams per 100 grams water at 25° C.

## CHEMICAL PROPERTIES:

1 Aqueous solutions are highly ionized, giving pH values lower than solutions of formic, citric, oxalic or phosphoric acids and approaching pH values of hydrochloric and sulfuric acids.

2 Sulfamic Acid in solution is hydrolyzed at elevated temperatures to ammonium acid sulfate. Solutions of sulfamate salts are resistant to this hydrolysis.

3 Sulfamic Acid reacts instantly with nitrous acid or nitrites, liberating nitrogen.

4 Chlorine, bromine and chlorates oxidize Sulfamic Acid to sulfuric acid, liberating nitrogen. Sulfamic Acid is not oxidized by chromates, permanganates or ferric chloride.

5 Sulfamate salts restrain the precipitation of heavy metals such as silver or gold, upon rendering such solutions alkaline.

6 Sulfamic Acid may be used as a sulfating or sulfonating reagent for certain primary alcohols, phenols or unsaturated compounds.

7 Aldehydes react with the amide group of Sulfamic Acid or its salts.

## USES:

**Leather Tanning:** Bating, pickling, tanning. The use of Sulfamic Acid in the pickling operation results in a silkier and tighter grain which is maintained throughout the other steps in leather manufacture.

**Nitrite Removal:** Following diazotization reactions in the manufacture of dyes and color lakes; in the application of developed colors to textiles and leather.

**Fire Retardant:** (Ammonium Sulfamate): Textiles, paper and insulation products.

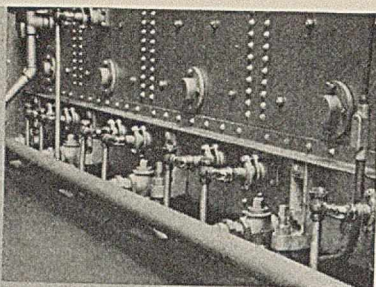
**Laboratory Reagent:** Acidimetric standard; nitrite removal.

**Weed Killing:** (Ammonium Sulfamate): Rapid and permanent eradication of many weed pests such as poison ivy, ragweed, Canada thistle, etc.

[ Technical Service is available to assist in the use of Sulfamic Acid.  
A limited number of samples are available for test work. ]



**E. I. DU PONT DE NEMOURS & COMPANY**  
INCORPORATED  
**GRASELLI CHEMICALS DEPARTMENT**  
WILMINGTON · DELAWARE



The

## MILWAUKEE COCA-COLA BOTTLING COMPANY

INSURES ECONOMY



with **SARCO** STEAM TRAPS

Nickel-plated machinery, overhead daylighting, tiled floors and uniformed attendants. And, of course, Sarco Steam Traps, because this plant is also designed for efficiency and reliability.

In this case it's a low pressure job using steam right off the 2 lb. heating mains, with eight Sarco Type E's dripping the coils. This trap does everything the Sarco No. 9 high pressure trap will do and has won equally high recognition in its field. Ask for Catalog No. 48.

**SARCO** SARCO COMPANY, INC.  
183 Madison Avenue, New York, N. Y.  
SAVES STEAM SARCO CANADA LTD., FEDERAL BLDG., TORONTO, ONT.

101

this MODERN  
HARPER  
PLANT

makes ONLY  
non-ferrous  
and stainless  
fastenings



ONE COMPLETE manufacturing unit that manufactures BOLTS, NUTS, SCREWS and WASHERS out of everything EXCEPT IRON and STEEL.

Cap Screws of BRASS, Lag Screws and Hanger Bolts of BRONZE, Bolts and Screws in EVERDUR, Washers, Rivets and Nuts of MONEL and most every type of STAINLESS fastenings you could require. Every popular type and size in all the alloys.

That's the story—3600 STOCK ITEMS in every alloy except iron and steel and plenty of production equipment to make those small troublesome specials you need right now.

Send for the 72-page Harper Catalog—"Bible" of the non-ferrous and stainless fastening industry. The H. M. Harper Company, 2632 Fletcher St., Chicago.

**HARPER**  
Chicago

## What Does "LOW COST" Mean in a GOOD Pump?

In TABER it means Lower Pumping Costs and Longer Operation

● You cut costs on production troubles due to mis-applied ordinary pumps, because Taber Vertical Pumps FIT your job without special cost.

### Various Submerged Types

Taber Pumps are built in all castable-machinable alloys or iron and steel... in a wide range of sizes and capacities.

### Send for Bulletin V-735

This bulletin helpfully describes Taber Vertical Pumps. Illustrates many applications of these pumps to most any processing industry.

**TABER PUMP CO.** (Est. 1859)  
293 Elm Street 5392 Buffalo, N. Y.

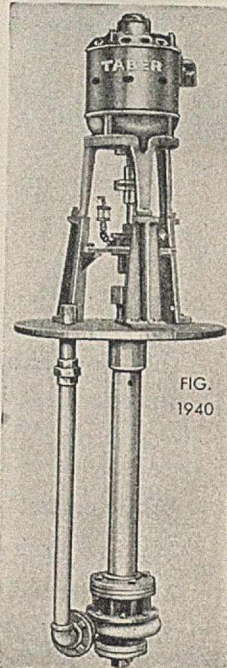
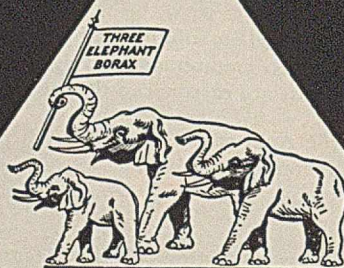


FIG.  
1940

Protect Your Production  
Schedule with TABER Pumps

# Specify



## THREE ELEPHANT BORAX-BORIC ACID

POTASH  
**TRONA**  
SALTS

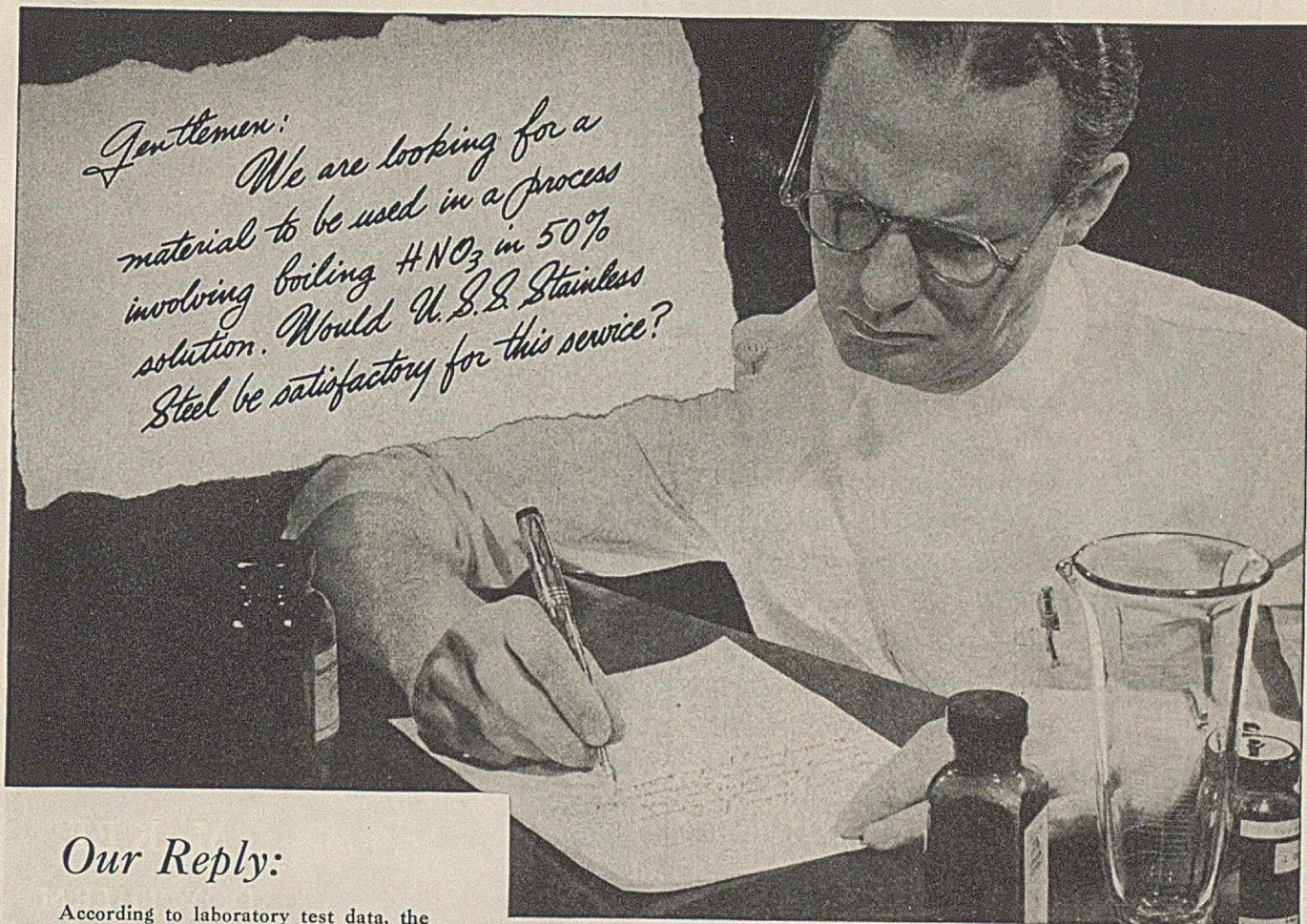
## MURIATE OF POTASH

Stocks carried in principal cities of United States and Canada

**AMERICAN POTASH & CHEMICAL CORP.**  
70 PINE STREET NEW YORK

# WANTED!

## A METAL TO WITHSTAND BOILING NITRIC ACID



*Gentlemen:  
We are looking for a  
material to be used in a process  
involving boiling  $\text{HNO}_3$  in 50%  
solution. Would U. S. S. Stainless  
Steel be satisfactory for this service?*

### Our Reply:

According to laboratory test data, the rate of penetration for U·S·S 18-8 Type 304 and U·S·S 18-8 Cb Type 347 Stainless Steel, when exposed to a boiling solution of 50%  $\text{HNO}_3$ , is less than 0.00035 inch per month. In other words, if you built your equipment of these grades of U·S·S Stainless, 1/16 inch thick, it would be good for at least 15 years of service. Would caution you, however, that the above penetration rate applies only to laboratory conditions, and therefore urge that you run service tests on welded samples under your actual production conditions. May we help you?

HERE is an inquiry typical of thousands received yearly by our U·S·S Stainless Specialists. Every inquiry receives the same careful attention, the same thoughtful analysis by men thoroughly experienced in the application of stainless steel.

Avail yourself of this service. If you are planning new equipment, or new processes involving condi-

tions destructive to ordinary materials, it is highly probable that you'll find U·S·S Stainless Steel admirably suited to your requirements.

Let us tell you how this metal has prolonged equipment life, eliminated needless weight in equipment, and reduced contamination in scores of difficult applications. Write today for information.

## U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*  
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*  
NATIONAL TUBE COMPANY, *Pittsburgh*

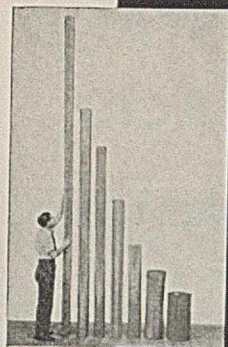
Columbia Steel Company, San Francisco, *Pacific Coast Distributors*

United States Steel Export Company, New York

Scully Steel Products Company, Chicago, *Warehouse Distributors*

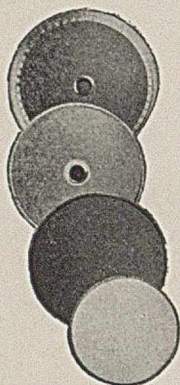


# UNITED STATES STEEL



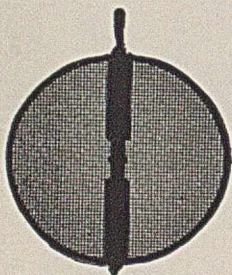
Wire Cloths  
Stocked In  
Widths Up  
To 14'

**How to Get The  
QUICK & CORRECT  
SOLUTION for  
Your Particular  
FILTRATION  
PROBLEMS...  
Especially The  
"Difficult" Jobs**

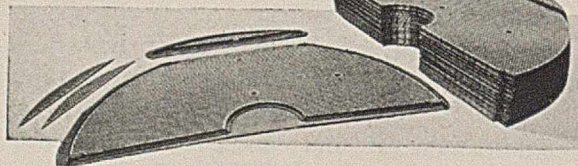


Various Types Of Hy  
draulic Press Pads

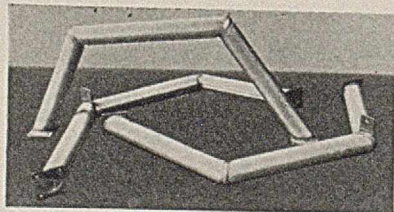
**H**AVE us submit recommendations, samples, estimates. You will get quick, intelligent, economical response. And, on particularly "difficult" filtration problems, bear in mind that for 29 years we have specialized in the manufacture and fabrication of an exceptionally wide variety of filter cloth. With our help, many "unsolvable" problems have been licked, bringing results as cleaner filtrations—faster "thru-put"—lowered operating costs.



"B.W.D. Multileaf" For  
Pressure Filter



Reactor Screens



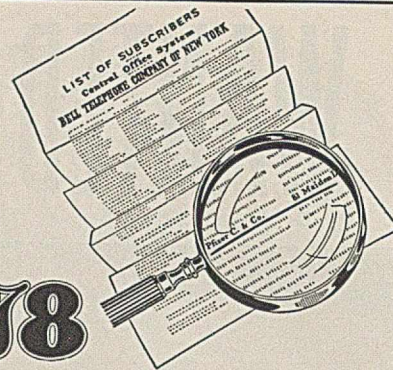
Spider Covers

**MULTI-METAL**

WIRE CLOTH COMPANY  
INCORPORATED

1355 GARRISON AVE., BRONX BORO, N. Y.

WIRE CLOTH  
FILTER CLOTH  
ALL MESHES  
ALL METALS



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GOES INTO SERVICE**

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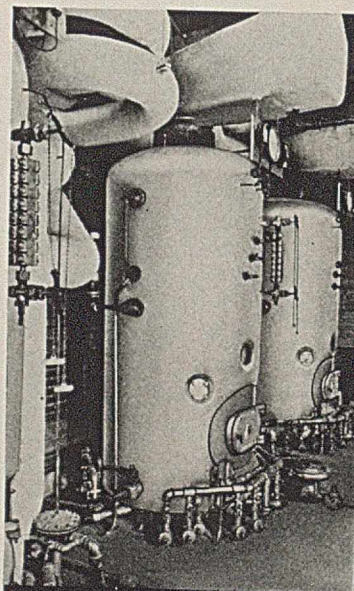


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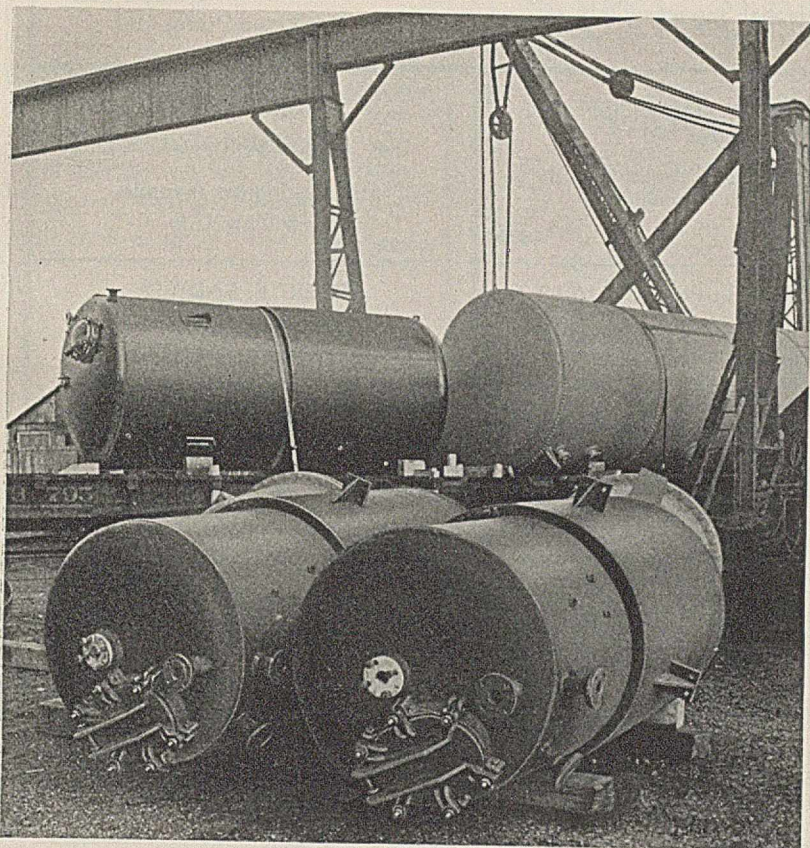
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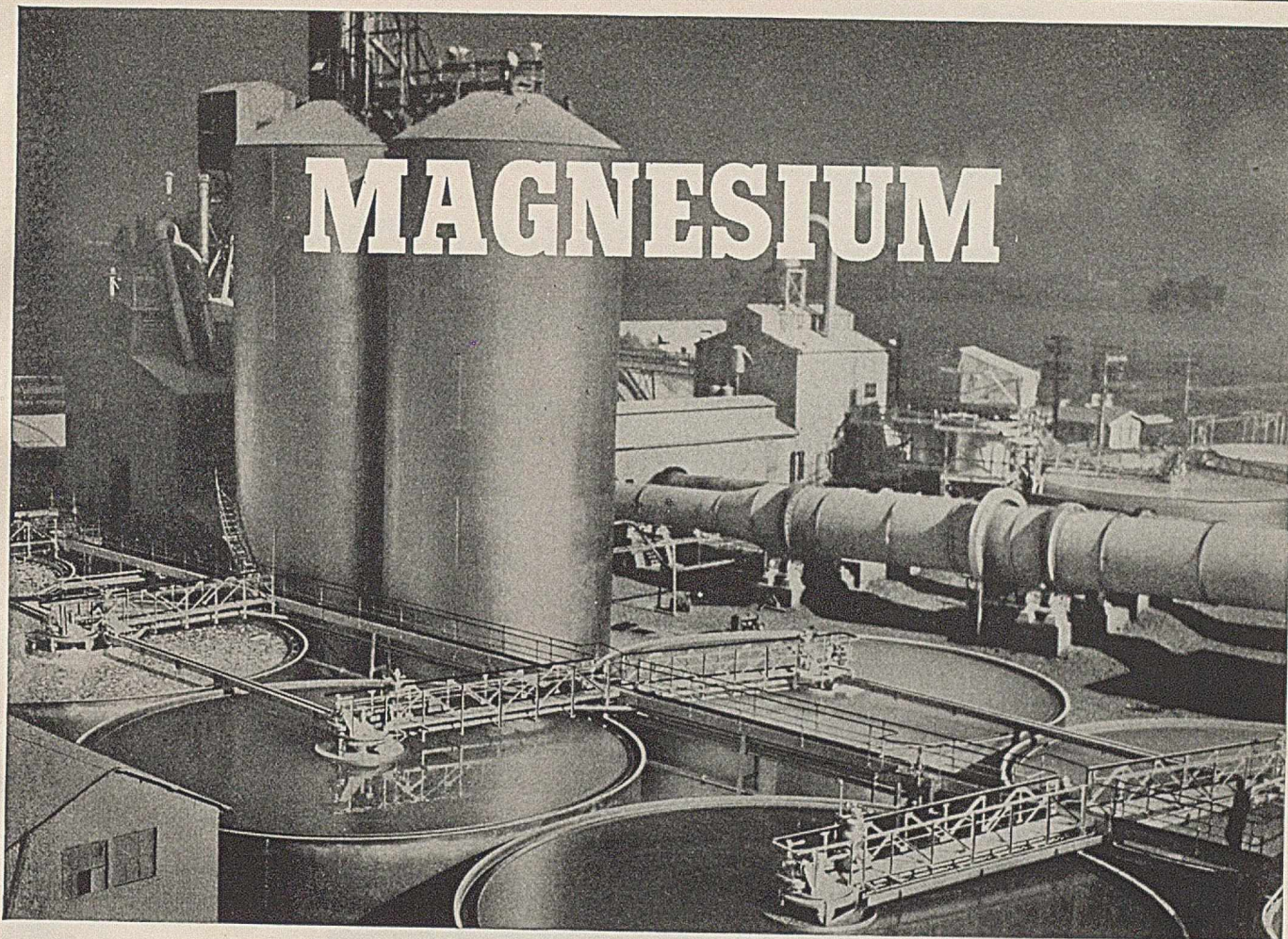
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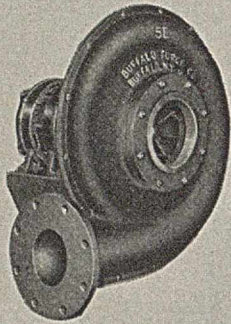
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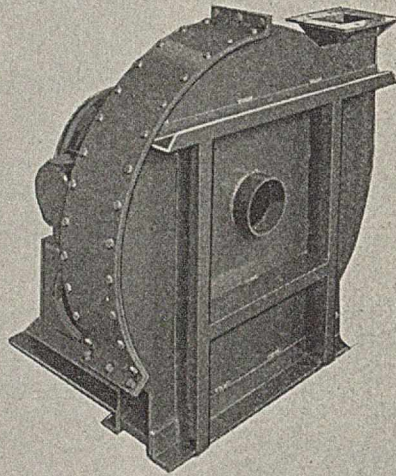
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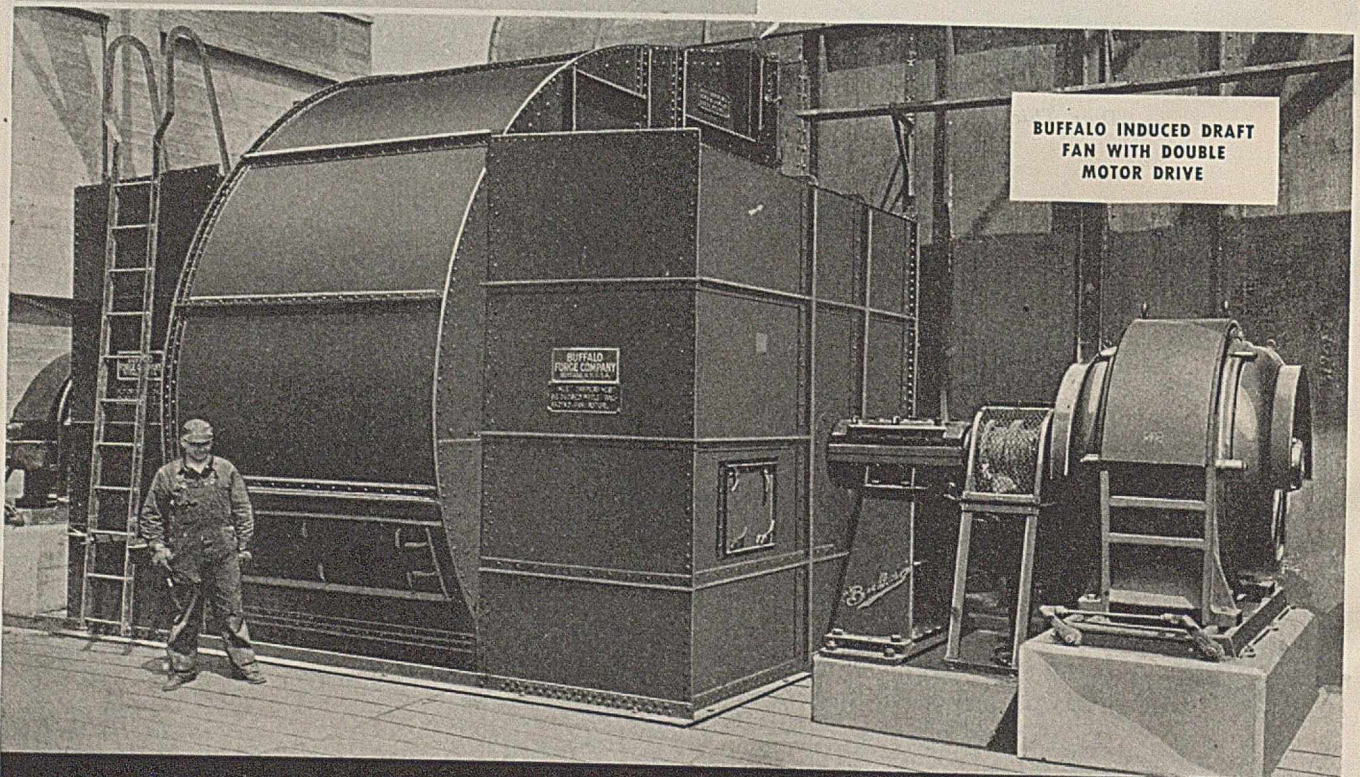
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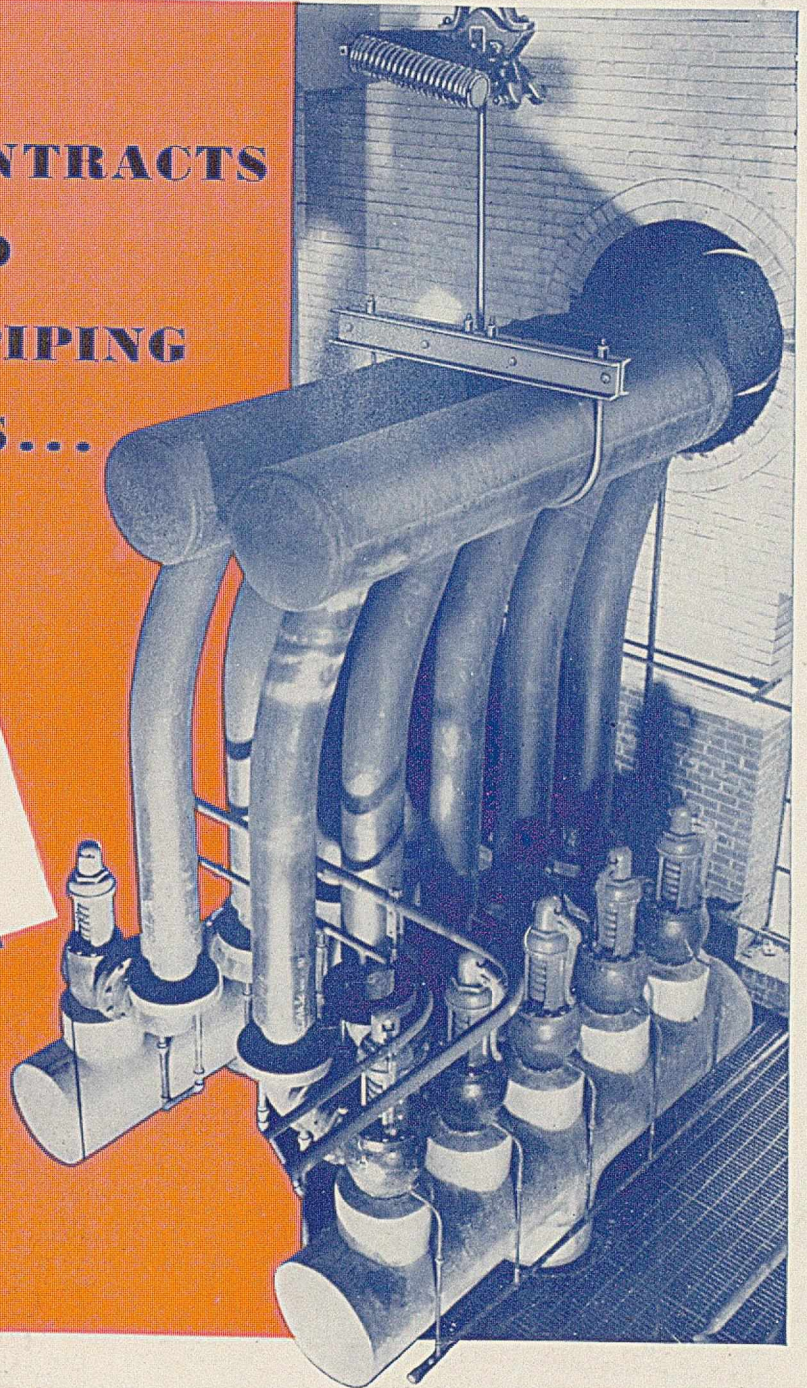
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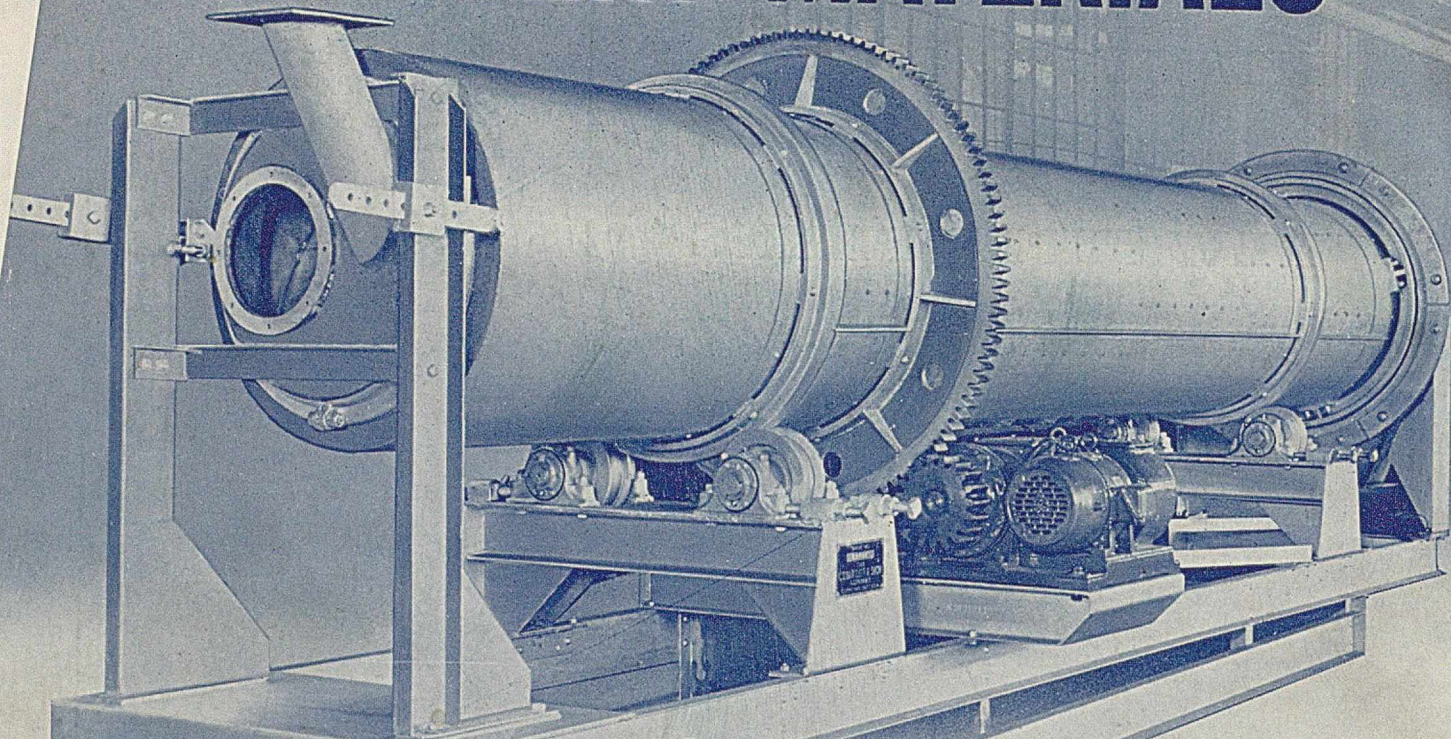
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