

Southern Architect and Building News

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THE H. B. SMITH CO., Westfield, Mass.

Makers of Mills, Water Tube Boilers and Princess Radiators. Smith Boilers with Smokeless Furnace.
 Boston New York, N. Y. Philadelphia, Pa.
 640 Main St., Cambridge, Mass. 10 E. 39th St. 17th and Arch St.
 HOLBROOK, MERRELL & STETSON, San Francisco, Calif., Pacific Coast Representatives.

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 FOR STEAM AND HOT WATER
 GIVE COMPLETE SATISFACTION
 GURNEY HEATER MFG COMPANY
 SHOW ROOMS: NEW YORK, PHILADELPHIA, WASHINGTON
 HOME OFFICE: 188-200 FRANKLIN ST. BOSTON

SAMSON SPOT SASH CORD

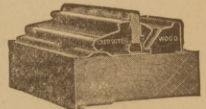
 SAMSON CORDAGE WORKS, BOSTON, MASS.

HESTER
 Best of its type.


Will Last as Long as the Building
A Better Store Front for Less Money
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Southern Office
 Care of R. L. DAVIES
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 WATER FILTERS
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 WHEN SENDING FOR CATALOGUE, SPECIFY KIND OF TANK DESIRED
 NEW YORK 26 CORTLANDT ST. **WM B. SCAIFE & SONS CO.** HOME OFFICE PITTSBURG PA.

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 Main Office, West Pawlet, Vermont.
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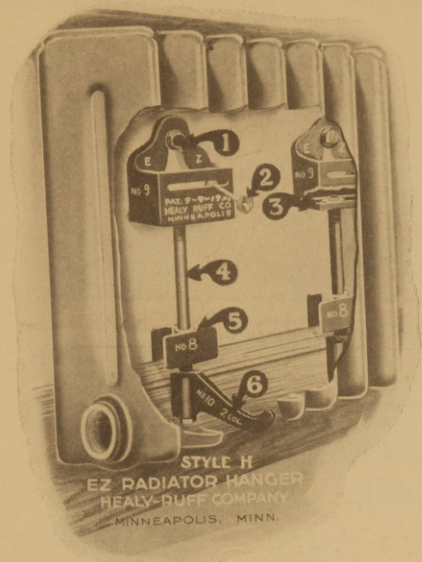
THE WINKLE TERRA COTTA COMPANY
 Manufacturers of
Architectural Terra Cotta
 ALL COLORS
 502-3 Century Building ST. LOUIS, MO.

AMERICAN ELEVATORS Built by **AMERICAN ELEVATOR and MACHINE CO. INCORPORATED**
 LOUISVILLE, KY.

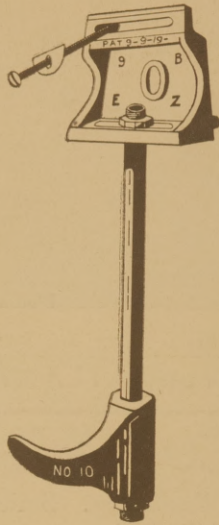
The Hawley Down Draft Furnace Co.
 Builders of the Original Down-Draft Smokeless Furnace and the Hawley-Schwartz Metal Melting Furnaces.
 Formerly of Chicago. Easton, Pa.

ATLANTA TERRA COTTA COMPANY
 Manufacturers of
ATLANTA ARCHITECTURAL TERRA COTTA
 1303 Third National Bank Building Factory at EAST POINT, GA.

Hy Test - 3400° F. **STEVENS FIRE BRICK** Fire Clay
 Standard 3100° F. **STEVENS BROS. & CO., Stevens Pottery, Ga.** Sewer Pipe
 Special Shapes Flue Lining



1. One Bolt.
2. Invisible Washer.
3. Horizontal Adjustment.
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5. Adjustable for Baseboard.
6. Made for Wall, 1, 2, 3, 4, 5-Column, and Window Radiation.



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Not Adjustable for Baseboards.

Very Reasonable in price.

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THREE IN ONE LIGHTNING RODS

for the **Burkett SYSTEM** make are backed by a half century of successful business and a guarantee, ASSURING ABSOLUTE PROTECTION on EVERY INSTALLATION.

The illustration shows you definitely the construction of BURKETT RODS.

Around the tape are closely woven a series of soft copper strands. Each strand is a surface conductor and in contact with the spiral tape core. This method of construction forms a



PERFECT Tube. Convince your prospective customer that BURKETT RODS are the BEST he can buy.

We still have some exceptional openings in Big Paying territory for good live Builders.

IT WILL PAY YOU TO WRITE US TODAY.

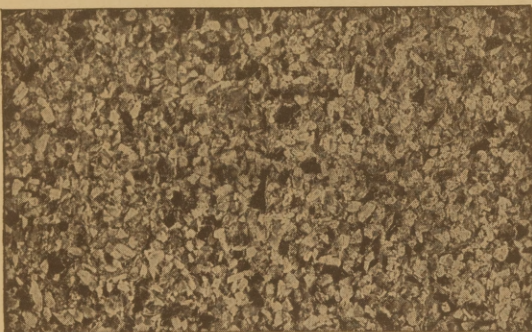
BURKETT LIGHTNING ROD CO.
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CONCRETE

Blocks, Bricks, Building Trim, Posts, Ornamental Work, etc.

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IS CHANGED INTO

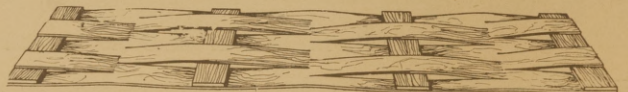
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BEAUTIFUL, ARTISTIC and EVERLASTING

Adds to your product a selling value five times greater than the facing cost.

Made in six scientifically milled sizes, extremely hard, sharp and free from dust. Insures strength and beauty. Booklet, "Micaspar and How to Use It," with free samples, mailed on request.

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are bases for plaster and stucco that are attracting nation-wide favorable attention.

They excel in ease and rapidity of application to studding, of application to plaster or stucco and of enduring key.

They constitute the most economical bases on the market because of low initial cost, saving of labor and saving of plastic material.

They are based upon scientific principles and attract the architect and engineer as well as the builder and the man who pays the bills.

The Thermo-Base provides insulation and saves coal bills besides adding home comfort.

Write for detailed information.

O'BRIEN WOVEN LATH CO.

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LONGLIFE

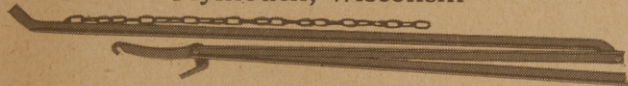
Use
**ALL STEEL
Scaffold Bracket
And Save Time**

Built for
Service
Absol-
utely
Safe

Mr. Contractor
Turn Expense
Into Profit

For Prices
See Your Dealer
or
Write Direct to Manufacturers

Plymouth Metal Products Co.
Plymouth, Wisconsin



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FREE FROM OBJECTIONABLE ODOR
Free from Creosote—Dries Overnight

Parker's Art in Shingle Stains insures greatest possible protection to the life of the shingles.

COLORS OF EXTREME RICHNESS
AND ABSOLUTE PURITY

They insure highest artistic effect.
EXTREME DURABILITY
Colors will not fade.

PARKER'S (original) ASBESTOS
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A fast color treatment for asbestos shingles that produce rich, artistic color schemes in Copper Green, English Tile Red, Rich Wine, Rich Red, Velvet Light and Dark Green, Velvet Moss Green, Rich Brown and Slate.

Color Folders sent upon request.

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Wet Mixed Concrete**

We are the originators of the core method whereby the small oval openings in block guarantee against collapse. Thus wet material can be employed. Simplest and best method for production in various lengths of block.

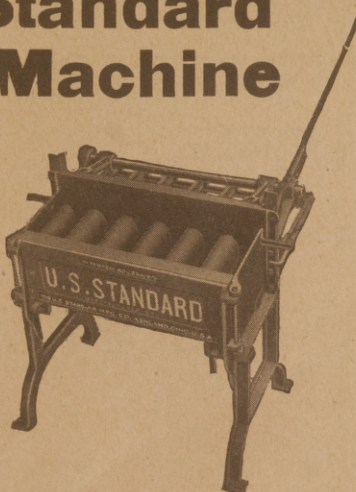
Our coring system allows for plenty of wall ventilation giving air space from top to bottom of wall.

Machine makes hollow or outside blocks and thin blocks for veneer and inside partitions.

U. S. Standard block are made face-down and are dense, strong and waterproof.

**U. S. Standard
Block Machine**

Ask for details about this—one of the oldest and most widely used block machines on the market.



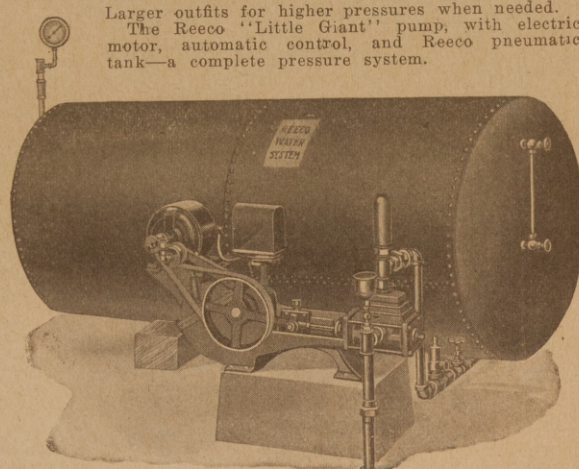
**U. S. Standard
Manufacturing
Co.**

Formerly of Ashland, O.
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Ohio

MAKING WATER RUN UP HILL
is easy when an up-to-date automatic
REECO WATER SUPPLY SYSTEM

is installed. With a pressure of 50 pounds in the Reeco pneumatic tank, the water will "run up hill" to an elevation of about 117 feet.

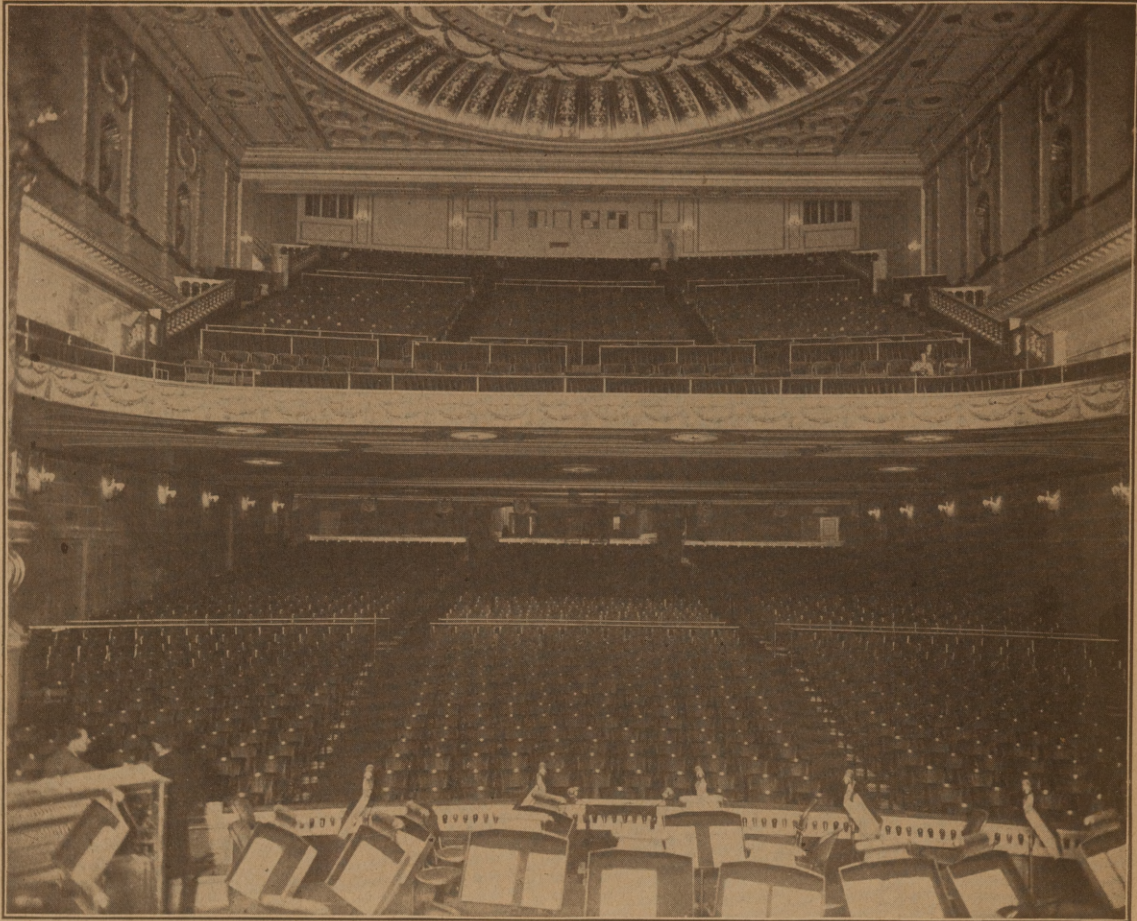
Larger outfits for higher pressures when needed.
The Reeco "Little Giant" pump, with electric motor, automatic control, and Reeco pneumatic tank—a complete pressure system.



Send for Bulletin B-1.

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Deep Well and Suction Pumps.
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Complete Pneumatic Tank Systems.

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—Established 80 Years—
Active responsible sales representatives are desired.



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GENERAL CONTRACTORS

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**OHIO WHITE FINISH HYDRATED LIME USED
FOR THE LAST OR PUTTY COAT
IN PLASTERING**

Manufactured by

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WOODVILLE, OHIO

For Public Buildings

where the architect seeks to express dignity, substantiality, and beauty Face Brick offers an economical medium of wide expression.

Less expensive than stone, granite or marble, it is more enduring, all things considered, and as easily lends itself to the dignity and massive character of the most elaborate and pretentious structures.

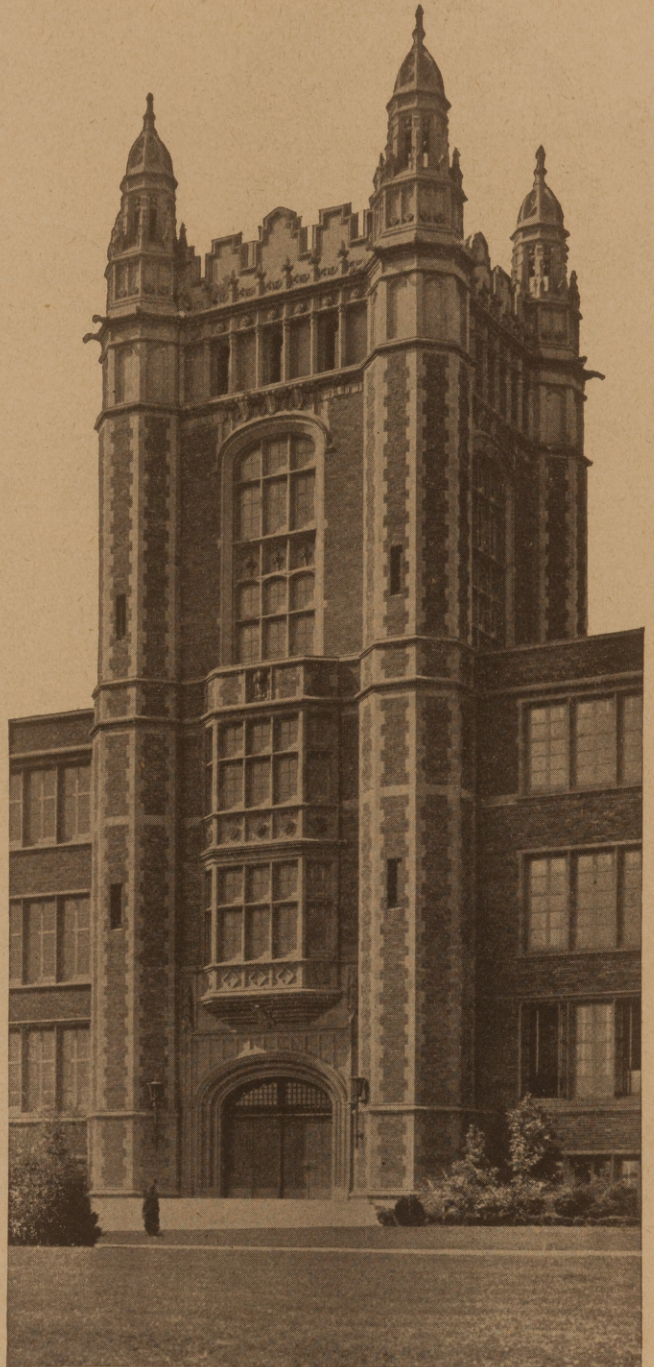
Through the great variety of color tones and textures, mortar colors, bonds, and pattern work, Face Brick opens up a field of varied beauty beyond the scope of any other material.

In all parts of the country can be found ample proof of the suitability of Face Brick for public buildings.

Any member of this association is at all times ready to discuss the architect's Face Brick problems with him, and to co-operate to the fullest extent.

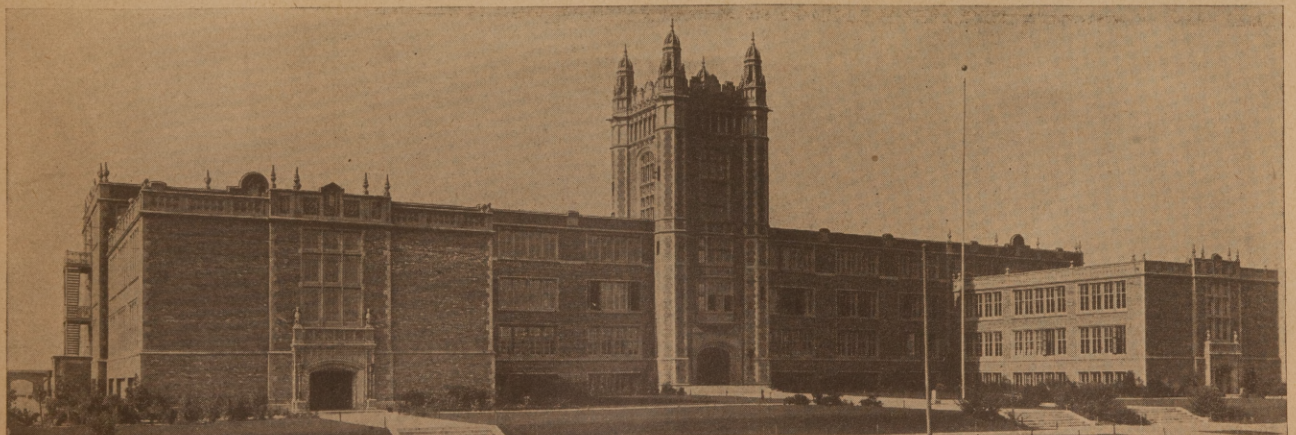
American Face Brick Association

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High School, Los Angeles, Cal.

John C. Austin, Architect





The Mark of the Giant

The Giant trademark on concrete mixing machinery is a guarantee of the utmost in quality and service.

The Giant trademark is a protection for both the contractor and his customer. With a Giant on the job, the contractor makes money—the customer saves.

Speed and economy of production, low upkeep and unfailing dependability make Giant Mixers the favorites of progressive contractors.

There is a size and type of Giant to fit any need. Send us an outline of the class of work you do and let our engineering department help you select the mixer you need. Catalog free for the asking.

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GIANT MIXERS

The Significance of an Underwriters' Label

THE Underwriters' Laboratories is a non-profit organization, affiliated with insurance companies. Its business is to test, pass upon, or reject products for which the *maximum safety* is claimed.

Peelle Counterbalanced Truckable Freight Elevator Doors have been tested and approved by the Laboratories. Such approval is an "iron clad" indication of the tested fireproof construction of Peelle Doors.

To the insurance inspector, making a survey of a building, for the purpose of establishing an insurance rate upon it, and to every man who knows its meaning, the Underwriters' certificate is authoritative evidence that the doors bearing the label are absolutely fireproof.

When you install Peelle doors, regulation type or pass type, you effect an immediate saving in insurance, incidentally increasing the efficiency of your elevator.

The Peelle Company takes especial pride in announcing its latest achievement—the new Peelle "Fenn" Self-binding Counterbalanced Freight Elevator Doors—the *only pass type door* awarded the label and certificate of the Underwriters' Laboratories.

These prominent firms have already equipped their buildings with PEELLE Pass Type Underwriters' Labelled Doors

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Sears Roebuck, Philadelphia, Pa. (53 Doors)

Duluth Show Case, Duluth, Minn.

Armour & Company, Chicago, Ill.

Cadillac Motor Co., Chicago, Ill.

Swift & Company, Green Bay, Wisconsin

Automatic Electric Washer, Newton, Iowa

PEELLE Freight Elevator DOORS

Counterbalanced-Truckable

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Brooklyn, New York

REPRESENTATIVE OFFICES

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Boston
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Tin Clad
Door. Label-
led by Under-
writers Lab-
oratories, and
Factory
Mutual
Companies.

SLATES OF QUALITY



Why Are Church Roofs Slated?

Because churches are constructed to last—the materials are permanent. The Slate Roof will outlast the church.

And so it will on the home, school, factory, garage, barn: Use Slate. Slate is durable, fireproof, beautiful. Slate comes in colors of Black, Green, Gray or Purple—A style size color and application to harmonize with the rest of your building.

Consult our Architectural Service Dept. and let us submit you samples, prices and suggestions to beautify your building by beautifying the roof.

SLATE IS THE NATURAL ROOFING MATERIAL TO USE

A good slate roof, once on, stays on and will outlast the life of the building itself. A slate roof embodies, first, safety; second, service; third, economy; fourth, beauty: Use Slate.

THE AULD & CONGER COMPANY, Cleveland, Ohio

Producers of Slates of Quality, Roofing Slate, Blackboards, Structural Slate
Our book "Above All" should be in the hands of every architect.

Western Glass Company

STREATOR, ILLINOIS

Manufacturers of Wire and Rolled Glass

In All Patterns and Thicknesses for
Fire Preventive and Fire Retardant Purposes

OUR SOLITE PATTERN

*The Following is a letter from Robert W. Hunt & Company,
Engineers*

ROBERT W. HUNT & COMPANY, ENGINEERS

Chicago, Illinois, Jan. 7, 1921.

Gentlemen.

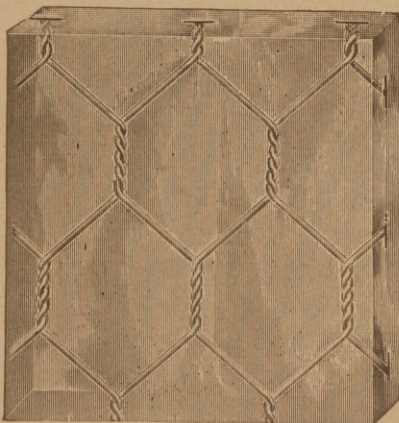
Complying with your instructions of December 28, 1920, we have tested three samples of glass for the purpose of determining their comparative values for light transmission.

The samples were tested by exactly balancing two carbon lights to the same candle power and then placing a specimen between one light and the sight box of the photo-meter. Eight readings were taken for each sample and the results averaged. These tests were repeated, using tungsten lights, the results obtained being practically the same.

The relative efficiency of light transmission referred to the Solite sample has been calculated from the combined averages from the two sets of readings with the following results:

	Per cent	Relative Efficiency
Solite	100	100
Hammered	9.2	92.4
Factrolite	16.1	80.5

Respectfully submitted,
ROBERT W. HUNT & COMPANY.



Durable, attractive and absolutely fireproof

AMBLER Asbestos Shingles have every characteristic that is looked for in shingles or roofing. They are durable, attractive and absolutely fireproof.

FIREPROOF AMBLER ASBESTOS SHINGLES

Ambler Asbestos Shingles. Made in three styles, four permanent colors, Newport gray, natural slate, red and green. Lie snug to the roof, forming water-tight and fire-tight covering.

Ambler Asbestos Building Lumber. For siding, partitions, fire doors and wherever fire resistance is essential.

Ambler Asbestos Corrugated Roofing and Siding. For industrial, railroad and farm buildings.

Ambler Linabestos Wallboard. Wherever a superior flame-proof, fire-resisting wallboard is wanted.

Send for Samples and Literature showing reproductions of installations.

ASBESTOS SHINGLE, SLATE & SHEATHING CO.

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BRANCH OFFICES:—Atlanta—Boston—Buffalo—Chicago
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Estimates From Architect's Plans Our Specialty



MILL WORK

Exterior and Interior Trim and Hardwood Doors, Sash Mouldings, Bank, Office and Store Fixtures.

Lumber, Shingles, Lath, Roofing, Paints, Oil, Glass.

Bird & Son Roofing, Cornell Wall Board.

Thomasville Variety Works
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ESTABLISHED 1916

F. GRAHAM WILLIAMS BRICK CO.

INCORPORATED

CANDLER BUILDING IVY 1733 ATLANTA
HOLLOW TILE FACE BRICK "FISKLOCK" BRICK

You Who Are About to Build

For Permanent Construction
To Eliminate Maintenance

Use Clinchfield Portland Cement



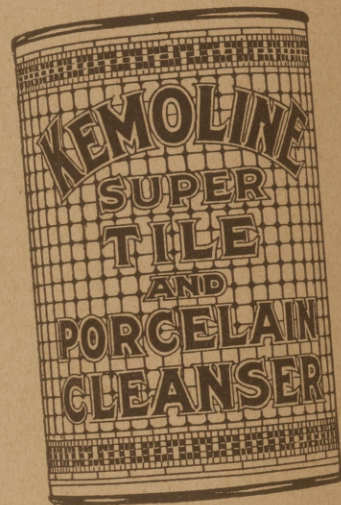
CLINCHFIELD PORTLAND
CEMENT CORPORATION

Sales Offices and Mills,
Kingsport, Tenn.

On Every Job

where you install Bath Room Fittings or make repairs, you have a customer for

KEMOLINE Tile and Porcelain Cleanser



IT removes all stains from Bath Tubs and Closets, no matter how long standing. Contains no acid. Guaranteed not to scratch or injure finest tile or porcelain work. Cuts all grease and dirt and will not harm the hands.

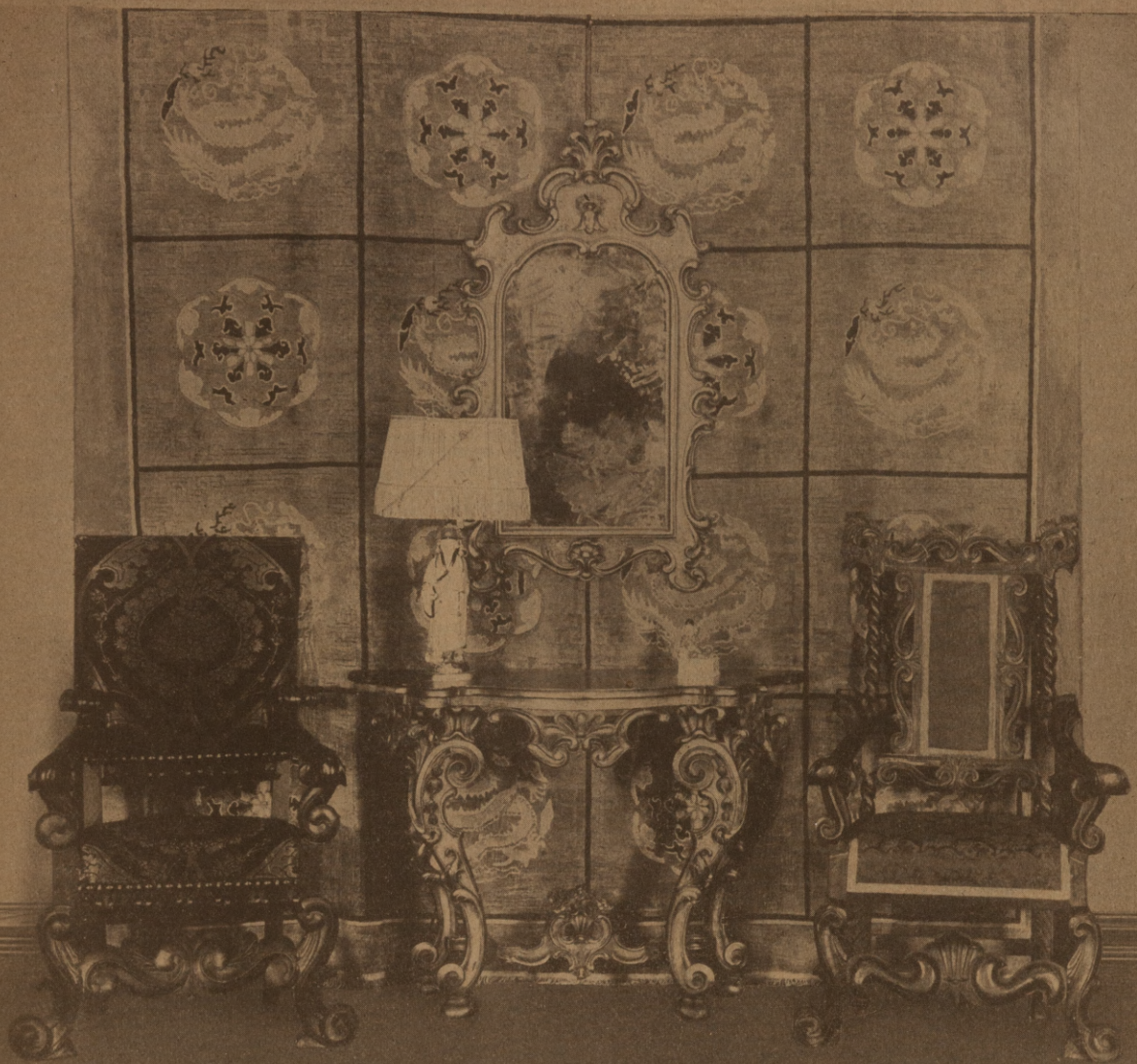
KEMOLINE makes a strong appeal to the housewife, as it cleans and polishes all household fittings and utensils.

A single demonstration sells it and brings repeat orders. Simply wet an article, sprinkle on it a small portion of KEMOLINE, rub with cloth or brush and the work is done. It is pure white, fine and soft—floats away instead of settling in trap and eventually stopping the pipes, as other powders do. KEMOLINE is put up in 1 lb. cans—convenient size.

Our Selling Plan allows the plumber a good profit. Write for details.

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Manufacturing Chemists
CAMDEN, NEW JERSEY



At the Notman Showrooms
the architect and decorator will
find a collection of fine furniture
which should prove of inspirational
value for the treatment of interiors.

A. H. NOTMAN & COMPANY

Adaptations and Replicas of Historic Furniture

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Selling Agents for John Miller & Co.



RELIABLE FLUSHING EQUIPMENT

Why not specify the latest and best, especially when it costs no more than inferior equipment? If you KNEW there is a direct pressure flushing valve far superior to any other valve on the market—a real, modern successor to the unsanitary closet tank—you would give your clients the benefit of your knowledge, wouldn't you? Well, let us show you that the

WHITE FLUSHING VALVE

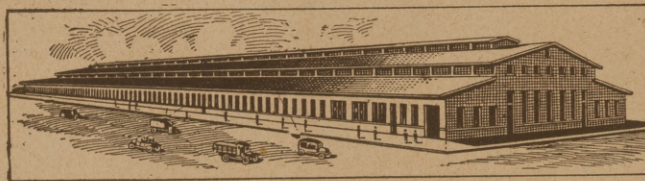
is the best flushing equipment that money can buy. Can be installed in cottages as well as in hotels, apartment houses and office buildings. Can be set for any quantity of flush; wastes no water; positive action; practically noiseless; always ready for operation; requires no extra space for installation; an ornament to any bathroom. Send for circular.

The White Flushing Valve Mfg. Co.

4023 Walnut St., Denver, Colorado.

INTERNATIONAL STEEL & IRON CO., Evansville., Ind

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Warehouse and Fabricating Plant—Evansville, Ind.

IRON AND STEEL

Standard and Bethlehem carried in Warehouse stock for Immediate Shipment.

STEEL FOR BRIDGES AND BUILDINGS

Fabricated Promptly.

Elevators, Cornice and Skylights
Steel Ceiling

STORE FRONTS
Write for General Catalogue

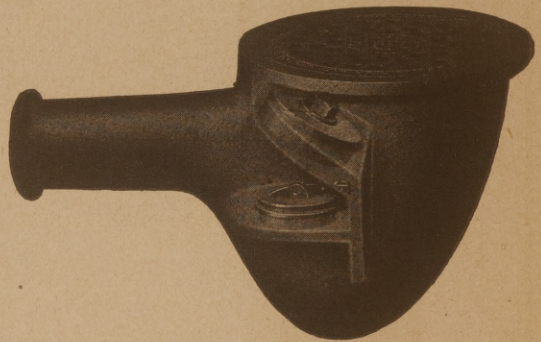
Millwork and Glass, Ornamental Iron
Certain-teed Roofing.

**SIGNET
FLOOR DRAIN**

The quality of material, the superiority of design, the absolute safety and reliability of operation, recommends the Sigret for all high-class work where permanent satisfaction is sought.

Write for circular

CRAMPTON-FARLEY BRASS CO.
KANSAS CITY, MO.



THE BACK WATER TRAP DRAIN OF QUALITY

DID YOU EVER GET ANY?

UP-TO-DATE ARCHITECTS DO.

They want Guaranteed for Strength, Comfort, Beauty and Economy

When specifying seats for a job get our Catalogue and name of nearest jobber who handles our line.

A Satisfied Client is Your Best Ad—You Are always talked of: Good or Bad

Satisfaction Guaranteed By Us.

KNOTT MANUFACTURING CO., Main Office and Factory, TELL CITY, IND.

Sykes' Expanded Cup Metal Lath Makes Permanent the Charm of this Home



*Residence, Mr. R. E. Rollins, Des Moines, Ia.
Architects, Vorse, Kraetsch and Kraetsch*

*Contractors, Wm. Knudson and Sons
Stucco on Sykes Expanded Cup Metal Lath*

THE charm of this delightful home is due to many factors. The long, broken roof-lines, the beautiful colonial entrance, the casement windows the profusion of shrubbery—all lend their influence to the total effect.

And here you see stucco at its best. The permanence of the stucco is insured by Sykes Expanded Cup Metal Lath.

When applied to the sheathing, Sykes Expanded Cup Self-Furring Metal Lath gives a perfect and uniform key without furring strips—a considerable saving in time, material and labor. It also gives an absolutely uniform thickness of stucco, with its backbone of permanent steel.

For back-plastered stucco construction too, the unusual weight and rigidity of Expanded Cup makes it the ideal lath.

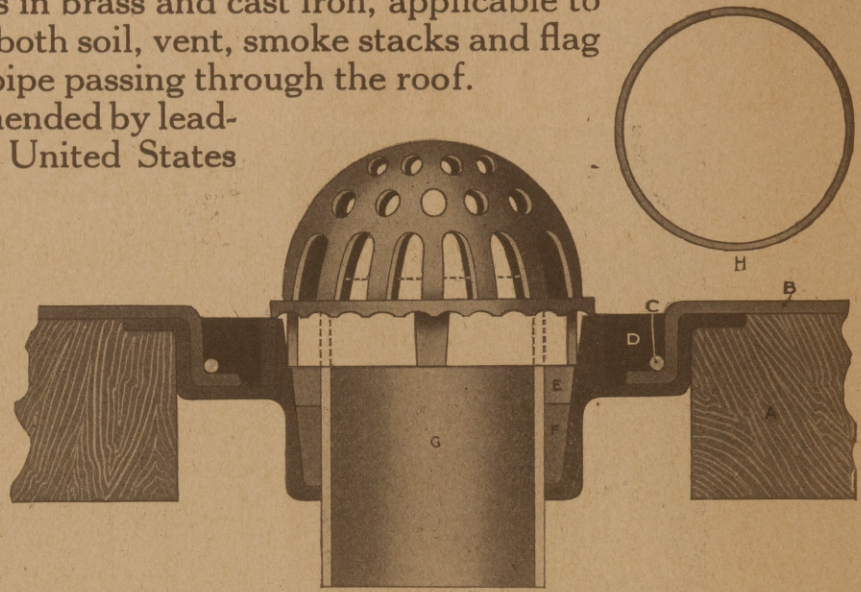
**We have a distinctive type of lath
for every place where metal lath is
used.**

Sykes Metal Lath & Roofing Co.
513 Walnut Street, Niles, Ohio

MODERN ROOF FLANGES

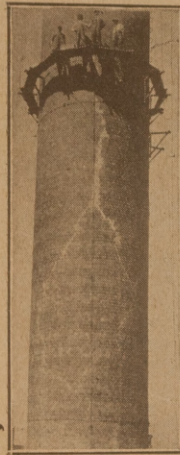
Made in all sizes in brass and cast iron, applicable to all pipe connections, both soil, vent, smoke stacks and flag poles or any type of pipe passing through the roof. Adopted and recommended by leading architects in the United States and Canada.

Special attention called to the expanding and bonding conditions above the roof. No complicated connections in attic or under ceilings. Attachments all made plain for operator.



Write for Bulletin 29-A, descriptive of the full line, to the manufacturers

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 Mechanicsville, N. Y., U. S. A.



Hoosier Stack & Construction Company

Builders of

RADIAL BRICK CHIMNEYS

for

Power Plants and Other Purposes

SPECIALISTS IN REPAIRING DEFECTIVE CHIMNEYS

Inspection and Repairing While Your Plant is in Operation

Prompt repairs may save your chimney from becoming insecure and dangerous. A slight defect, a break in the binding forces of its masonry, will impair and destroy the draft, and waste fuel.

If you care to have us make an inspection of your chimney just drop us a line, and we will then inform you what an inspection will cost.

Correspondence is Solicited

HOOSIER STACK AND CONSTRUCTION COMPANY

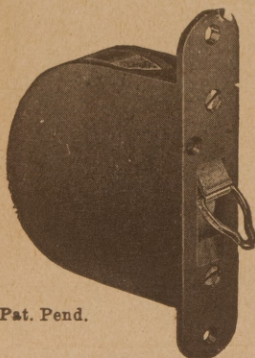
232 Hume-Mansur Bldg.

INDIANAPOLIS, IND.

Phone Main 2985



Caldwell Sash Balances Uniform Mortises



Pat. Pend.

For use in all classes of new work. Box frames unnecessary. Mortise cut at mill reduces cost of installing.

Counterbalance sashes perfectly unaffected by atmospheric conditions.

Cheapest method for modernizing old window, as alterations in sashes and frames are not necessary.

Have stood the test of service upwards of 33 years.

Write for Circular.

CALDWELL MFG. CO.

39 Jones St. Rochester, N. Y.

THE SINK TRAP YOU WANT

The MARVEL Adjustable Non-syphon Sink Trap is built on up-to-date, substantial lines that assure lasting service. Easily installed. Neat appearing. Cast iron aluminized.

7 1/2 inches over all. 3/4 inch seal. Brass Clean Out.

The MARVEL helps you to make a friend of every customer.

Write for catalog or ask your jobber.

Detroit Marvel Brass Mfg. Co.

Trap Specialists

Cor. Rivard & Sherman
 Detroit, Mich.

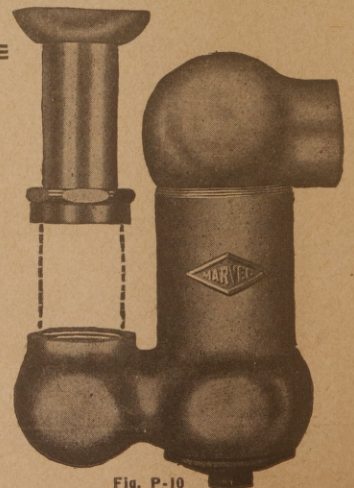
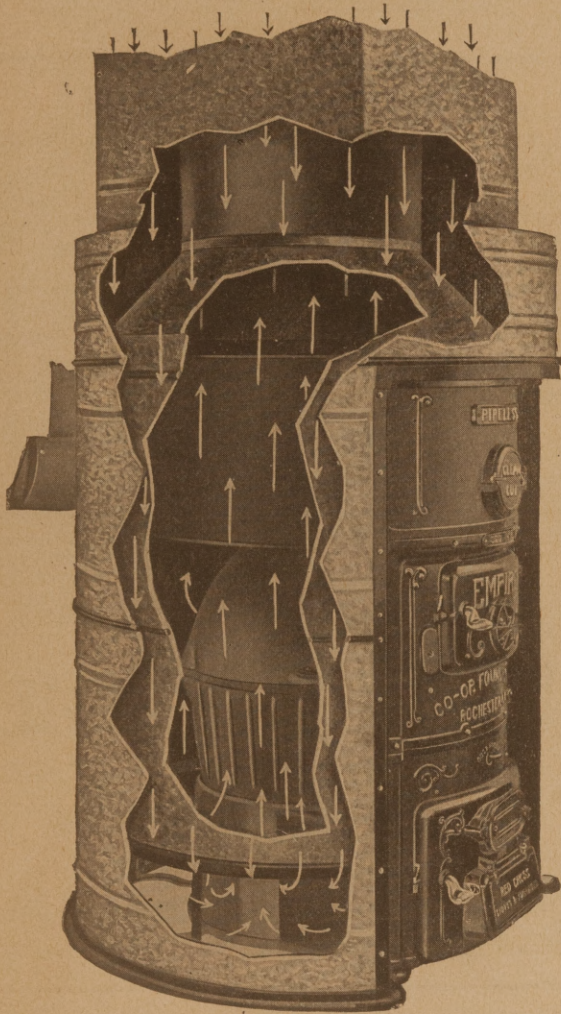


Fig. P-10
 Patented

Red Cross Empire Pipeless FURNACES

Dominate the Pipeless Field!



Because:

The Empire Pipeless is the acknowledged standard of Pipeless Furnace construction.

EVERY PART OR SECTION IS JUST EXACTLY THE PROPER SIZE AND WEIGHT, MAKING A PERFECTLY BALANCED FURNACE OF IDEAL PROPORTIONS.

What's inside the casing counts!

That is the vitally important part of the heater. Investigate for yourself and be convinced!

We invite comparison on the Red Cross Empire.

Increase your

SALES
SATISFACTION
and **SERVICE**

by installing

The Red Cross Empire Pipeless.

THERE IS A RED CROSS FURNACE FOR EVERY NEED.

We make the Empire Pipeless in sizes up to 33-inch fire pot and are also the manufacturers of the well known Red Cross BERMUDA, AJAX AND EMPIRE WARM AIR PIPE FURNACES.

WRITE FOR LITERATURE AND OPEN TERRITORY.

Co-Operative Foundry Co.

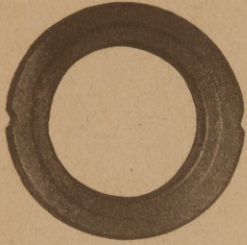
ROCHESTER, NEW YORK.

Western Branch, 505 South Clinton Street, Chicago, Ill.

Makers of the Celebrated line of Red Cross Stoves, Ranges and Furnaces.



Snow Flexible Flange Closet Gaskets.



They make water closet joints that a plumber can be sure about. They stay where he puts them, are non-porous and absolutely prevent the escape of sewer gas thru the closet joint. They adhere to all materials making sealed joints which are permanent.

MADE FOR ONE JOB, BUT MADE TO DO THAT JOB RIGHT.

For Particulars write—
J. W. Gannon
30 Church Street,
New York City.
Chas. W. Badger
122 So. Michigan Ave.,
Chicago, Ill.

Snow Flexible Gasket Co.

1033-35 No. Clark St.,

CHICAGO, ILLINOIS.

SILVER LAKE A Sash Cord

The guaranteed sash cord (since 1869 the standard) not only outwears common cords, but outwears chains and ribbons. The name Silver Lake A is printed on every foot of the genuine. Guaranteed full lengths.

Silver Lake Co.
Newtonville, Mass.

The Practical Workman is Sure to know the Reason Why

STRUCTURAL IRON WORKS

FOUNDRY AND MACHINE SHOPS

GRAINGER & CO., Inc.

Established 1833. Tenth St., Louisville, Ky.

**THE STEPHENSON
Underground Garbage Receivers**

The sanitary way to store garbage.

That filthy garbage pail shows up again this Spring. We have had fifteen years experience eliminating them. Thousands of satisfied customers appreciate the change.

Our truck will wheel your ash barrel up or down steps.

Our Spiral Truss Ash Barrel is lighter and stronger, a real investment.

Send for catalogue on each. Goods sold direct. Look for our Trade Marks.

C. H. STEPHENSON, Mfr.

31 Farrar St. LYNN, MASS.

**“HAYNES” & “HOFFMAN”
Specialties Save Fuel**

Our Booklet on modulated and Vapor heating is full of instructive matter. It also illustrates and describes these specialties. Send for your copy.

Haynes Selling Company.

1711 Sansom St. Philadelphia, Pa



MANUFACTURERS

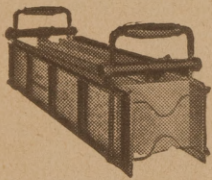
PURE BURNT LIME

**For Agricultural, Building
and Chemical Uses.**

Staunton Lime Products Co., Inc.

Phone 1078 STAUNTON, VA. P. O. Box 377

**Build the Hollow-Wall-Way with
UNIVERSAL
Cement Molds**



and get dry, warm, frost-proof hollow concrete walls. Best and most sanitary for all kinds of buildings.

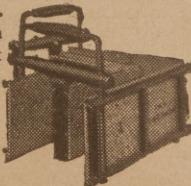
Warmest in cold weather; coolest in warm weather. Cheapest, quickest and most scientific way of building.

Send for circulars.

The Universal Cement Mold Co.

North Milwaukee

Wisconsin



**STRUCTURAL STEEL
ORNAMENTAL IRON**

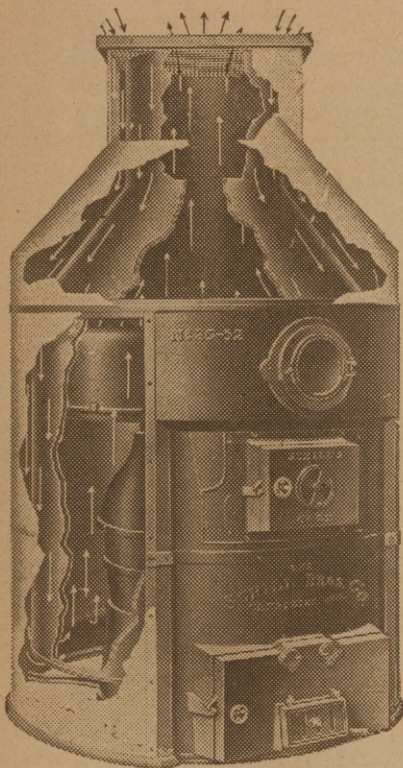
Snead Architectural Iron Works

LOUISVILLE, KY.

Plain or Fabricated Steel for Immediate Shipment.

Cozy { The Perfect Pipeless Furnace

Stands for the last word in economical and healthful Heating

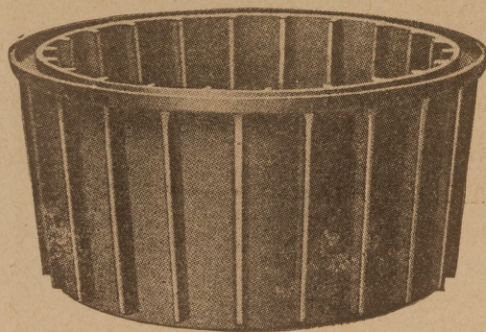


Twenty-five years experience in "Hot air heating" coupled up with more than five years of practical study of the Pipeless heater, in which we have put to a thorough test every known idea pertaining to this wonderful system and enables us to offer "a most up to the minute heating plant."

Built from the foundation up with but three ideas in view, viz.: To give the public a heating plant so **thoroughly constructed** that for years there will be no thought of further heating, **Simplified mechanically** to avoid unnecessary work while installing and **Perfect insulation** to assure as near 100% efficiency, as is possible.

Many thousands of "The COZY Pipeless" are now being used in the East and Middle West which opens up a vast field for new business.

Our liberal offer to dealers and builders will interest you. Our National Advertising campaign will help you. Write today for our catalogue and proposition.



The Schill Bros. Company

CRESTLINE, OHIO.

J. H. Taylor, Reistertown, Md., Eastern Sales Manager

Cloister Brick

With brick work as with clothes, real enduring beauty results from soft, refined color values and a rather conservative texture. Vivid coloring and a bizarre ensemble may captivate for the moment, but one quickly tires of this startling type of display. It is not in good taste.



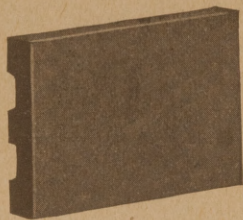
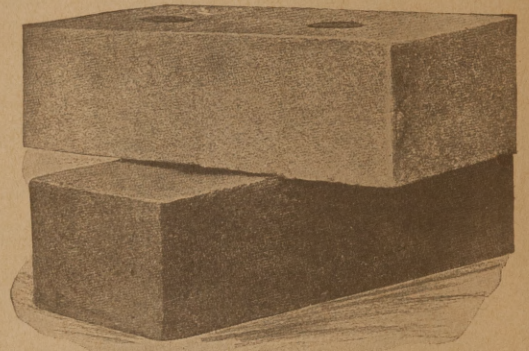
Cloister Brick possess a coveted character. The soft, velvety texture is always pleasing—and unobtrusive. The four subtle shades of red and brown are rich and full—but not extreme. When you select *Cloister Brick*, you know you are safely following the dictates of good taste.

Address Dept. 48 for a "Cloister Brick" Book.

WESTERN BRICK COMPANY

Danville, Illinois.

Capacity One Hundred Million Annually.



QUARRY TILES For Floors

of Porches, Terraces, Corridors, Kitchens,
Laundries, Hospitals, Power Houses,
Waiting Rooms, Etc.

Ask for Illustrated Catalog No. 7.

THE UNITED STATES ROOFING TILE CO.
PARKERSBURG, W. VA.

LOOKOUT PARAMOUNT MORTAR COLORS "WILL NEVER FADE"

IF given a square deal at mixing box. Use 100 lbs. per 1000 brick, and every job will be absolutely satisfactory.

Four colors—Chocolate, Buff, Black, Red.

The Lookout Paint Mfg. Co.

CHATTANOOGA,

TENNESSEE

Perforated Radial and Common
Brick

CHIMNEYS

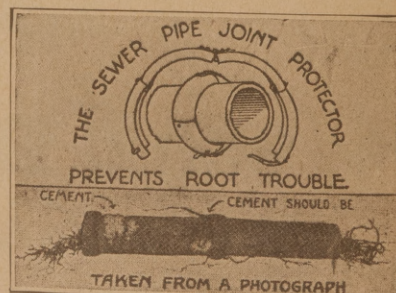
American Chimney Construction Co.

Suite 407-408 Oxford Bldg., Chicago, Illinois

All Repairs Made While Chimney Is in Use

Cleveland, Ohio, Branch: 505 Superior Building

The Stone Pipe Joint Protector



is made of 20 gauge galvanized sheet iron and laps over at the quarter connections.

It is flexible so as to allow edge of Protector to fit tight to any untrue pipe.

Also make special "Protector" for connections of 6-inch stone pipe to 4-inch iron pipe.

Write for booklet and prices.

This shows cement removed while installing.
609 PLYMOUTH AVE.

FRED LANG
MINNEAPOLIS, MINN.

Good as It Looks!

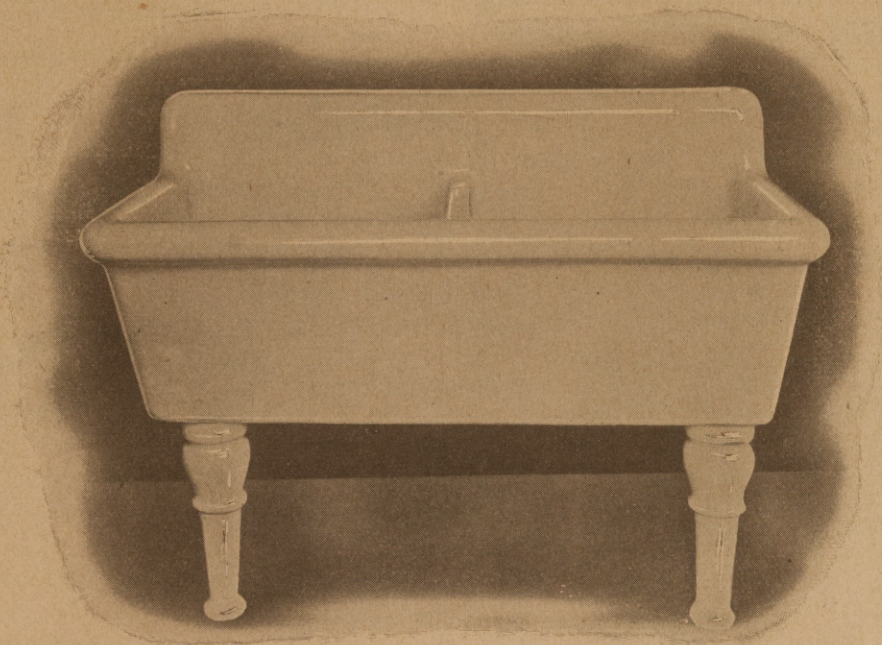
The difference in grade between Fords Porcelain Ware and the ordinary porcelain ware can readily be told at a glance. Its pure white, highly glazed finish, both inside and outside, lends the appearance of cleanliness, sanitation and refinement so much desired for the pantry, kitchen and bathroom.

FORDS PORCELAIN WARE

carries quality all through, as well as showing on the surface. The materials used in the manufacture are the best that money can buy. We have learned by experience that it pays in the final analysis to spare no expense to produce the highest quality products.

Fords Porcelain Ware costs very little more than other brands and is well worth the difference.

Let us tell you about our special glazing process and other interesting facts regarding Fords Porcelain.



Fords Porcelain Works

Perth Amboy, N. J.

New York Office: 103 Park Avenue

E. F. Disbrow, General Sales Manager

Largest Manufacturers of Porcelain Wash Trays in the World



Profit by These Five Big Selling Features

1. Highest Grade Fencing.
2. Handsome Construction.
3. Durability.
4. Reasonable Prices.
5. Quick Service.

It's the easiest thing in the world to sell our fencing because of the superiority of our product over all other makes.

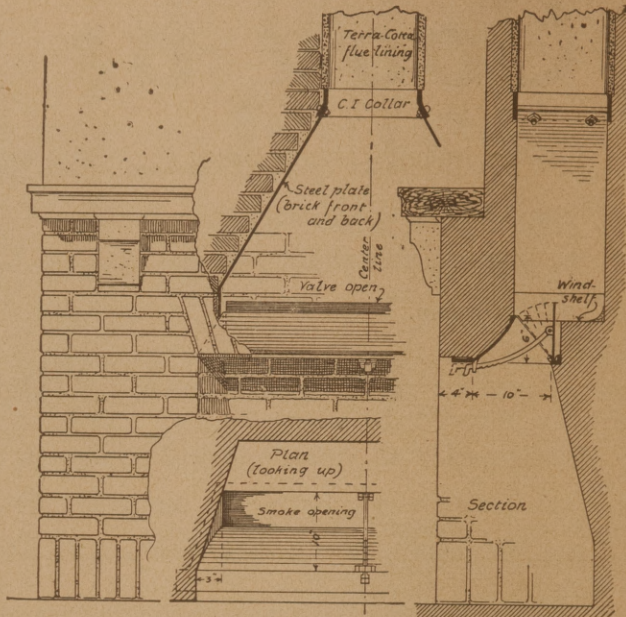
And all you need is our catalog—handsomely illustrated, with full information and details as to YOUR PROFIT.

WRITE TODAY

CINCINNATI IRON FENCE CO.

3306 Spring Grove Ave. Cincinnati, Ohio
 Manufacturers of Ornamental Iron Work, Plain and Ornamental Steel and Iron Fencing, Flower Vases, Settees, Wire and Iron Window Guards, Pipe Railing, Folding Gates, etc.

The Covert Fireplace Damper

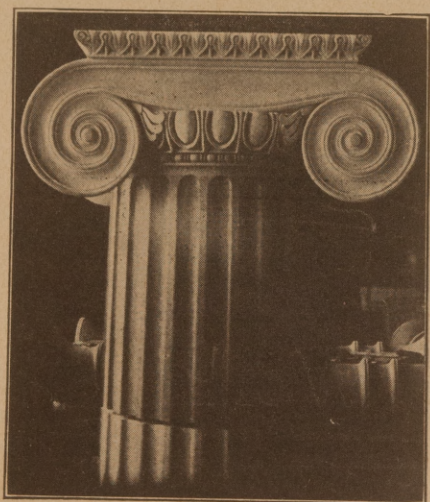


Proper construction of a fireplace with the Covert Damper and Steel Smoke Chamber. Further details are shown in our booklet, sent free.

Send for our free booklet "Hints On "Fireplace Construction to

THE H. W. COVERT COMPANY

Dept. S
 139 East 46th Street NEW YORK



Good carving adds the finishing touch to the whole exterior of the building. Our carving department represents just one of the features of Ingalls service.

Woodworkers and Machinists

Write for this Complete Catalog



CATALOGUE No. 27

T. B. RAYL CO.
 Grand River at Woodward
 Detroit, Michigan

T. B. Rayl Company
 Grand River at Woodward, Detroit, Mich.

Southern Architect and Building News

WITH WHICH IS CONSOLIDATED "SOUTHERN BUILDING RECORD"

VOL. XLVII.

DALTON, and ATLANTA, GA., SEPTEMBER, 1921.

No. 5

The Southern Architect And Building News

Southern Architect and Contractor, Atlanta, Ga., and Southern Building News, Memphis, Tenn., and Southern Building Record, Nashville, Tenn., Consolidated.

Entered as second-class matter May 27th, 1911, at the Post Office at Dalton, Ga., under the act of March 3d, 1879.

This paper is issued and mailed from our printing house at Dalton, Ga. Business office, Atlanta, Ga. All letters should be addressed to the Atlanta office.

Price \$2.00 Per Year.

TO OUR ADVERTISERS

Our advertisers are requested to have copy and cuts for changes for advertisements in this office not later than the 5th, preceding the month of publication.

We cannot be responsible for changes not made, when copy and cuts are received later, or submit proof.

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Advertising.

The opportunity for wise advertising is greater today than ever in our history.

Everybody realizes that business conditions are not what they should be and as a result it seems that practically all business concerns have cut down their advertising appropriations to rock bottom. This is a big mistake and is hurting business in general throughout our country.

Greater good can be accomplished for individual business interest and for the country as a whole, by well planned and comprehensive advertising by the big industries, manufacturers and merchants, both wholesale and retail.

When business is on the boom and everything is easy sailing there is no need for large advertising campaigns. It is a very unwise policy for

business men to cut down their advertising, because business conditions at present do not seem to warrant the expenditure of the money it takes to advertise.

The way to create business is to create a spirit of doing things, and when this spirit is manifested throughout the United States then we will see business begin to boom just as it did during the war.

This country is too rich in gold, manufacturing industries and agricultural products, for the American people to hold their hands and do nothing, bemoaning their fate because business is not just what they would have it be.

This is a season when large volumes of business should be coming into every industry. No man's problems are too local or too small not to be profitably aided by sensible advertising.

It seems that men have lost all confidence in the business world, and are sitting ideally by, waiting for the other fellow to strike the blow that will put business back on its feet, and restore that old time confidence which existed in this country not so many months ago.

When everything goes wrong and your efforts seem fruitless then is the time to put your shoulder to the wheel and push. This is the only way to overcome the difficulties that confront you.

When the world war broke out everything in this country was running smoothly, business was good and everybody wore a smile, but when this great event happened, and a little later the United States plunged into the war, then there came a dark cloud over the horizon of the business world, and the old time smile left the faces of the American people.

The greatest problems that ever confronted the people were thrust upon them during the years of the World War. These problems through serious thought were solved, and unheard of business deals were put through, so immense were they that we could hardly realize that what we saw was true.

We are up against problems at the present time that are equally as great as those during the war. What are we going to do?

What the business men of this country need to do is to regain that old time confidence, push their individual business to the front and create a demand for their products.

Every concern that begins an extended advertising campaign now is helping to start the movement that will bring back confidence in the business world, which will later result in a large vol-

ume of business not only to the individual concern but to others also.

In a recent issue of Motor Boat three business men express their view on advertising. We quote:

1—"We do not feel we should decrease publicity. Our advertising expenditure should be increased to increase business."

2—"Cutting down advertising would only increase the cost of selling, therefore we advertise heavily when business is hard to get and go easy when it is coming anyway."

3—"We kept our advertising appropriation down to bed rock when there was practically no sales resistance, conserving our funds for harder times. We feel that we now owe it to our distributors and dealers and to ourselves to insure a healthy flow of business by consistent, well-directed, forceful advertising.

When you advertise in The Southern Architect and Building News you waste no circulation, you are making an appeal and offering your goods direct to the man that wants your specific product.

Advertising in a carefully selected medium insures greater results and is money well spent.

A Call For Homes.

It has been estimated that the nation needs today one-million-five-hundred-thousand homes.

What is to be done to meet this enormous demand for houses to shelter our American people, who cannot find homes or at least suitable ones to live in?

"People are sleeping six, eight and ten in a room; men, women and children not even related to each other," says E. J. Rosenthal in a report to the Association of Commerce of Chicago on the housing situation in that city.

The problem is a hard one which the contractors, builders, and lumber supply concerns of our country must solve.

During the war every energy was turned toward destruction, millions on top of millions of dollars were spent to construct ships, temporary buildings to house soldiers, and instruments of war. The war is over now and it is high time we direct our energy, money and thought towards constructing places of abode for our homeless people.

The present condition is not only of immense importance to those seeking homes, but presents a great opportunity to those interested in the Building industry throughout our country for an increase in business.

Are we going to repose in solitude to the crying needs of our people, at the same time let the greatest opportunity of an age go unnoticed?

There comes from the throats of hundreds and thousands of husbands and wives, the cry for homes and more homes and still more homes, and the cry echoes around the globe, yet it goes unnoticed.

There must be something done to relieve this condition—some idea advanced—some definite step taken.

In order to solve the problem and meet the demands, it is necessary that, there be more active and sound business co-operation between the contractors and workmen, the building supply dealers, those seeking homes and all others interested in the building industry, and welfare of the people.

Recently in Montgomery, Ala., there was held a "Build a Home Show", which inspired a number of prospective builders to erect homes. As a direct result of the show at least thirty new homes were built in that city during the month of July. Consequently the contractors, building supply concerns and other supply dealers have been enjoying an extended amount of business.

The idea affords food-for-thought among those interested in building throughout our southern states.

It might be a wise and profitable thing for the building supply concerns and the contractors to unite with the Chamber of Commerce in their respective cities and put on such a show as was done in Montgomery.

Something must be done, we cannot delay longer while the situation every day becomes more serious.

The HOME is the birth place of the greatest industrial developments of a nation. Without homes there can be no prosperity.

Though rich in gold, agricultural products and manufacturing industries, yet we are neglecting the greatest of all riches—THE HOME.

PENNSYLVANIA STRUCTURAL SLATE CO., Inc.

BLACKBOARDS — URINAL — CLOSET — SHOWER — STRUCTURAL SLATE FOR ALL PURPOSES
STALLS STALLS STALLS

"Yours for Prompt Service"

DOME BLDG.—Main Office

EASTON, PA.

Frost's Frost-Proof Concrete Walls

Contractors: By building with Frost Hollow Wall Forms, you can build a double wall reinforced concrete building to compete with the cost of frame construction.

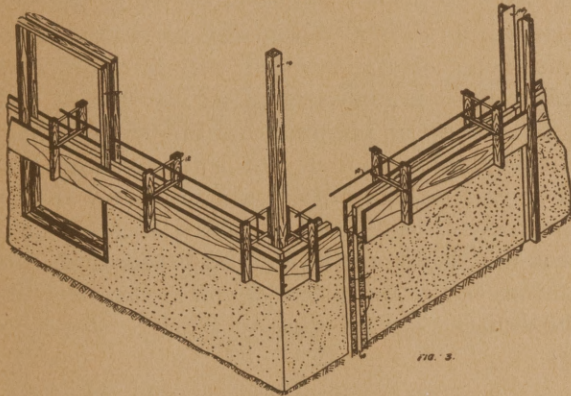
Moisture-proof, Fire-proof, repair proof walls. Save paint, lath, time and labor to you. Save repairs, fuel and insurance to the owner.

Forms adaptable to any size building, adjustable to any thickness wall. Built of poured concrete, reinforced three ways, with continuous dead air space makes the most desirable method of building construction. Simple to use. Easily adjustable. No skilled labor required. Method has been tried and proven.

Write for complete description of method and its operation, photos showing work done, and costs.

Hollow Concrete Wall Co.

H. T. FROST, Pres.
Mitchell, So. Dak.

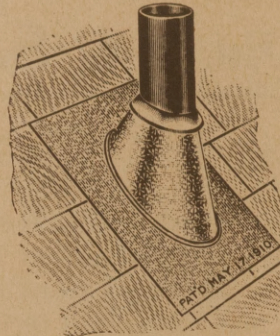


Don't be content with ordinary Roof Flashings. Specify and use the reliable

"SIMPLEX"

Made in

ALL LEAD—COPPER—GALVANIZED IRON



Every
Flashing
Adjustable

Every
Flashing
Perfect

If a better flashing is ever produced, it will still be called the "SIMPLEX."

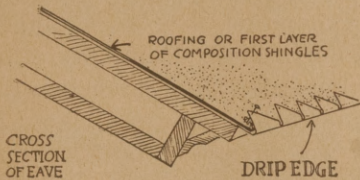
Manufactured only by

SIMPLEX MFG. COMPANY,

313 So. Clinton St.

CHICAGO, ILL.

W. H. CUNNINGHAM & CO.,
Canadian Representatives, Toronto, Can.



Drip Edge Sells Easily

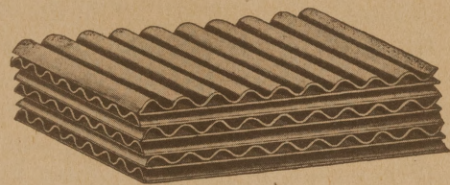
It neatly finishes and securely fastens the edges of composition roofings and shingles, providing a thorough drain. Carries the water well beyond the face of the wall. Saves nails, and what's more the wind won't ruffle up a DRIP EDGE roof.

DEALERS!

Drip Edge is sold through dealers and carries a margin of profit that makes it an attractive proposition to handle. Write or wire for prices.

MILLER & GLEASON
OLEAN, N. Y.

Asbestos Air Cell Blocks

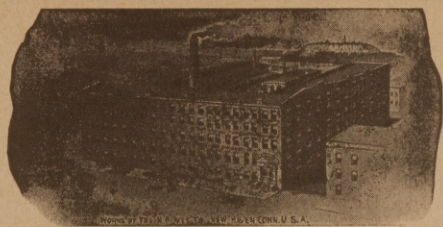


For lining ceilings, covering boilers and other hot surfaces these blocks have proven to be very efficient. They are made of corrugated asbestos paper which leaves small spaces for confining of air.

Whenever in need of Pipe and Boiler Coverings or kindred articles, remember that there is a "Diamond N" product that is built for that particular purpose. If a job puzzles you, ask us what we have for it.

Write for prices

Norristown Magnesia & Asbestos Co.
Norristown, Pa.



THE H. B. IVES CO.

New Haven, Conn., U. S. A.

ESTABLISHED 1876

INCORPORATED 1900

Manufacturers of

BUILDERS' HARDWARE

HIGH GRADE WINDOW AND DOOR SPECIALTIES

Write for Illustrated Folder.

Others Discuss Some Timely Topics

Who is Responsible for High Costs?

IT is generally conceded even by wage-earners themselves that the continuing wage reductions are necessary to bring the country back to a sound financial basis and to permit products to be manufactured at a cost that will permit their ready sales.

That, of course, is the obvious and, therefore, the first thing to be done. Yet it is only a step in the right direction, as shown by a survey of the Committee of the American Engineering Council. This committee reports that there are other wastes due to inefficient management, amounting to millions of dollars annually. The committee states, "More than 50% of the responsibility for these wastes can be placed at the door of the management, and less than 25% at the door of labor."

This is a very strong statement, yet there is much truth in it. And it points directly towards a condition that prevails in the building field just as it does elsewhere.

No contractor will willingly allow the elusive dollar to slip through his fingers if he can help it. And yet more than one dollar is charged to operating cost when it could either appear as profit or make itself felt in reduced selling price if the builder was wise enough to use various kinds of labor-saving equipment that are at his disposal.

Perhaps it is a portable saw rig, a new kind of scaffolding, a more economical type of concrete form, or even a new material that will cut the cost of each building.

Suppose that only \$50 is saved on each building by using a certain improved type of equipment—and any good equipment will do more than that. That saving means a clear profit of \$2,500 on fifty buildings, a profit that the contractor can either share with the owner in the form of a lower bid—or pocket.

We know one firm of builders that can build a house for \$8,500 that other contractors in the same town can't touch for less than \$9,500. And they make money, more than their competitors.

They do it by developing certain men as specialists in different phases of work, by careful cost keeping that shows immediately if the work is going over its proper amount, by using the best and latest equipment chosen for its suitability to the character of the work it will be most used for, and by routing equipment so that it will be kept as busy as possible and not stand idle.

It is by these tactics, not by skimping, that builders can logically quote a low figure. Every builder owes it to himself to follow such a policy, for it is the surest way to build a reputation. And reputation is the thing that dictates the selection of the builder on all quality work. (Building Age.)

Builder and Contractor Advertising Pays.

WHEN contractors like the Barney-Ahlers Construction Company, New York, and the Ferro-Concrete Construction Company, Cincinnati, indorse the statement that advertising for the builder and contractor pays, and back it up by saying that it has increased the total volume of their business, in some cases 50%, it is time to sit up and listen.

Publicity is the life of financial success in business. The builder who keeps his work before the public will have a larger bank account at the end of the year than the man who ignores the possibilities of consistent advertising.

On page 25 of this issue Ludolf M. Hansen gives proper advertising a large share of the credit for the rapid successful growth of the Ludolf M. Hansen Company, Green Bay, Wisconsin. Twenty-six years ago he was an immigrant cabinet maker. Today his yearly contracts top the million-dollar mark. In his interview with Building Age, Mr. Hansen lets the public in on some of his secrets.

The benefits reaped by these large contractors are to be had by the small builder if he will but use some of their methods.

To be continuously profitable, advertising must be honest. Where facilities are poor no amount of advertising will compensate. Adver-

The IMPROVED Rapid Floor Surfer



will surface *right up to the wall or baseboard* without the use of Edge Roller. Just the machine you would want for surfacing all kinds of floors, whether old or new. Will smooth down rapidly and easily all oints or warped edges. *Perfect results guaranteed.* More than 20,000 in use.

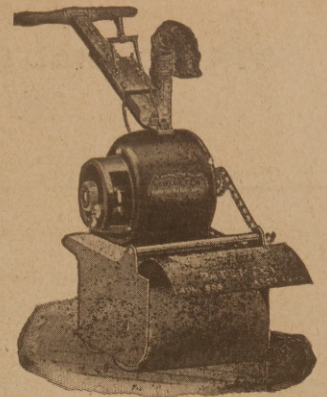
Send for our free trial offer.

M. L. SCHLUETER

221 W. Illinois St.^{W. 4}

CHICAGO, ILL.

Phone Main 2349



Made in several sizes.

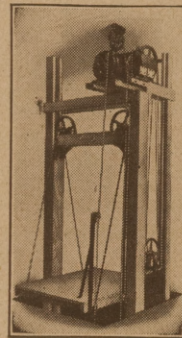
Several sizes. Extra 2-disc attachment can be removed making a 2-disc machine.

For Estimates on
GRAVEL ROOFING

Write

ODEND 'HAL-MONKS CORPORATION

Norfolk, Virginia



Kimball ELEVATORS

A Complete line

Passenger	Handpower
Freight	Electric
Automobile	Dumbwaiters

ELECTRIC ATTACHMENTS
For Hand Power Elevators
GET OUR ESTIMATES

Kimball Bros. Company

Established 1883

Council Bluffs, Iowa

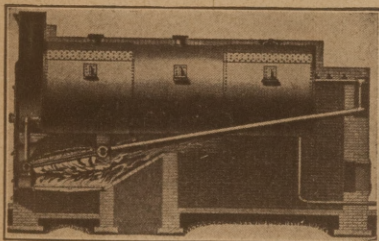
1025 9th Street.

Our No. 3 Electric
1000 lbs. 50 F. P. M.
Practical-Economical Kansas City
Inexpensive 610 Delaware

201 Scott-Thompson Bldg.,
Oklahoma City, Okla.

Chicago Down Draft Furnace Co.

115 S. Clinton St., Chicago, Ill.



Phone Franklin 4450

Manufacturers
of the
**IMPROVED
HAWLEY
DOWN DRAFT
FURNACE**

Coal Saving and
Smokeless
Furnaces

For High and Low
Pressure Boilers.

NOT a substitute for a bed, but a real bed; not attached to door or door jamb; can be moved to most desirable sleeping part of the room, eliminating the disagreeable feature of being confined to just one spot. Requires only standard size stock door or 2'6" by 6'8" in closet where bed is concealed.



Send for closet details and arrangements
-DETACHABLE-

BROWN BED CO.

-DISAPPEARING-

KANSAS CITY NEW YORK CHICAGO
201-4 Gloyd Bldg. 16 Warren St. 56 W. Washington St.

SAFETY FIRST

You Want Asphalt Shingles to LAY SNUG
MONARCH HEXAGON SHINGLES



Nailed Under Butt Lowest First Cost
Cannot Curl or Blow Up Guaranteed Ten Years

STOWELL MFG. COMPANY

810 Culver Ave.,

Jersey City, N. J.

ASBESTOS ROOF COATING

High grade paint for all
purposes and Asbestos
Roofing Cement.

Manufactured by

THE OHIO PAINT WORKS,
Cleveland, Ohio.

DIETRICH BROTHERS

STRUCTURAL AND ORNAMENTAL IRON AND STEEL WORKS

Large Stock of Standard and Bethlehem Shapes.
Concrete Reinforcements
BALTIMORE, MD.

tising will not make a profit on contracts that are not carried to a successful conclusion. Good judgement, good workmanship, and real service are necessary before advertising can help. They must exist to justify advertising, for without them there is nothing to advertise.

Moreover, a well-planned advertising campaign gives personality to an organization. The man in the street, in the country, or in the city, can visualize and understand the relation between the advertiser and the house he wants to build himself.

On page 48, also, Mr. Ray Watson, which, by the way, is a pen name for a certain specialist in advertising and sales promotion work, outlines a plan of advertising that is within the means of the small builder and that will bring in business.

Advertising for the builder means to create a demand for his service to execute the work. The present demand for building, alterations and improvements today is keen, but most of this work is going to builders who advertise. The builder who keeps himself before the public with records of how expeditiously he can complete a structure and the distinctive features of his work, organization, and service, is that much ahead of the builder who has neglected the opportunity offered by advertising as a business getter.

Advertising is just as essential to the welfare of a small business as to a large business. It is good for the builder as well as the manufacturer.—Building Age.

Neglect of Ideals.

Even where men gather together as in conventions of tradesmen the sordid and the selfish seem to be sufficiently powerful often to interfere with any consideration being given to ideals. Of course the object of men meeting together is for exchange of ideas and good ideas, creditable ideas, whether financial, commercial, practical, technical or ideally altruistic. Yet frequently those who are best informed and see farthest are more or less discouraged with the failure of the majority to be willing to give their support to the things that will surely lead a part or the whole industry out of the lower sphere into better things. This position is reflected again in the manner in which many employers treat the younger men who come into their service. In these days there is hardly any boy who has not a better education than

some of these men had when they started in business. This boy then represents splendid material upon which to work, and yet too frequently it is the custom to use him for a drudge and for work which can well be done by a common laborer who is incompetent to rise to higher things. This has the effect of driving out of the trade those young men who are most needed in it. It is this failure that is largely responsible for the scarcity of skilled workmen and for the scarcity of that class of workmen which can be relied upon when a big job comes along to take charge of it and carry it through successfully, without constant surveillance and aid.—(Sheet Metal Workers.)

Business Outlook Better.

WHILE the business situation presents varying degrees of unevenness, says the *Annalist*, there is reason for congratulation that progress is being made toward stability, and once business has completely readjusted itself to the new condition the foundation will have been provided for a degree of prosperity which, while it may not be buoyant, as contrasted with that built on the false basis of inflation, will probably be more lasting and far removed from the gray outlook which was pictured several months ago.

Everywhere there are indications of a trend toward stability.

Advise Changes Brick-Clay Classification.

Changes in the classification of brick and clay product building materials and rules governing their transportation, which traffic experts say would result in some reduction in rates and possibly in facilitating the movement of that traffic, were tentatively recommended to the interstate commerce commission by W. W. Brown, examiner for the commission, who has been investigating complaints of shippers representing every part of the country east of the Rocky Mountains.

In his report Examiner Brown urged that uniform brick lists be established to give various clay products and tile the proportionate benefit of rates accorded common brick. Common brick, he said, when transported less than seventy-five miles, should have a rate not exceeding 80 per cent of the rates on the higher class clay building material. Rates on brick traffic in general, the report said, were found not to be unreasonable as compared with the rates on other products.


OAK FLOORING
 CHESTNUT AND POPLAR
 MOULDINGS
 BASIC MANUFACTURING CO.
 BASIC, VIRGINIA.

SAND AND GRAVEL

Petersburg Sand & Gravel Corp.

PETERSBURG, VIRGINIA

**CONCRETE BUILDINGS
 AND PAVING SANDS**

GIANT PORTLAND CEMENT
 CLEAN WASHED GRAVEL IN ALL SIZES

3-S

**Best-By-Test
 SHORTENED HORN
 WATER CLOSET FLANGE**

Write for Catalog and Prices

THE SANITARY SPECIALTY CO.
 232 Mulberry Street, NEWARK, N. J.

SPRINKLER SYSTEMS

Fire Extinction For All
 Fire Hazards—

**Foamite
 Firefoam
 Company**

Fire Protection Engineers
 200 Fifth Avenue New York City

ENAMELED BRICK FOR RESIDENCE

The great possibilities afforded by the use of Enameled Brick are becoming more and more recognized by the most discriminating architects. This brick made in the standard colors and all practical mottles, offers every color combination obtainable.

Their beauty and individuality as well as their bright clean and sanitary finish make them especially adaptable for building the exterior walls of residences.

American Enameled Brick & Tile Co.

*Manufacturers of Enameled and Fire Brick.
 Dealers in Face Brick of all Colors
 and Textures.*

52 Vanderbilt Avenue,

New York

*Samples on display in Architects Samples Corporation,
 New York City. See pages in Sweets Architectural
 Catalogue, also Specification Data.*

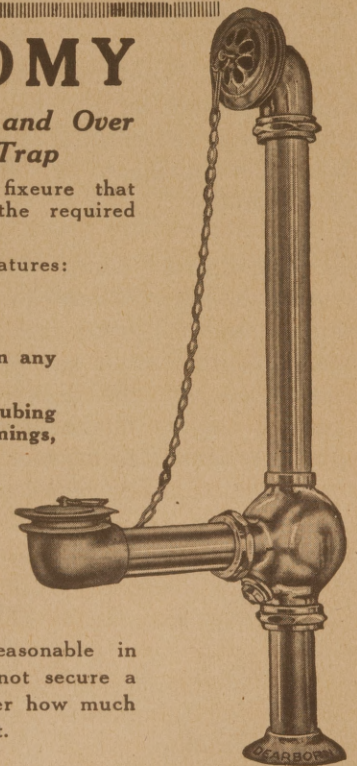
ECONOMY

*Connected Waste and Over
 flow With Trap*

A high class brass fixture that measures up to all the required standards.

Some special features:

- Deep water seal
- Roughs in line
- Will line up straight on any tub
- No. 20 B & S gauge tubing
- All cast brass trimmings, nickel plated.



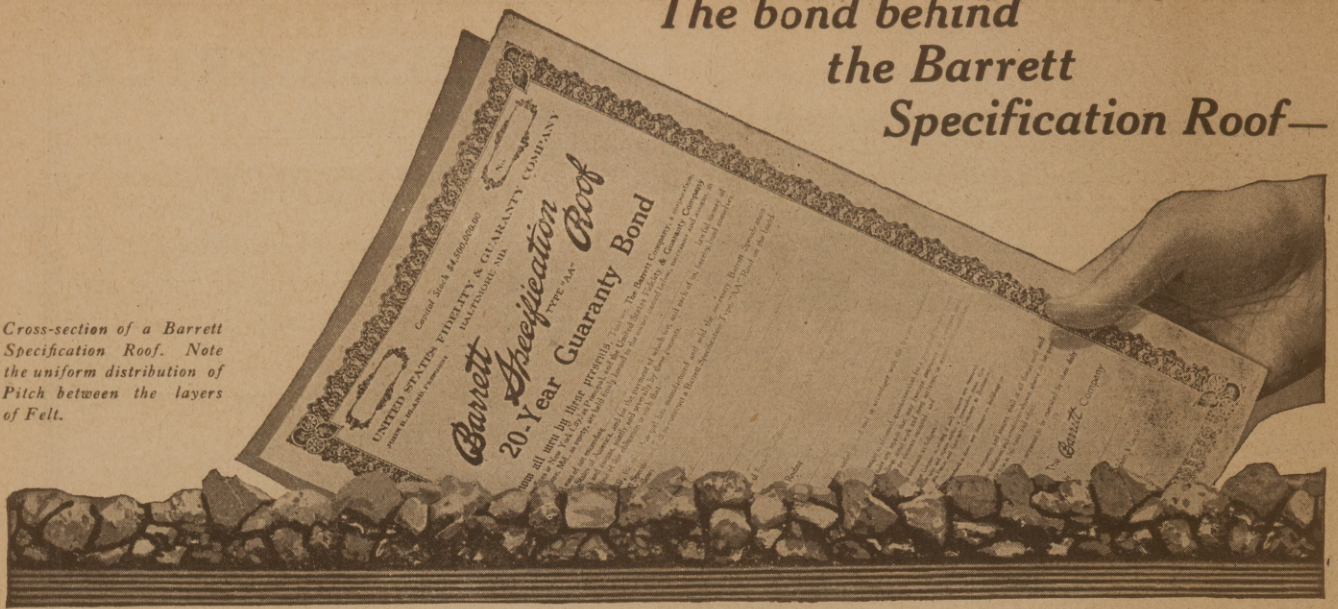
This fixture is reasonable in price and you cannot secure a better one no matter how much more you pay for it.

DEARBORN BRASS CO.

Cedar Rapids, Iowa

The bond behind the Barrett Specification Roof—

Cross-section of a Barrett Specification Roof. Note the uniform distribution of Pitch between the layers of Felt.



EVERYONE admits that a bond issued by The United States Fidelity & Guaranty Company is surer protection against roof repair expense than any guaranty.

"But," the owners and architects sometimes say, I don't care so much about the cost of repairs. What I want to avoid is leaks—and even your Surety Company Bond can't keep the roof from leaking."

They're wrong! The bond does keep the roof from leaking. For the bond behind The Barrett Specification Roof is more than insurance against maintenance expense—

It is positive proof that the roof was laid by a roofing contractor who has earned a reputation for honest, dependable work. For only such roofers are permitted to lay Barrett Specification Bonded Roofs.

It is positive proof that a Barrett Inspector was present on the job—present to see that the highest grade pitch and felt were used in quantities sufficient to give maximum strength and durability—present to see that the heavy top coat of pitch was poured and in it the gravel or slag surface was properly imbedded to insure as high a degree of fire protection as any roof can possibly provide.

Barrett Specification Roofs take the base rate of fire insurance.

When a roof is built by a reliable roofer, and in strict conformance with The Barrett Specification it is practically impossible for leaks or other roof troubles to develop until long after the expiration of the 20 or 10 year bonded period.

This is why The Barrett Specification Bonded Roof costs less per year of service than any other kind of flat roof.

Full details regarding these bonded roofs and copies of The Barrett Specification sent free on request.

The Barrett Company

New York Chicago Philadelphia Boston St. Louis Cleveland
Cincinnati Pittsburgh Detroit New Orleans Birmingham Kansas City
Minneapolis Dallas Nashville Syracuse Seattle Peoria Atlanta
Duluth Salt Lake City Bangor Washington Johnstown Lebanon
Youngtown Milwaukee Toledo Columbus Richmond Latrobe
Bethlehem Elizabeth Buffalo Baltimore Omaha Houston Denver Jacksonville
THE BARRETT COMPANY, Limited:
Montreal Toronto Winnipeg Vancouver St. John, N. B. Halifax, N. S.



Barrett Specification Roofs

Bonded for 20 and 10 Years

Southern Architect and Building News

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No. 5



Recommended Procedure for Architects, Engineers, Builders and Owners

THE purpose of this report is to acquaint prospective Owners and others financially interested in building and other construction projects with the wasteful duplication and consequent expense involved in the preparation of estimates of quantities under the system now generally in vogue.

To ascertain the cost of a construction project it is necessary to determine and compile lists or estimates of the quantities of materials and work to be done, to which are applied a price for each item. Under existing methods this work is done separately by as many Contractors as are permitted to bid, and there may be as many varying interpretations of a set of plans and specifications as there are bidders.

The recommended procedure of quantity surveying described herein is intended to eliminate the present wasteful and uneconomical methods by concentrating the function of determining and compiling the quantities and list of work involved, in one agency for each project. The quantity survey to be submitted to all bidders with the plans and specifications.

To Owners and Investors

It should be realized that all expenses in connection with the planning of buildings and construction are paid by the Owner. Those who contemplate building know that none can afford to work without fair compensation for services rendered, but they probably do not realize that, due to practices in vogue, they pay for the cost of preparation of all bids, including that of the successful bidder. Generally speaking, it has been the practice to have the figures submitted by the successful bidder include an amount sufficient to cover the work entailed in making proposals on other work which he was not successful in securing; in short his "overhead" account is much larger than it necessarily should be, but for all this the Owner pays. To eliminate the duplication of effort in estimating, thereby reducing the

contractor's overhead with attendant reduction in the cost of building, requires that all bids be submitted on the same basis and in such manner that they may be readily analyzed.

The Owner should not be required to pay a Contractor an overhead charge which includes any other costs than belong to his own project. It is believed that this can be accomplished by having made an itemized list of all quantities entering into the proposed work.

The Owner should pay for the preparation of this itemized list whether he proceeds with the building or not. It is obvious that such payment will be much less when such itemized list is furnished than otherwise, as each bidder is furnished with the list of quantities called Quantity Survey and each bidder is thereby released from the work of separately taking off the quantities from the drawings and specifications.

Speculation Eliminated

A quantity survey, because it fixes definite quantities on which the bids are to be received, eliminates speculation on the part of the bidders as to the quantities involved in the project and thus makes possible lower bids due to the elimination of this "contingency."

Where the Owner does not avail himself of the quantity survey procedure recommended herein, he should pay for estimating work direct to selected bidders on a prearranged basis, rather than have all his bids increased by an unknown amount for estimating quantities, which frequently in current practice the successful bidder distributes amongst the unsuccessful bidders in accordance with a prearrangement of the bidders.

To Architects and Engineers

With the idea in view of having all Contractors submit proposals on a uniform basis, with some means provided whereby the amount of the proposed work will not be left to individual interpretation of the plans and specifications, it

seems most desirable that all Owners through their Architects or Engineers should have submitted to bidders, with the plans and specifications, a so-called Quantity Survey. To insure the result aimed at, no proposals should be considered other than those based on the quantity survey accompanying the plans and specifications. It is, therefore, recommended to Architects and Engineers that, unless eliminated for some particular reason, all plans and specifications submitted to Contractors for proposals be accompanied by a quantity survey. It is further recommended that the selected bidder shall submit, before the contract is awarded, a copy of the quantity survey with each item priced and separate items added for cost of administration, etc., the total to make up the bid price.

To Contractors

It is evident that before an intelligent proposal can be made upon any project, the Contractor must have a quantity survey or some other statement of quantities involved. It has been customary in the past to add a stipulated overhead charge to provide for the cost of estimating and as this has been applied to every individual proposal made by the Contractor, the successful bid, out of possible fifteen or twenty, contains an item not strictly chargeable to such bid, and thereby penalizes the Owner. A quantity survey furnished to each bidder will reduce the cost of preparing proposals on prospective work, and not only should but obviously will reduce each bid price and thereby directly lower the cost to the Owner.

A quantity survey places all Contractors on the same basis, which is a definite one, from which they may price or determine the proper cost of the work. Each individual item or cost as set out in such quantity survey should be a basis of determining the proper cost of extra work desired by the Owner as well as a basis for credits on account of omissions; it also has the added advantage of enabling contractors to audit and prepare monthly statements, progress reports, etc.

Recommendations

1. Quantity surveying—Architects, Engineers and Contractors should jointly use their efforts to have established facilities for making quantity surveys.

2. Payment for quantity surveying—The Owner should pay for the quantity survey from one-quarter of 1 per cent to 1 per cent of the cost of the project for commercial and public work, and not more than twice as much for residence work, whether the project is constructed or not.

3. The cost of the project be defined as the accepted bid, or in cases where no bid is accepted, the bid of the lowest responsible bidder as determined by the Architect or Engineer. However, in cases where alternate bids are required, the ad-

ditional payments for the quantity survey shall be based upon the additional quantities surveyed, as approved by the Architect or Engineer.

4. Altered plans which involve a change in quantities after the quantity survey has been made justify an addition to the original fee for quantity surveying.

5. Basis of contract—Owners should have the option of—

(a) Making the quantity survey a part of the Contract, or

(b) Permitting the successful bidder, at his own expense, an opportunity to verify the accuracy and completeness of the quantity survey before the contract is signed. If he proves errors to exist in the quantity survey, the bidder shall be permitted to adjust his bid accordingly.—(Bulletin General Contractors.)

Course to Aid Housing.

WITH a view to helping solve the housing problem, Columbia University, New York, will use this summer the equipment of the School of Architecture for special studies of dwelling house construction and design. The university's announcement of this plan says:

"Special courses of lectures and drafting, dealing with the problem of the small house, the medium size house, the two-family house, the apartment house and others will be opened to all those who are seeking accurate information about the design, construction and equipment of these buildings. In giving these courses the school feels that it is opening its equipment for a broader public service at a time when the need is at its peak.

"Other courses intimately connected with domestic architecture will be given, such as architectural drafting and architectural model making, in which the student will be trained to express himself.

Finances Housing Project.

S. W. Straus & Co., of New York have underwritten a bond issue on another large housing project in that city. A fourteen-story apartment building, to contain small apartments, is to be built at once on which a first mortgage six per cent serial bond issue of \$825,000 has been underwritten. Straus & Co., say: "It is our opinion that every rightful effort should be made at this time to increase construction work, especially in buildings of residential type. Such activities not only will help alleviate the ills of inadequate housing, but they will help general business by providing employment for men now idle, and create business for many lines of industry. A period of activity between now and the end of the current year would prove a great boon to the country at large."



A Garden on the Massachusetts Coast Where the Architectural Use of Pottery Greatly Enhances the Beauty.



A Double House of Artistic Design, Each Separate and In Dividual.



Standardization of Building Codes

By D. Knickerbacker Boyd.

At the present time there is a great cry for more homes and for the lower cost of homes. In an effort to encourage building and stimulate interest in house construction, by far the most important and most practical suggestion, not alone in its present influence but in its effect on future building, is to revise building codes and to make their requirements as nearly uniform as possible throughout the country.

In almost hundreds of cities, building codes are now in operation which were prepared or approved a decade or more ago and have not been revised or amended since that time. These codes fail to take into consideration the advances made in the scientific and efficient use of structural materials and, in numerous cases, changes might be made which would reduce building costs while still retaining safe structural requirements.

One of the most obvious of these necessary revisions, relating to wall thickness, was brought recently in an investigation by the Structural Service Bureau of some building codes through the country. These results thus far verified are tabulated as follows:

CODE PROVISIONS FOR BRICK EXTERIOR WALLS IN DWELLINGS.

	Cities
One-story dwellings, 8-inch walls.....	63
One-story dwellings, over 8-inch walls.....	14
Two-story dwellings, 8-inch walls, both stories.....	28
Two-story dwellings, over 8-inch walls, first story.....	31
Two-story dwellings, over 8-inch walls, both stories.....	19
Three-story dwellings, over 8-inch walls, all stories.....	6
Three-story dwellings, over 8-inch walls, first story.....	10
Three-story dwellings, over 8-inch wall, first and second stories.....	21
Three-story dwellings, over 8-inch walls, all stories.....	39

Schedules have been prepared which list the variations and give the width, area and height limit of houses in relation to each thickness of wall.

The lists are prepared on a generally comparable basis as to size of house and give the requirements, according to latest available information for two story house.

It will be noted that the same city is in some cases included in two lists, apparently contradictory. This is due to the code requiring thicker walls inside the fire limits, or special regulations covering areas or heights. An example of this is Albany, N. Y., where 8-inch walls are permitted in the 2nd story of a two story dwelling, outside the fire limits but when inside the fire limits, a 12-inch wall is required—whereas in New York City, or Philadelphia, the 8-inch thickness is per-

mitted in both stories within the fire limits.

The first list includes some 29 municipalities permitting 8-inch walls in each story of a small two story house, as follows:

Baltimore, Md., Birmingham, Ala., Boston, Mass., Buffalo, N. Y., Cambridge, Mass., Cleveland, O., Cincinnati, O., Columbus, O., Detroit, Mich., Duluth, Minn., Hartford, Conn., Minneapolis, Minn., New Bedford, Mass., New Orleans, La., New York, N. Y., Philadelphia, Pa., Portland, Ore., Pittsburg, Pa., Rochester, N. Y., Seattle, Wash., Syracuse, N. Y., Tacoma, Wash., Tampa, Fla., Trenton, N. J., Washington, D. C., Wilmington, Del., Worcester, Mass.

The second list includes cities requiring the walls on the first story of a small house to be 12 or 13-inches thick, but for an 8 or 9-inch wall in the second story. There are 31 cities on this list as follows:

Albany, N. Y., Albuquerque, N. M., Boise, Idaho, Butte, Mont., Chicago, Ill., Dallas, Tex., Davenport, Ia., Denver, Colo., Grand Rapids, Mich., Indianapolis, Ind., Jacksonville, Fla., Kansas City, Kan., Knoxville, Tenn., Lawrence, Mass., Los Angeles, Cal., Manchester, N. H., Memphis, Tenn., Milwaukee, Wis., Norfolk, Va., Oakland, Calif., Omaha, Neb., Providence, R. I., Richmond, Va., Salt Lake City, Utah, San Francisco, Cal., Savannah, Ga., Spokane, Wash., Springfield, Mass., Toledo, Ohio, Worcester, Mass.

The third list includes those cities which require the walls of each story in every small house two stories in height to be 12 or 13 inches thick. There are 19 cities on this list namely:

Albany, N. Y., Atlanta, Ga., Augusta, Ga., Bridgeport, Conn., Buffalo, N. Y., Chattanooga, Tenn., Des Moines, Iowa, Jersey City, N. J., Louisville, Ky., Lowell, Mass., Nashville, Tenn., Newark, N. J., New Haven, Conn., Paterson, N. J., Petersburg, Va., Shreveport, La., St. Louis, Mo., St. Paul, Minn., Wichita, Kans.

It is plain that in some cities it is possible to construct a two story dwelling with 8-inch walls for both stories above basement, while in a neighboring city, perhaps not ten miles distant, 12-inch walls are required throughout. Why should the thicker walls be required if the 8-inch wall is equally safe and is approved by 28 cities, among them some of the largest in the country.

Of especial interest to the home builder is the fact that the use of an 8-inch wall means a saving to him in money and space. Just how much of a saving in money can be visualized by a specific example:

The following figures are based on two storied walls, not allowing for half stories, gables or for openings, and disregarding whether the foundations are of stone, concrete, brick or other solid material. In a house 20 x 30 feet—using that merely as a convenient standard of size for the purpose of calculating—there will be a saving between an 8-inch wall and a 12-inch wall, of 12,500 bricks (in round numbers). Those extra bricks would mean, at the average current price, that from \$250 to \$300 has been added to the cost of the house for the brick alone, to which a like sum must be added for the cost of the mortar and the time of the bricklayers and helpers necessary in laying of the extra 12,500 bricks. In other words, a house of the same outside dimensions would cost from \$500 to \$600 more in Albany or St. Louis than it would in Pittsburg or Seattle.

In addition to safe structural requirements and money savings there are other important features. The difference in thickness of the walls increases the area on each floor by about 30 square feet, or in other words, the 8-inch wall means about the size of a small bath-room or several large closets added to each story.

The coal required to produce the additional material for the thicker wall would amount to 6 tons for each house. While that means, in the cost of the coal at the place where the material is burned, we will say \$50—which amount is included in the money saving before mentioned—thing of the conservation of coal transportation which an 8-inch wall effects. Six tons and its hauling eliminated with each house built! If we construct the walls in the smaller or isolated houses, hollow, with brick or hollow tiles where hollow materials is permissible, there is still a further saving of about 2½ tons of coal.

The Institute Committee on Fire Prevention in its current report says, "Now is the proper time to revise building codes generally and remove from them all unnecessary restrictive requirements." It goes on to suggest consideration of the newly developed hollow wall of brick and other types of construction which if permitted will result in quite materially reducing the cost of construction of the so urgently needed housing. It further states that if codes were properly amended small houses may be constructed with walls of fireproof or fire-resisting materials at approximately the cost of timber and lumber.

The U. S. Housing Corporation adopted for its War Housing Developments, the 8-inch thicknesses as standard for brick walls or houses. In all

localities this thickness, which was only accepted after thorough investigation was used in spite of any prevailing regulations to the contrary. That corporation and the Emergency Fleet Corporation adopted the 8-inch thickness as an amply safe and sound all-time standard for small houses, and not as a war measure of expedient.

As an instance of the effect that wall construction may have upon type of plan—in the city of Philadelphia, 9-inch walls have long been allowed, but this thickness has been limited to a building not over 16 feet wide. The operative builders of Philadelphia found that they could sell much more readily, a house that had more light and more air than the old conventional type—a house with an L at the back and a narrow court.

But according to the Building Laws, they had to make the better planned wider houses with wall 13 inches thick, therefore many of them stuck to the old type of building; because being narrower it could have 9-inch walls and hence was cheaper. So the Operative Builder called on the Chief of the Bureau of Building Inspection and explained the situation; and he, thoroughly convinced that a change was desirable said: "We will prepare and submit an Enabling Act to the Legislature of Pennsylvania." And last year, among them all, they amended the 16-foot act so that houses 20 feet wide could be built with 8-inch walls and the type of plan for dwellings in Philadelphia is now developing into what is called the "air-light" house without any back extension and departing from the old one with a narrow court-like yard.

Thus there is placed squarely before the public one of the most practical means of relieving the housing shortage. What has been proven wise in the past by so many cities throughout our great land should certainly prove wise for all.

Revise building codes to permit a more efficient and scientific use of building material!—(American Builder.)

Column Tests to Be Conducted at Madison, Wis.

A SERIES of column tests which are of very broad, general interest will be made at the Forest Products Laboratory.

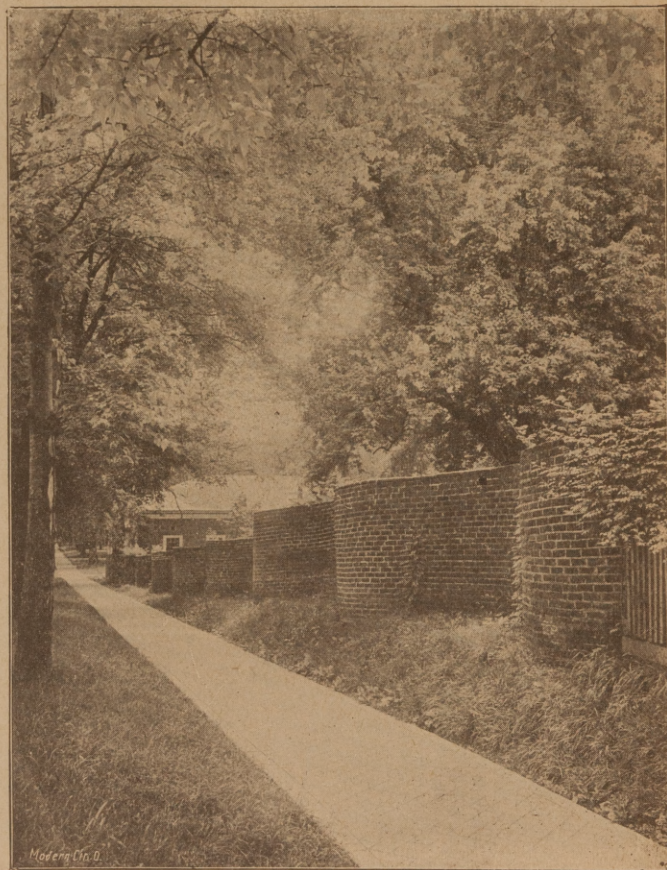
The work, which will cover a period of four years, is for the purpose of obtaining data on the effect of density and defects, such as knots, checks, cross grain, etc., on the strength of structural columns of both southern pine and Douglas fir. The data will be used as a basis for recommending safe working stresses for structural columns. It is estimated that 160 pieces of 12"x12"x24' timber will be used. In conducting the tests use will be made of the new 1,000,000-pound testing machine at Wisconsin University. If possible the work will be started this summer.



Two Garden Walks on an Old Virginia Estate.



Arbor on a Virginia Estate.



Quaint Garden Wall on Colonial Virginia Estate.



The Entrance to the House of Frances Everett, Esq., Highland Park. Tallmadge and Watson, Architects.



Building Outlook Grows Brighter

THAT a fairly definite change for the better has taken place in the building industry can no longer be doubted. The Guaranty Survey, published by the Guaranty Trust Company of New York, reports a nation-wide increase in building activities, which for April exceeded those of any months since June, 1920. Contracts awarded in twenty-five Northeastern States aggregate more than \$220,000,000, the largest amount for April of any year except 1920, and 34 per cent, in excess of March. Contracts awarded in the New England States in April totalled \$17,800,000, an increase of 34.4 per cent. over March, and contracts awarded in the first four months of this year amounted to \$46,400,000, or 25 per cent. more than for the corresponding period in 1920. In New York and Northern New Jersey construction contracts in April aggregated \$51,000,000, an increase of 71 per cent. over March. In the Middle Atlantic States, April building contracts amounted to \$27,246,000, which represented a slight increase over the preceding month. In all sections of the country residential construction is reported to lead all other building, something to be expected, for, during the period 1914-1920 the United States failed to replace all homes destroyed and construction of new homes was retarded. Comparison of curves of actual construction with projected curves of normal construction reveals a shortage of approximately 1,500,000 homes. This means that for some years we will be occupied in making good the deficiency in addition to supplying the demand due to normal increase in population.

The next step is to make adjustments in the cost of all things entering into a house, of which labor is the most important item. There is no reason to be discouraged for the process of adjustment will follow precedent. The men who are going to build homes are those who have been held by their employers after passing through fiery financial trials. They feel secure in their jobs and consider that their savings may be prudently invested in a home. Many would not do this but for the high rents now prevailing, and which will prevail for some years to come.

THE general depression has set free a great deal of labor and the ranks of untrained labor fill each month with immigrants. The effect will

be felt soon in the brick yards, the quarries, the forests and the mines in which production will increase in order to get all possible benefit from prevailing prices. Increased competition brings a lowering of prices, for the law of supply and demand works independently of legislatures and courts. The railways will shortly be able to move goods at lower rates so the effect will be felt everywhere. The greatest retarding effect at the present time upon active resumption in building is the attitude of certain leaders of workmen in the building trades. That this drawback will disappear with the growing demand for the service of the men, together with a lessening of the cost of living no one doubts. We have nothing to worry about now for the tide has turned. Present labor costs are due solely to combination and not to worth or actual demand. The natural laws of competition due to supply and demand have been temporarily set aside. Since unemployment is expressed today in figures running into millions of men, the more needy may be expected to break shortly and the wheels of industry will again hum.

The capitalist class cannot be forced to stand all the blame for the present depression. So long as the banks granted credits freely the adventurous business men borrowed. Interest rates advanced and still men plunged. The check came from the employees who finally rebelled at high prices. They wished to hold on to the wages of 1920 and pay 1913 prices for the things they wanted. The expected happened. Deflation was necessary in view of the lessened demand for goods. No one bought anything except necessities and credit had to be curtailed. We are now suffering the results of such a policy. Thanks to the inability of the average human being to hold a sustained interest in anything for a long time the "buyers' strike" is ended. Interest rates having gone to a speculative point, checked loans and helped increase bank reserves. The price of money is gradually coming down, paralleling the slightly increased demand for all sorts of goods. The risk having been taken out of business all that remains to hinder wide spread improvement is the present attitude of labor, which, instead of being

defiant now has an apprehensive appearance presaging a break.

THERE is work for all and it is a bad commentary on our lack of system in finance that today more than two million men are out of employment in the United States. Recent legislation eliminated the panic as a factor in the regulation of business. Yet this legislation merely corrected previous legislation which brought about the bad conditions. The next great problem for financiers and students of economics will be the discovery of something which will make our profile of business conditions a rippling curve instead of a succession of crested peaks and sharp deep valleys.

In the meantime let the architect and builder take heart; statistics show that the outlook for building is rapidly improving. First the home, next the school, then the hotel, followed by the store and factory. We are now gazing on the promised land. Let us make our plans to enter upon our heritage in time for bountiful harvests next year and for several years to follow.—(The American Architect.)

Master Builders Name Charter Members.

A number of contractors and builders of Chippewa Falls, Wis., have been holding meetings during the past two months for the purpose of organizing a local Master Builders' Association, and after a thorough discussion of the matter, the following were signed up as charter members: Schaefer & Olson, general contractors; N. Brisson & Son, painting contractors; Bergie H. Bergerson, painting contractor; A. J. Weigand, sheet metal and tinning; F. Lashway, electrician; L. A. Roycraft, general contractor; W. P. Rice, general contractor; F. C. Eberfur, plumbing contractor; Albert Smith, representing Wisconsin-Minnesota Power Co.

Mr. Olson of Schaefer & Olson was elected temporary chairman and J. J. Phalen was elected temporary secretary.

1600 Dwellings May Be Erected in Atlanta This Year.

Atlanta, Ga.—If the ratio of increase shown on the records of the city building inspector for the first six months continues until the end of the year, approximately 1,600 new residences will have been erected here during 1921. Since January 1 more than 700 permits for residences have been issued, 120 of this number being taken out in June. With the exception of 2 apartment houses and 2 or 3 business buildings, permits here during June represent dwelling construction. The number of permits for residences issued in the first six months of 1921 is as follows: January, 42; February, 58; March, 100; April, 118; May, 146; June, 129.

Reducing Costs in Apartment Construction.

EVERY cubic foot of construction in a new building means certain amount of expenses. If the same number of apartments with the same amount convenience can be built in a smaller space, it means that many cubic feet of space is saved and a corresponding amount of money cut off the bill.

That is the line of logic Wm. H. Welter, contractor in Gary, Ind., followed when planning a number of new apartment buildings for that progressive steel city. He knew there was a demand for apartments and that the return would be very satisfactory. It was up to him to build them so that he could rent them for a reasonable amount and yet make a good profit for his work.

To do this he decided to build condensed apartments or kitchenette apartments as they are more familiarly known. This apartment contains a large living room, kitchenette and bath. These three rooms will serve the purpose of five. In the living room there is a wall bed concealed behind a door which opens into a small dressing closet. At night this door is opened and the bed lowered into position. In the morning it is again raised and folded up and the door swung back into position. The use of this concealed bed eliminates the need of a bedroom. By using these beds in his apartments Welter saved several hundred square feet of floor space and naturally a similarly large number of cubic feet of material.

The kitchenette serves the dual purpose of kitchen and dining room. At one end of this room which is long and narrow is the kitchen workshop. Here are located range, sink, shelves, and cupboards for food and utensils. The china closets are so placed as to form a sort of partition between this end of the room and the "dining-ette" where the meals are served. By the use of this type of room the pantry is eliminated and the space used for kitchen and dining room greatly reduced.

In the apartment building shown here with floor plans, contractor Welter built eleven two-room apartments, four on each floor and three in the basement. These apartments rent for \$40 to \$45 a month, very reasonable in the face of rents being charged in all sections of the country. Yet he figures he can rent them for this price and get a fair return on his investment. He has solved the high rent problem by eliminating certain costs in construction.

In a large apartment building which he recently completed in Gary he saved over \$8,000 in structural expense by using space-saving features and also increased the renting return. He is planning to build several more as he finds the demand for apartments of this type is very heavy and his buildings are rented long before they are actually completed.—American Builder.



Building Material of Beauty

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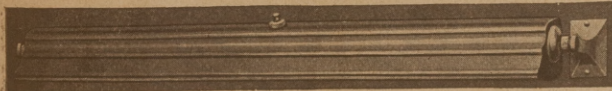
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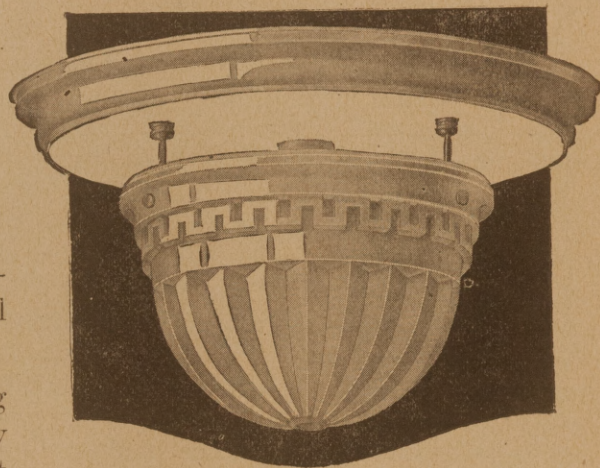
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Combining the Two Principles of Light Transmission

Architects and Lighting Engineers the country over have found in Brascolite the ideal light for eye-health and comfort.

Here is a simple test that affords convincing proof of Brascolite's superiority: look at any direct light source for 10 seconds then attempt to read a book or newspaper and the result will be as shown in figure No. 1. Then look at a Brascolite for 10 seconds and the result as shown in figure No. 2 will prove conclusively the superior advantage of Brascolite.



TYPE AF

Wide, all white, glazed porcelain enameled reflector with bowl of heavy, pressed white glass of low absorption. Type A F B same with reflector band finished in leather bronze.

GLARE IS THE CAUSE OF EYE STRAIN

FIG. 1.

GLARE IS THE CAUSE OF EYE STRAIN

FIG. 2.

Brascolite, by its combination of the two principles of light transmission—diffusion plus reflection at the source of light—reduces glare to the minimum and produces a light that closely resembles daylight itself. The Brascolite bowl, when illuminated, presents a luminous body 569 times as large as the lamp filament. The glare of the clear Mazda lamp is reduced 97% with a total absorption of but 20% of the light rays.

Not only are the rays of light broken up and diffused by the white glass bowl, but the Brascolite carrying as it does "its own ceiling" or reflecting plane, directs practically all of the light rays to angles below 90 degrees where they are made useful for effective and economical illumination on the working plane.

Our Catalogue No. 8 pictures and describes the Standard Brascolite line—a Brascolite for every purpose. We will be glad to send you a copy upon request.

Our Engineering Department will gladly work under your direction or act as advisor regarding any lighting requirement.

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The Commandments for Building As Well as Paving Contractors

By Henry Wilson.

I. IF a contractor is to be successful, he must exercise, in the preparation of his bid on any contract, the same degree of diligence and intelligence that he is willing and expects to exercise in the prosecution of the work after contract is awarded him.

If highway contractors as a class could be brought to a more exact application of this principle, they would save themselves, the various highway departments of the country, and the public at large much wasted effort and money.

II. Comparatively speaking, it takes much less energy and effort to keep out of trouble than it does to get out of trouble after you once get into it. MORAL: Don't attempt to figure, within a few hours, a bid on a contract which you may be several years in executing. Remember, too, that when you sign a contract your obligations are generally set forth in hundreds of pages while the other side's obligations are covered by a comparatively few clauses.

III. Every contractor must, finally, stand or fall upon his own knowledge of costs and bidding methods. It will not do to rely upon somebody else's figures.

IV. There is an almost universal tendency among engineers to underestimate costs. (The author is an engineer, so don't think he is merely "knocking" from the rear rank of the "Anvil Chorus.") This is because they do not pay the bills and can hardly be expected to take into account many theoretically hidden items of expense which, in practice, discover themselves to the contractor.

V. It will not do to rely upon some salesman bent upon selling you something, after you secure an award, to furnish your cost data. Human nature is too optimistic to make this sound business. Allowing that your salesman has a "Half-Nelson" on his psychology and sense of proportion, it is still quite probable that his cost information is vicarious, i.e., he did not "dig it out" himself in the conduct of similar work. Such information is generally worth about as much as a "tip" on the stock market, regarding the value of which practically all the world is agreed.

VI. Hand books of cost data, and advertisements containing cost data, are good for bidding purposes, only in so far as you are qualified by study and analysis of cost to interpret and use them properly. Remember the analogy of the baby and the buzz-saw.

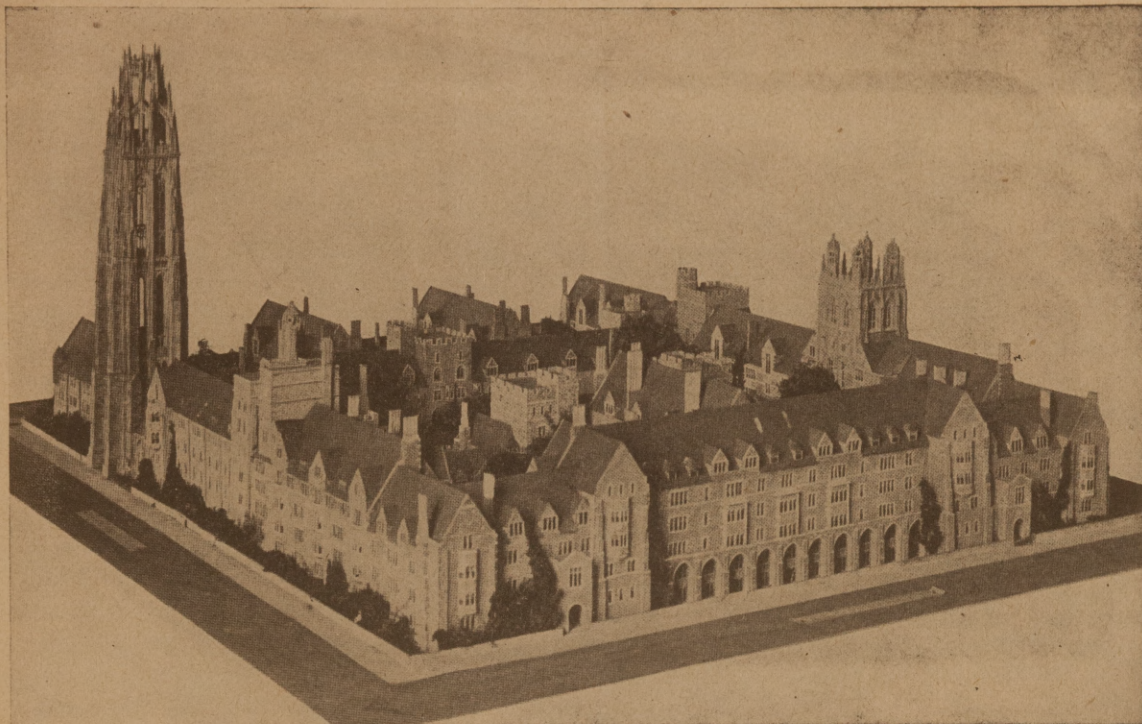
VII. To take a compilation of bids at some previous letting and figure out an average price by which to bid, is like trying to lift oneself by the boot-straps. It won't work. There is too

much chance that many of the bids you will use to get your average were arrived at by the same method, or else in some of the other ways against which this preachment is directed. Furthermore, no two contracts ever had exactly similar conditions.

VIII. The contractor who bids on a contract previously advertised and who deliberately sits down and figures a set of prices designed to beat the previous low bidder, without honestly satisfying himself by analysis and calculation that he can afford to do the work at the prices bid is a criminal gambler, a menace to himself and the public as well. The sooner he is eliminated, the better for the industry.

IX. The contractor who is opposed to discussing costs and methods with his competitor is not in line for big things. The chances are you can learn as much if not more from some other fellow through discussion than he can learn from you. Some of the most prominent Highway Engineers in the country are encouraging the formation of Contractors' Associations, because they believe that mutual discussions of costs and methods and the placing of a premium upon past performance, ability, and experience is in line with a more scientific and economical prosecution of road construction. Remember that there is nothing new under the sun. The fellow who knows so much that he must keep it to himself, for fear someone else will profit by it, the fellow who wishes to be a law unto himself, and the fellow who is afraid to match wits are all reactionaries. They are like the mole, in that they never "Get very far" or see much "daylight." In one state the highway department and the contractors have actually gotten together and have worked out a standard scale of plant depreciation to be used in all bidding, also a standard form for estimating costs on contracts.

X. "Every tub must stand on its own bottom." If it doesn't there is no telling where it will roll. You must learn, Mr. Contractor, no matter whether you started as an engineer, or merely as an enterprising entity, to be a cost analyst and estimator. There is no "royal road" and your aptitude as such will have to be built on your actual experience in the conduct of work. Organize your office on every job along lines of intelligent and careful cost analysis and cost keeping, establish a better understanding of these matters among your foremen and throughout your organization, and **WORK OUT YOUR OWN SALVATION**. When you have arrived don't throw away the benefits of your work by putting in a bid that your better judgement and your figures



YALE MEMORIAL QUADRANGLE BUILDINGS, NEW HAVEN, CONN.

James Gamble Rogers, Architect

Marc Eidlitz & Son, Builders

In securing the Painting contract for the Yale Memorial Quadrangle Buildings, quality of service and workmanship was a big item.

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tell you is too low, simply because you forget something or because you feel that you must have a job and hope something will "turn up" to pull you out of the hole you know you are going into. If some dapper fellow comes along and tells you it can be done for much less than your figures show, tell him that it may have cost "some other fellow" what he claims but that your figures don't indicate you can do it for that and you don't propose to incur the risk of wearing out your brain, body and pocketbook on the strength of what someone else is reputed to have done.—(Bulletin General Contractor.)

Youngstown Prospers Under Open Shop.

New construction is proceeding satisfactorily in the Youngstown district under open shop conditions. Contractors and builders have thus far been able to secure a plentiful supply of skilled labor. The co-operation afforded in this respect by the Youngstown Building Trades Employers' Association has been a material factor in expediting current work. Where desired, men are housed and fed in suitable barracks maintained by the association.

The open shop was instituted in the building trades in Youngstown when leaders of the unions persistently refused to meet with the employers to discuss the new wage scale, effective from May 1st, at that time a 20 per cent reduction was put into effect and the open shop was instituted.

There is a considerable volume of school building construction, a number of grade buildings being under way, as well as the initial unit of the new Rayen High School, and a substantial addition to South High School. This work is all being done by recognized Youngstown contracting interests, identified with the Builders' Exchange. This and other construction under way aggregate in excess of a million and a half dollars in valuation.

In addition a large number of small business blocks are being constructed, as well as modern residences in all parts of the city. An indication of the current situation is found in the records of the Municipal Building Inspector, which show that the permits for June totaled \$1,867,420 in valuation. This is nearly \$100,000 higher than the previous high monthly record in August, 1919, and is approximately seven times larger than the valuation of the new building for which permits were issued in June, 1920, when they aggregated \$266,405.

A new hotel, to cost \$275,000 and two church buildings now under way, to cost in excess of \$200,000, help to swell the total.

It will be judged, therefore, that the building situation in Youngstown is very satisfactory insofar as the contractors are concerned.

The industrial situation, however, is not so

favorable and the views of well-informed steel executives are to the effect that the current stagnation will likely continue until late fall. At that time business is expected to resume, the improvement to gather strength until the end of the year. District iron and steel operations, which constitute the bulk of industrial activity in the Mahoning and Shenango Valleys, have averaged approximately 30 to 35 per cent the past three months.

Accordingly, there has been much irregular employment, though the mills have endeavored to provide work for as many men as possible by inaugurating the 8-hour day to replace 10 and 12-hour shifts. This expedient has proved successful to some extent, though of course it has not provided work for all.

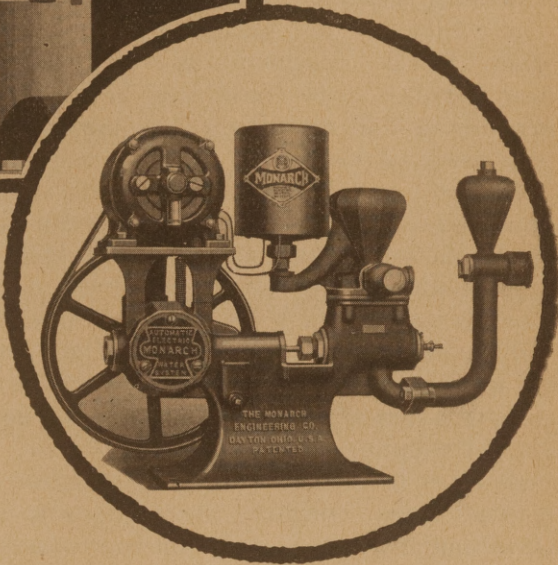
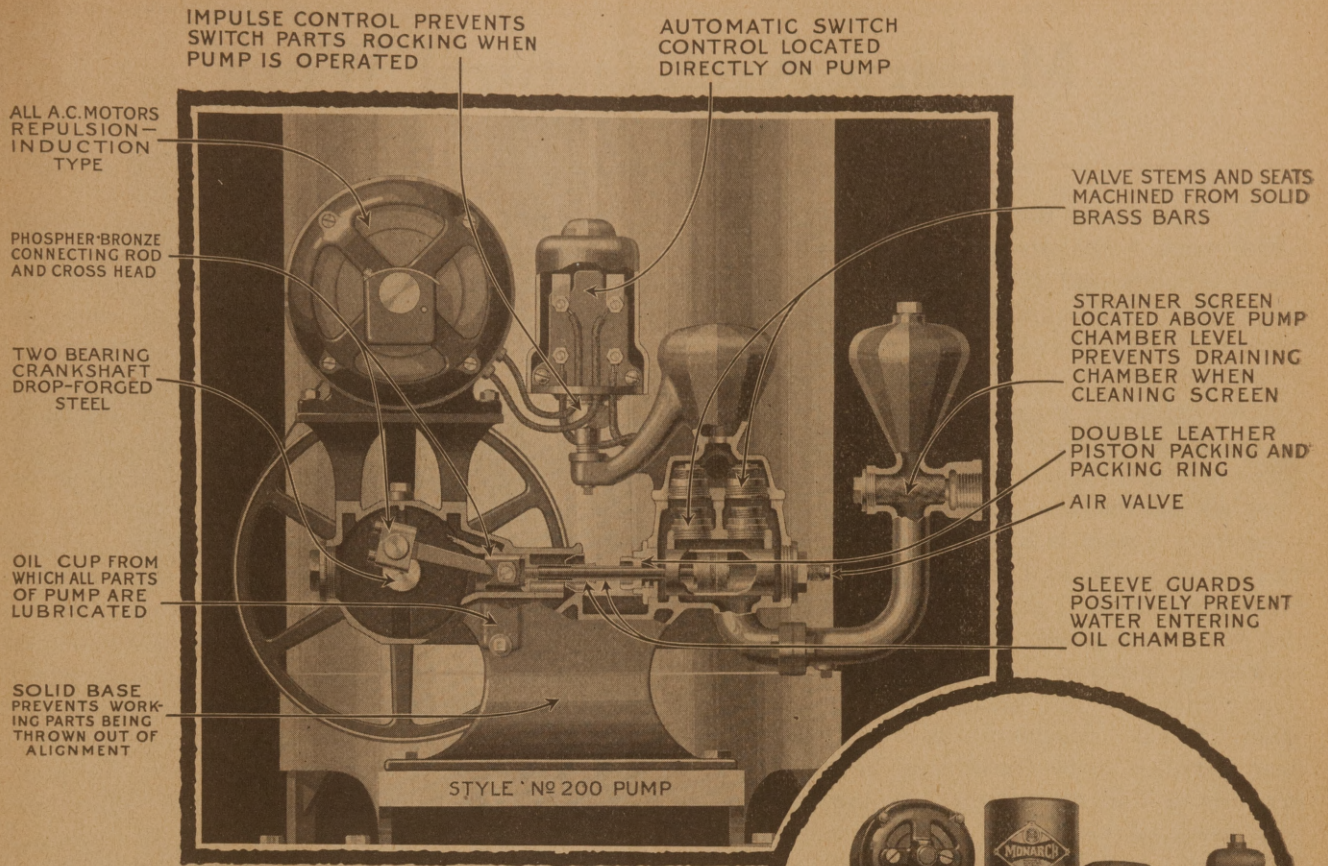
An index of the general situation among the valley's industries is found in the fact that only 6 of 46 blast furnaces in the two valleys are active—the balance being suspended for lack of business. President Jas. A. Campbell of the Youngstown Sheet & Tube Company states that the May tonnage produced by the mills of this company was the smallest in many years.

All manufacturers agree, however, that in view of the heavy overhanging demand for iron and steel commodities, there is certain to be a revival in business within a few months. President A. E. Adams of the First National Bank states that the peak of the money pressure in the Federal Reserve Banks is six months behind us; that it is just behind large city banks and that the rural banks are about to reach the peak. He believes a definite upturn in business will manifest itself within the next six months. Mr. Adams is a director of the Federal Reserve Bank of the Cleveland District.

It is interesting to note, in view of the wage demands of craftsmen in the building trades, that steel manufacturers are contemplating another wage reduction, to become effective within a short time. This is in addition to the 20 per cent reduction which was put into effect February 16th by the independent steel companies and was later followed by the Steel Corporation and its subsidiaries. Union molders in foundries in this territory have agreed to a new wage scale which provided for a 20 per cent reduction from the old scale. A minimum wage of 80c per hour is provided under new scale, as compared with a \$1.00 minimum under the old.—(American Contractor.)

Southern Pine Association Opens New Offices.

The Southern Pine Association has opened a regional office at Jacksonville, Fla., 1304-5-6 Graham building, in charge of W. E. Gardner, who has been appointed assistant secretary.



Choosing the Water System

You keep faith with your trade by handling only the plumbing and household equipment that measure up to your own high standard.

For that reason we draw your attention especially to the cross-section of the Monarch pump shown above. It shows you more graphically than we can tell you in words the Monarch's superior design and structure from an engineering standpoint.

It does not require an expert mechanic to discern its simplicity, and to note the sound mechanical principles upon which it is built. This is apparent even to the layman.

And even the layman can see why the "Monarch" will give so many years of economical, care-free service.

Its many exclusive features such as the two-bearing crankshaft, the impulse switch control, the strainer screen, the sleeve guard, and other refinements, put it in a class by itself—a standard by which other systems may be judged.

The quality of material used, and the high grade workmanship throughout is an additional guarantee of Monarch durability and satisfaction.

You make no mistake when you choose the Monarch for your trade.

The Way to Bigger Profits

The demand for Automatic Water Systems is growing every day. You want your share of the profits that this demand creates.

The MONARCH will make your profits bigger and more enduring and establish your water system business on a sound, substantial basis. Representative concerns all over the country have proven this. Their profitable experience has marked a safe, sure channel for you to follow.

Write us for all the facts about the attractive price and superior quality of the Monarch, our liberal proposition to jobbers, and our plans for dealer co-operation and service.

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Modern Architectural Work

By John W. Simpson.

In determining the merit of modern architectural work there are certain actualities to be taken into account if we are to arrive at a true judgement. "New needs" form perhaps the chief reason for the change from what was deemed traditional design. Educational and commercial requirements, for example, have altered materially since our boyhood, and have to be frankly recognized and provided for.

Another and most important factor in contemporary design is hygiene. We are still boggling at soil, waste, and ventilating pipes, deliberately omitting them from our elevations, and letting the sanitary engineer carry them as he can, sprawling over our piers, cornices, and roofs, where they are not shamefully buried in the walls. But the apartments to which they pertain have perforce to be considered, and fenestration becomes a difficult matter; we may no longer plan majestic ranges of window, behind which bathrooms, sinks and sanitary needs are left to be contrived as best they may. Health authorities fix the area of our windows, settle their height with relation to the ceiling, and (very properly) take no account of a predilection for unknown wall-space, or of a desire to build according to the tradition of our forefathers; in which, I may observe, external fire-escape stairs found no place. Inside the building similar questions arise. Staircases must be enclosed, to the destruction of delightful vistas; elevators incongruous to renaissance motives, are wanted; immense conglomerations of pipes, tubes, and wires must be laid out, and planned in shafts where they can be reached for repair; light and ventilation take precedence of suggestive mystery, and the effect on plan and decoration is revolutionary.

It is useless to cry after the traditions of past days; our problems are altered, and we have to solve them in our own way. Naturally, the change is not yet complete. Fragments of old, beloved formulae still cling to us—not only architectural; railways have existed for a century, yet there are still in use carriages which retain the lines of a stage-coach; the motor car has long been common, and, as Wells once said, "Before each still trots the ghost of a horse."

As for "national style," whether it be good or bad, it clearly exists. No one could mistake a British city for one of any other country; the national signature is written all over it. It is, nevertheless, possible that we are on the verge of

such a new departure in our art as has taken place in the art of warfare, where "fighting," in the historic sense, with development of guns and swords, seems likely to give place to mere destruction by misuse of the products of peaceful industries. In our case it may well come about by frank recognition of the qualities of the machine, as opposed to obsolete methods of hand work. There is nothing inherently uncongenial in the association of machine work with architecture; the real incongruity is in attempts to maintain, or revive, mediaeval craftsmanship in the twentieth century. Its charm lay in its spontaneity, its unaffected fitness for the surrounding of its date; to imitate it is to fabricate artificial flowers, which lack life and perfume. We live in an age of machines, and true architecture must needs reflect their influence. If we set ourselves to the planning and construction of buildings supremely proper for their purpose, art will take care of itself. An artist will always solve his problem artistically. Finding inspiration in stern utility, he transmutes it by his touch into

Some fragment from his dream of human life,
Shaped by himself."
(Engineering & Construction.)

Should Industries Build Now?

AS the result of a nation-wide survey regarding the industrial building situation in the United States the Detroit Steel Products last week issued a symposium relative to the vital question, "Should industries build now?"

The consensus of opinion of 200 architects, engineers and contractors is summed up as follows:

"The United States as a whole is not overbuilt.

"Those whose business warrants expansion will make no mistake in building at once, for labor is plentiful and its efficiency is increasing, while material prices have dropped.

"Lower costs and possibly a slight further drop in material prices are expected by the building public and until some such movement is sighted the present buyers' strike is very apt to continue.

"Prices on building material will probably become stable at around 50 per cent. increase over 1913 prices, but complete stabilizing of the market is not apt to occur before late fall or early in 1922. The resumption of industrial building, therefore, is apt to be very gradual."



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National Assists Dept. of Commerce.

The Architectural and Building Code Bureau of the National Lumber Manufacturers' Association recently distributed a questionnaire for the purpose of securing the latest information on the subject of building codes in representative cities throughout the country. The purpose of the questionnaire is to obtain the best and most up to date information for the Building Code Committee of the Department of Commerce. The response to date is indicative of great interest and cooperation on the part of city officials and commerce bodies. Mr. Wilson Compton and D. F. Holtman of the association, are the points of contact between the lumber industry and the committee.

Building code activities of the association which have met with much success this year, are being carried into cities in all parts of the country.

L. Kraemer of the Building Code Department of the National Lumber Manufacturers' Association will visit nearly fifty cities in the coming two months, in Iowa, Nebraska, Kansas, Missouri, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, Kentucky and West Virginia for the purpose of introducing assisting and advertising in the formulating of codes. Mr. Holtman will investigate building code conditions in Texas, California and Utah.

Birmingham Dwelling Construction Soars.

Birmingham, Ala.—The housing shortage is being met here with the completion of 600 new dwellings and approximately 150 additional houses now under way. The number of residences already completed and now building is nearly double the entire number of houses erected during the previous year. During June residence permits numbered 107, costing \$214,000. In May, 165 dwellings were authorized at a cost of \$308,000. April records show a value of \$290,000 for 160 structures and in March the valuation of 160 dwelling permits was \$340,250. The total for the first half year is 784 dwellings, while in 1920 only 476 dwelling permits having a valuation of \$1,419,630 were issued.

New Tariff Schedule.

A COMPARISON of the proposed Fordney Bill (which provides a new tariff schedule) with the present Underwood law is given below, insofar as it affects building.

Material	New	Old
Cement	5c per 100 lbs.	10%
Lime	10c per 100 lbs.	5%
Steel shapes	7/20c per lb.	10%
Sawed boards	15%	10%
Shingles	50c per M	free

Hold "Build a Home Show" in Mntgomery, Ala.

THAT the "Build a Home Show" which was recently held in Montgomery, Ala., has inspired a large number of prospective builders to erect houses during the summer months, is indicated by the many contracts that have been awarded since the show came to a close. The master plumbers are highly elated over the outlook for business during the next few months. A number of these men say that they have already felt to a very large extent the results of the "Build a Home Campaign." Contractors, lumber concerns and other supply firms also report a fine business.

It is estimated that the campaign has been largely instrumental in the awarding of contracts for the erection of fifty new houses in Montgomery during the past thirty days. There is more building in progress there right at this time than has been the case since the war closed.

A handsome and well equipped five-room bungalow, a model structure in every particular, was shown during the show. Thousands of people visited the bungalow during the week. Twenty-six exhibits, including those of master plumbers, furniture dealers, construction concerns and other companies, were on display. This was the first show of its kind ever held in Montgomery and possibly Alabama. From every standpoint it is declared to have been a great success.

Frame House in Plymouth, Mass., Built in 1677 Yet Standing.

One of the most interesting features of the Tercentenary Celebration of the landing of the Pilgrims, to be held at Plymouth, Mass., during the coming summer, will be the opening to the public of the William Harlow house, built in 1677. This is one of the few buildings now remaining which stood within the lifetime of any of those who came on the "Mayflower," and it has a particular interest owing to the fact that it was framed with oak timbers from the old fort, which, as Winslow relates, "was built in 1622 on the top of the hill under which the town was located."

After King Philip's War, when danger from Indian depredation had passed, the fort was dismantled and the timbers sold to Sergeant William Harlow, a man of prominence in the colony, who used them in the construction of his house on the ancient highway where it still stands.

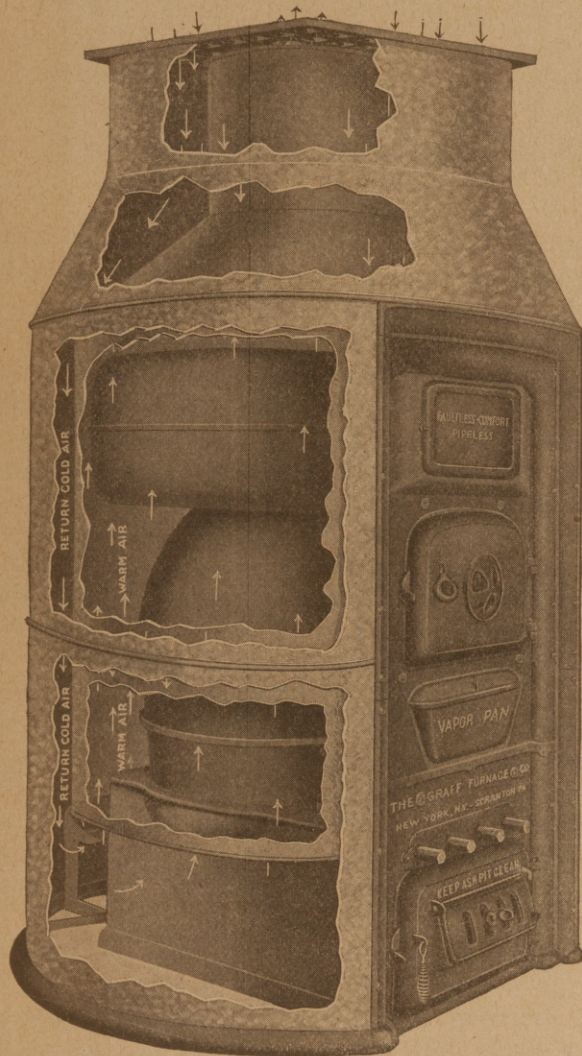
About forty years ago, in repairing the house, the oak posts and beams were uncovered and the ancient mortises, made in fitting the frame of the fort, were disclosed. An old hinge was also found, which is one of those on which the gate of the fort hung.

There is thus established in this house a connecting link between the founders of the first permanent settlement in America, three hundred years ago, and the present generation.

BIG RESULTS AT SMALL EXPENSE

THE FAULTLESS-COMFORT GRAVITY SYSTEM

Heating the entire house with only one register.
No hot air pipes, and no alterations in your house.
Everywhere used and everywhere successful.



THIS VERY POPULAR FAULTLESS - COMFORT PIPELESS-HEATER

is constructed by experienced furnace manufacturers; in business over half a century.

All parts of the heater are properly and liberally proportioned.

We therefore guarantee:
Durability, Economy, Efficiency.
This system of heating costs less than any other, and secures better results with less fuel.

It operates automatically, like gravity. Warm air rises, cooled air falls. Therefore, all the air in the house keeps in constant circulation, and this purifies the air.

Costly steam and hot water systems do not provide any circulation of the air, take up much room, and use more fuel.

A properly installed Faultless-Comfort Pipeless Heater is the simplest and most popular heating system obtainable.

In successful use with anthracite coal, bituminous coal or wood.

Our Booklet gives full information. Please ask for it.

This Furnace is also widely used for regular Pipe system.

THE GRAFF FURNACE CO., Manufacturers

61 and 63 Wooster Street, New York

Forestry Congress Meets in Atlanta.

A large number of foresters and lumbermen from all parts of the country attended the Southern Forestry Congress in Atlanta during the later part of July. The business sessions were held at the Piedmont Hotel.

Governor Thomas W. Hardwick and Mayor Key welcomed the foresters to the state of Georgia and Atlanta at the opening session. Colonel John H. Wallace, Jr., of Montgomery, Ala., responded to the address of welcome.

Henry E. Hardtner, of Urania, La., president of the congress in his annual address outlined the work before the forestry congress and gave a brief history of the past labors of the congress and urged immediate attention to the various state and sectional forest problems.

Papers read included "Forestry Needs of the Southern Appalachian, South Atlantic and Gulf States," with branch discussions as follows: "Put All Land to Its Best Use," by Colonel Joseph Hyde Pratt, of Chapel Hill, N. C.; "Status of Forestry Legislation in Southern States," E. C. Seicke, of Austin, state forester of Texas, and "Suggested Policy for Georgia," by Colonel William B. Greeley, United States forester.

"Protection of Forests From Fire" (a) "State Responsibility," by Gifford Pinchot, commissioner of forestry, Harrisburg, Pa.; (b) "Organization Methods," by Richard Chapin Jones, Virginia state forester, of Charlottesville, Va., and B. H. Stone, of Blairsville, Ga.; (c) "Co-operation of the States with the Federal Government, by J. H. Peters, chief of forestry management, United States forestry service, and W. D. Taylor, Dante, Va.; (d) "Co-operation of Railroads in Fire Prevention," by W. Besley, Maryland state forester, Baltimore, M. D.

Convert Waste Product of Sugar Cane Into Wallboard.

THERE are several opportunities for builders, architects, contractors and building material dealers to solve in an economical way many of the building problems now facing every community, large and small, in the United States.

One opportunity is presented to the building trades by the perfection and manufacture of a new building material similar in make-up to wallboard, and made from bagasse, a sugarcane waste product, or refuse, formerly used as a low grade fuel.

This "lumber" possesses durability, strength, lightness and resilience and is adaptable for both interior and exterior construction and finish. As an economical building material it is of interest to builders in every community.

It can be painted in the same manner as ordinary lumber. It can be used as a wallboard, a

wall lining, or for sheathing homes, schools, summer cottages and other buildings. It can be used without lath as a plaster base, forming a perfect bond with plaster, or as a base for magnesite stucco.

Up to the present time, bagasse—a waste product of the sugar cane industry—has been used only as a low grade fuel in the sugar houses.

This new material is manufactured in board length 9 to 12 feet long, in ¼-inch and ½-inch thickness, and 36 to 48 inches wide. These boards may be sawed like ordinary lumber and because of their texture, they will not split when nails are driven through them.

As a building material it is adapted for insulation sound-proof ceilings, walls and partitions, exterior base for stucco, drop siding, office cabinets, telephone booths, display booths and store window backgrounds.

Architectural and Building Exhibition in Liege.

AN important exhibition is being organized at Liege, Belgium, by the Liege Association of Architects. The exhibition will be held at the Palais des Beaux Arts, Parc de la Boverie, overlooking the Meuse River, and will be open during the months of August and September next. Meetings of the National Congress of Belgian Architects will also take place during this period.

The exhibition will be divided into three sections, the first section being strictly architectural. Members of the Liege Association and their guests, the architects of allied countries, will exhibit works, both executed or in project.

The second part of the exhibition will be taken up by numerous examples of ancient and modern furniture, of all periods, executed by Liege cabinet-makers, carvers and joiners. The excellent work executed in the past by these artists is well known and it is pointed out that Liege craftsmen of the present day have lost nothing of the art of their ancestors.

The third section of the exhibition will deal with new methods of building construction.

Meetings of the Congress are being called by the Federation of Agricultural Societies of Belgium, Monsieur A. Snyers, Architect diplome, Liege, being president of the Federation, and also president of the Liege Association.

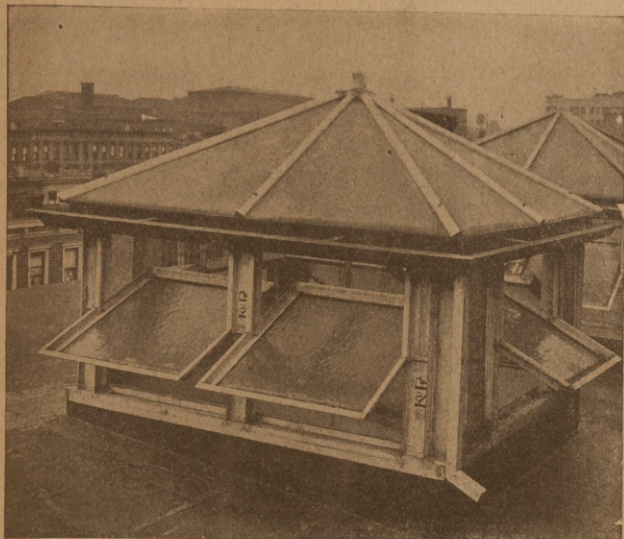
Enquiries can be addressed to "Secretariat general," Exposition d'Architecture, 3, rue de la Boverie, Liege.

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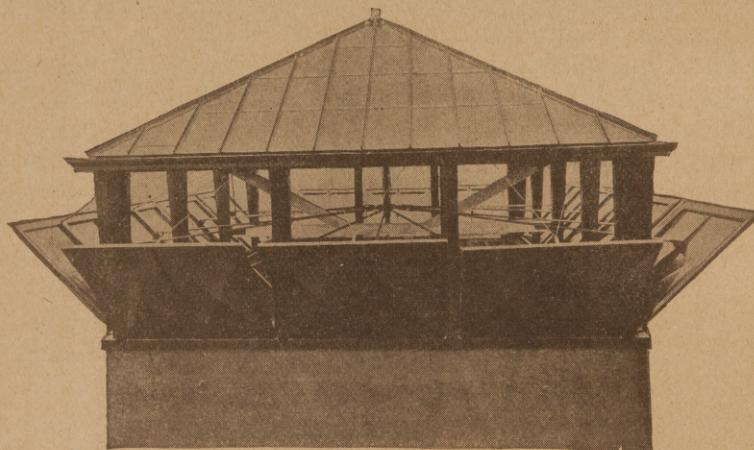
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TYPE "D" FOR THEATRES.

Construction a Barometer of General Business Conditions

In a special report issued by the Committee on Statistics and Standards of the United States Chamber of Commerce, of which A. W. Douglas, of St. Louis, is chairman, the total national wealth of the United States is estimated at \$288,464,000,000, of which \$77,321,000,000, or 26.8 per cent, is represented by the construction industry.

The report shows that in 1914 one-quarter of the 276,000 manufacturing concerns employing 10,658,000 workers with an annual payroll of \$5,368,249,000 and an annual output worth \$25,000,000,000, was devoted to construction products.

Metals Mostly Used in Construction.

In 1920, 90 per cent of all iron ore, copper and zinc, and 95 per cent of all lead mined was consumed by construction. Twenty per cent of the bituminous coal and five per cent of the anthracite coal mined was used by manufacturers of construction materials, by the railroads in transporting these products, and by traction lines and public service corporations in service to construction workers. A rough estimate of the value of these minerals is \$4,400,000,000, engaging more than 1,000,000 workers at an annual wage of approximately \$1,000,000,000.

Capital issues during 1920 totaled \$4,545,000,000, consisting of state, municipal, railroad and industrial securities, of which it is estimated 50 per cent were issued for construction in one form or another.

Even this estimate does not cover the whole field. It excludes indebtedness of the Federal Government for construction, and does not include issues of foreign governments or municipalities in this country, the proceeds of which were to be used for improvement and extension of the public undertakings. This sum also is short a large amount of expenditure for new construction because a great amount of expenditures for additions to plant, structures, etc., is paid out of earnings and surplus. With all these figures at hand it appears that 24 per cent of the year's capital accumulations, and probably 50 per cent of the national savings annually go to construction.

Construction—A Basic Industry.

Based on this analysis, the report concludes that the construction industry is an unique barometer of the state of business in all industry, and as such deserves a separate classification among the basic industries of the nation on a part with agriculture, mining, manufacturing, transportation and communication, commerce and finance.—(Sanitary & Heating Engineering.)

Small Cities Building Apartment Houses.

The old-fashioned American home is slowly being abandoned in the smaller cities throughout the country.

A recent report issued by the Civic Development Department of the United States Chamber of Commerce shows that the smaller cities are beginning to take on big city airs and building apartment houses instead of erecting small dwellings, which has for years been the custom.

This fact brings out the popularity of the modern apartment house. This fact should be taken under consideration by those who expect to invest in homes, for rent or for sale in the near future.

The modern apartment house offers to the house-wife every convenience she might desire, steam heat, gas, electricity etc. In many ways the apartment affords a more suitable home than the small dwelling, especially for the smaller family.

Apartments add a certain beauty to the small city, when built on a spacious lot with the proper landscape gardening. It gives to the city large and handsome structures often of unique design.

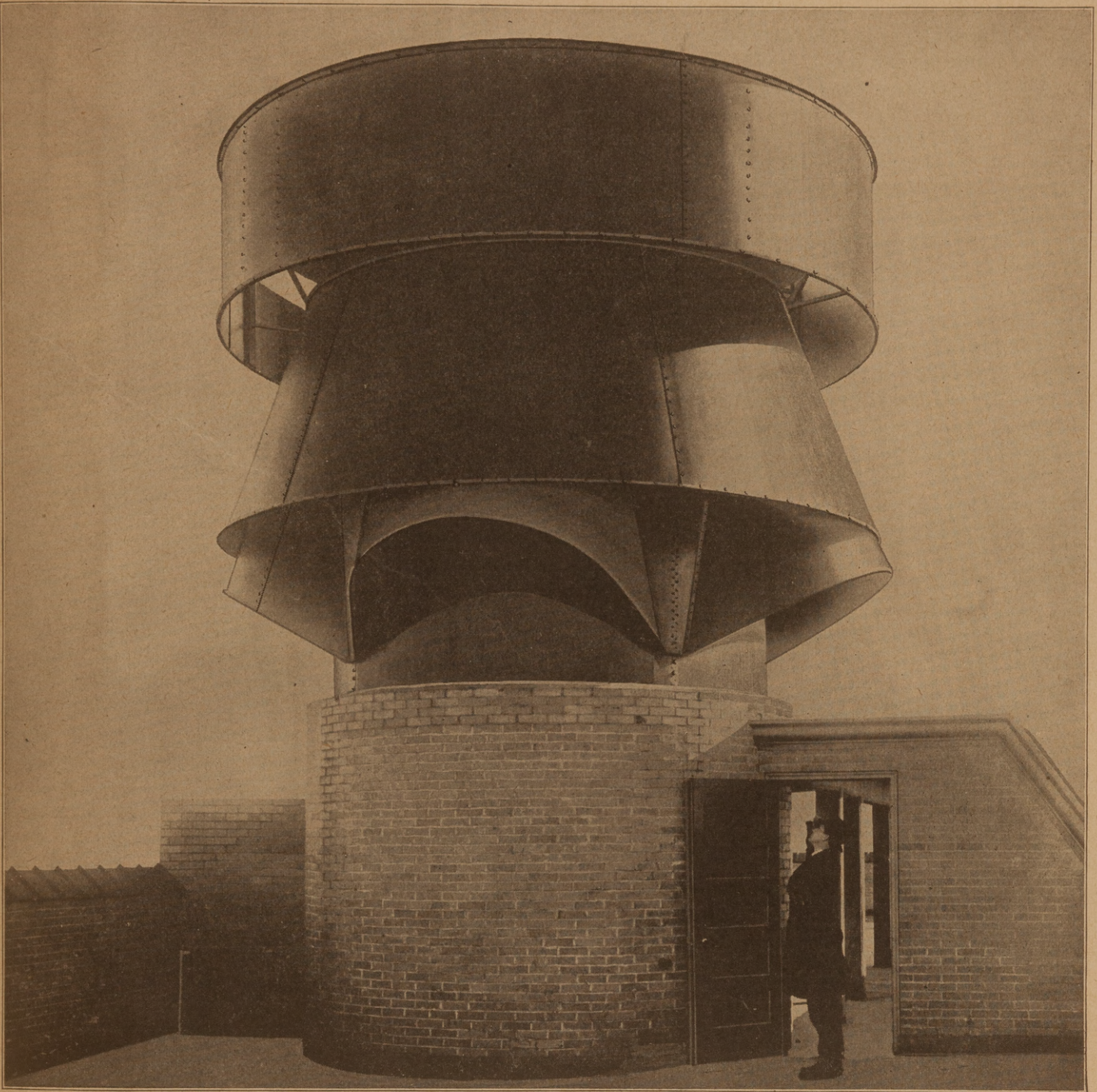
While the smaller cities have not had as much experience with this type of habitation as the larger cities, yet the report shows that nineteen per cent of the dwellings erected during 1920 were of the multi-family or apartment-house type.

This new feature of home building in the smaller cities of 15,000 to 20,000 population should be of interest both to the builders and contractors throughout the country. The larger the building the more money comes to the contractor and supply dealers.

Memphis Building for June Activities Exceed \$1,000,000 Mark.

Memphis, Tenn.—During June, 311 building permits with a total valuation of \$1,061,664 were issued here, compared with the previous high record of May when 251 permits valued at \$788,812 were issued. Among the permits were 56 for frame dwellings costing \$171,120, 9 frame and stucco costing \$37,200, and 27 brick dwellings costing \$171,600. Permits were issued for 2 church additions costing \$106,800 and for 2 manufacturing plants costing \$189,600.

In all, 93 permits for dwellings were issued during the month, compared with 40 dwelling permits in June, 1919, 22 in June, 1920, and 42 during the highest month, April, in 1920. Total valuation of the 199 permits issued in April, 1920, was \$923,590.



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Its Dimensions are:

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THIS enormous Arex ventilates the entire **6-story St. Francis Hospital of Peoria, Illinois**, where it works 24 hours every day, silently and efficiently doing its work to the entire satisfaction of all the hospital authorities, patients, nurses and employees. Then stop to think—all this without the cost of a cent for operating or maintaining this monster. Isn't that a real recommendation? Nothing but an Arex could accomplish this great feat.

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V. Jobst & Son, Peoria, Illinois
Rudolph J. Jobst, Peoria, Illinois

Arex Company, Conway Building, Chicago, Illinois

Luke Seawell, Representative, 422 Austell Building, Atlanta, Ga.

Are We to Be Cliff-Dwellers?

The small cities of the United States are gradually abandoning the old-fashioned American home for the modern apartment house.

This fact was revealed in a report on building operations in this country in 1920 issued by the Civic Development Department of the Chamber of Commerce of the United States. This report, which was compiled by the National Chamber in conjunction with the Federal Bureau of Labor Statistics, is one of the most complete of its kind ever prepared, and contains definite data on the amount of building construction carried on in the United States last year.

The building figures show that in 1920, seventy per cent of the families provided for got one-family dwellings; eleven per cent two-family dwellings and nineteen per cent apartments in a multi-family dwelling. According to the report, the figures also indicated that the proportion of multi-family dwellings that were provided last year was the largest in the small cities which have not had as much experience with this type of habitation as the larger cities. At the same time the report shows that there was more house building in proportions to population in the smaller than in the larger cities. The new accommodations—house or apartment—provided in cities of 25,000 to 100,000 population was one for every 258 inhabitants, while in cities of more than a million population it was one for every 591 inhabitants, and the average for all the cities listed was one for every 350 inhabitants.

It is shown that 1920 was the record year for sales of bath room equipment despite the small amount of new residence building. A great deal of this equipment was used in the conversion of one-family dwellings into tenement houses. The economic and social significance of these alterations, the report says, is of first importance.

A blank soliciting the required building information was sent out to the 288 cities in the country having a population of 25,000 or over. Their total population was nearly 38 million. Of these, 131 cities, with a population of 81.5 per cent of the total, reported.

"It is interesting to note," says the report, "that of the estimated one billion forty-three million dollars spent on buildings in 1920 in the cities reporting, more than 36 per cent (\$382,307,000) were devoted to dwelling. Factories and work shops came second with 16.8 per cent; stores and mercantile buildings third, with 13.3 per cent; while office buildings and garages tied for fourth place with 8.2 per cent each. Schools, hospitals and charitable buildings together called for 5.4 per cent or \$77,388,000. Amusement places cost more than churches, hospitals or public buildings, the sum being \$38,637,000.

"If the rate of building in the non-reporting cities was the same as in those which reported,

the total number of buildings in all the cities of 25,000 or more population may be estimated at 195,000, at an estimated cost of \$1,280,000,000."

Builders' Exchange Grows Steadily.

The Columbia Builders' exchange, 1114 Lady street, has been organized three months, and for a three months old infant, V. C. Dibble, the secretary-treasurer and main spring behind the organization, contends that it is a lusty youngster with bright prospects of outgrowing its present quarters inside of the year.

It has developed a bulletin service to contractors, subcontractors and material men, and out-of-town visitors have said that its service is superior to that of some older exchanges they could mention. It has started a permanent exhibit of building materials, has had 24 sets of plans for large jobs on its tables, including five sets for jobs that will total around \$300,000 now on the table. It has listed 223 prospective jobs. While it was organized independently of the chamber of commerce, it has cooperated heartily with that body in several of its undertakings; enlisting in the membership drive, assisting in entertaining the Greenville boosters, furnishing a number of cars, assisted in welcoming the Spartanburg highway boosters and also was in evidence on the Columbia-Saluda trip. It also has secured the cooperation of architects in several towns and cities in putting plans at the disposal of Columbia builders and has done much to promote goodfellowship among its members. It has grown from 49 to 62 active and associate members and within the exchange has organized a master builders' association.

Cardinal Points of Good Stucco Design:

(1) Stucco should not be run down to the ground without a solid impervious base course.

(2) The proper overhang and drip should be provided for all window sills and other horizontal woodwork, and some stop should be provided at the ends to avoid the concentration of water over end of the sill.

(3) The design should be chosen to permit of a generous overhang of eaves and cornices.

(4) There should be no horizontal surfaces of stucco on which water can collect. Liberal discriminating use of flashings should be made wherever water might get behind stucco—such as at roof and wall intersections, under joints of masonry trim, etc.

(5) Chimneys should be covered with impervious caps to avoid unprotected stucco at top of chimney. Chimneys should be wrapped with metal lath before stuccoing. Sheathing should be eliminated and metal lath back-plastered according to the finding of the U. S. Bureau of Standards.

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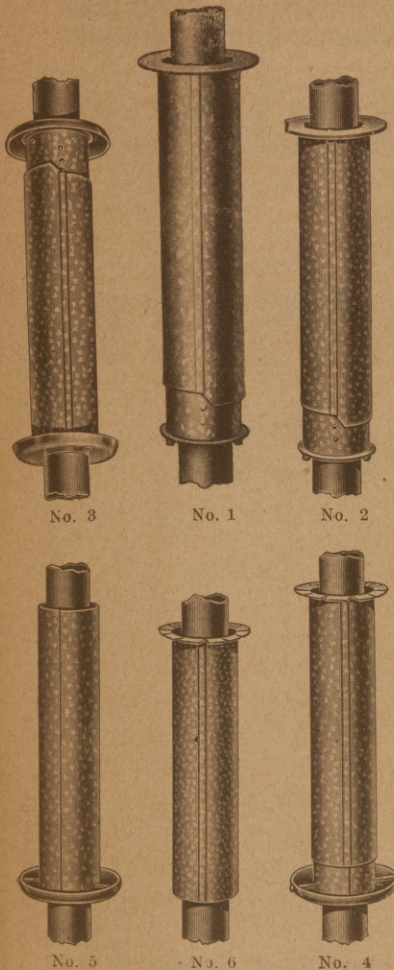
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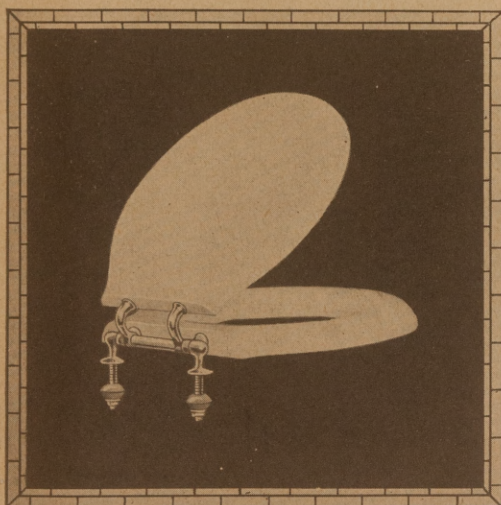
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Improvements at Montreat North Carolina Now Being Completed.

The new auditorium at Montreat North Carolina, with a seating capacity of 5,000 persons, is now being completed. This building, with other improvements, represents an out-lay of over \$100,000.

Construction of natural stones, many of which were gathered on the grounds, brick and steel, the building will be doubly strong, safe and fireproof. Nothing has been spared in making the new building one of the finest and best equipped auditoriums in this section of the country.

In addition to the new auditorium, an up-to-date light and power plant is being completed. Water from an additional stream has been piped into the plant and will be used to generate electricity for general use in Montreat. The new arrangement will make it possible to develop from one third to one half more electrical current than has been available heretofore.

Cottages are now being occupied at Montreat, and prospects are good for the erection of several more. These houses are growing more popular each year, and the number now considerably exceeds those of last season.

Improvements on the Montreat hotel since last season amount to between \$4,000 and \$5,000. The hotel is now comfortably accomodating many guest, and it seems certain it will be filled in a very short time, due to the convenience that architectural planning and good building has afforded.

Large Contract for Dry Kilns.

The Union Sawmill Company, of Huttig, Arkansas, whose mill, one of the largest in the Southwest, was recently destroyed by fire, has placed an order with the Moore Dry Kiln Company, of Jacksonville, Florida, for ten dry kilns, each 20 by 120 feet. These new kilns will have a daily capacity of 200,000 feet of pine boards and the contract is one of the largest placed for kilns in the Southwest for several years. The Filer & Stowell Company, of Milwaukee, Wisconsin, are furnishing machinery for rebuilding the mill. The Moore Dry Kiln Company are patentees and manufacturers of Moore's moist air kilns, which are known throughout the country, having long ago achieved an enviable reputation for their superior qualities. The company also manufacturers a complete line of dry kiln equipment of an equally high standard of excellence. Besides their original plant at Jacksonville the company also has a large plant at North Portland, Oregon. L. Moore is president; Chas. J. Williams, Jr., vice-president; D. D. Bundrick, secretary.

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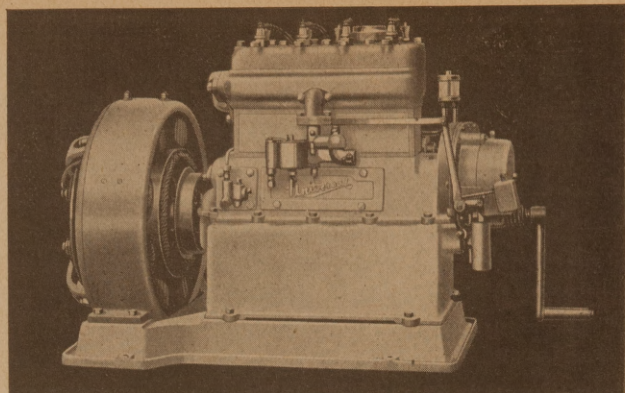
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Universal Electric Generating Sets are being specified largely for new buildings requiring isolated electric service because of its smoothness of operation, reliability and economy.

Its capacity makes the Universal the ideal plant for larger farms, country estates, churches and boat lighting. It has sufficient power to carry the overloads frequently imposed on small lighting plants which cannot be expected to stand up or give satisfactory service under such conditions. The Universal will supply current for lights, motors, or utensils. Its capacity without overloading is 200 twenty-watt lamps.

Ideal for moving picture work. You will be interested to know how this plant is constructed in our large especially equipped factory.

Ask for bulletin No. 30.

Universal Motor Company
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Factory Construction for School Shop Buildings.

MR. J. C. BESWICK, State Supervisor of Industrial Education, Sacramento, Cal., reports that in his state a number of high schools are erecting shop buildings of concrete. The size found most suitable, which he recommends as a standard, is 40 feet wide by 150 feet long. Factory construction is followed throughout; concrete floors and walls, steel sash, steel roof trusses, some one of the many types of approved roofing for industrial buildings. All interior partitions are of hollow tile or concrete blocks. As this type of partition is movable, it has been adopted because of the many changes in such school due to introduction of new courses and changes in equipment.

Housing Shortage in Mexico City.

In answer to the many protests against high rents being made by those in Mexico City who are not owners of dwellings, whites Assistant Trade Commissioner R. M. Connell, the Excelsior state that there is a shortage of dwellings for more than 100,000 persons in the capital. It is estimated by this periodical that since the year 1914 the population of Mexico City has increased by more than 200,000, while during this period of seven years but 2,000 houses have been erected.

REMODELING and rejuvenating offers a field of activity for the builder that is not always appreciated and turned to good account.

In times when business is a bit slack and new construction is a little slow in coming along, the possibilities of dressing up an old building to look like new should not be neglected. This kind of business, however, is not apt to make its appearance felt so quickly or so distinctly as in the case with new work. It depends largely upon the aggressiveness of the builder in going after it.

Owners are loath to admit that the time has come to spend money to remodel, even though they realize the desirability of it. But the builder can very often, by a little study of a time-worn building, think out a scheme of dressing up the exterior and interior that will increase its rent-producing value that an owner will have a hard time finding a good reason for not having the work done. Every dilapidated building in your town, Mr. Builder, is a business possibility for you. Give it a little thought. Perhaps you can convert it into a business actuality.

And when you are think about the building in town, do not forget the buildings in the country and country homes in particular. They are apt to be out-of-date. Perhaps a few touches here and there, a new porch, a slightly altered roof, a new stairway or fireplace will do the trick at small cost to the owner and good profit to yourself.—(American Builder.)

Passes the Million Mark.

"City building total passes the million mark," declares the St. Petersburg Times, St. Petersburg, Fla., in a big headline. The story shows that there has been a sixty per cent gain over last season and that April has more than doubled the figures for 1920. "Permits for new buildings with a valuation of \$1,140,075 have been issued since January 1, it was announced last Tuesday," says the Times. "January, February and March showed an increase of 61 per cent over the corresponding period of last year." This is going ahead in a most satisfactory way, and shows that the Sunshine city expects to be ready for another great crowd the coming season.

Foreign Trade Opportunities.

Where addresses are omitted they may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, D. C., and at the branch offices of the Bureau, 315 Custom House, New York, N. Y.; 629 Federal Building, Chicago, Ill., and Association of Commerce Building, New Orleans, La., and 310 Custom House, San Francisco, Cal. For convenience in filing please use separate letter sheet for each trade opportunity request.

32547—A merchant firm in the Netherlands desires to secure agencies and purchase asbestos, asbestos packing, and all machine-room requisites; copper steam valves, cocks and fittings (brass), belting and felt fastenings, grinding wheels and grinding machines, Babbitt's metal, white metal, cutting tools, hacksaw blades and other saw blades, consistent, tool steel and other steel, all sorts of tool machinery, lathes, drilling machines, wood and iron working machinery, pipe and other wrenches, and all sorts of tools.

CHICAGO is the greatest lumber market in the world. Since 1890 an average of over 2,000,000,000 feet of lumber has come into Chicago every year. In 1920 the figure was nearly 2,500,000,000 feet, 60 per cent of which went into local construction and manufacturing industries. In 1900 the average freight paid on lumber into Chicago was less than \$3 per M feet. Since that time the local sources of supply for this territory have been exhausted one after another. Lumber shipments have traversed greater and greater distances, and the average freight bill paid by the Chicago distributor has steadily risen to more than \$12 per M feet."

JAMAICA has 400,000 to 500,000 acres of forest, including cedar, mahogany and stainwood.

A Comparison of Drinking Fountain Streams



Vertical Stream Bubblers
Condemned Everywhere

Camouflaged Vertical Stream.

Rainbow Stream, Hose-like; difficult to drink from.

No. 1 shows the vertical stream which permits saliva and waste water from the drinker's mouth to fall back to the source of supply. No longer considered sanitary.

No. 2 is a slight modification of vertical stream type. This slight angle is little if any improvement over No. 1.

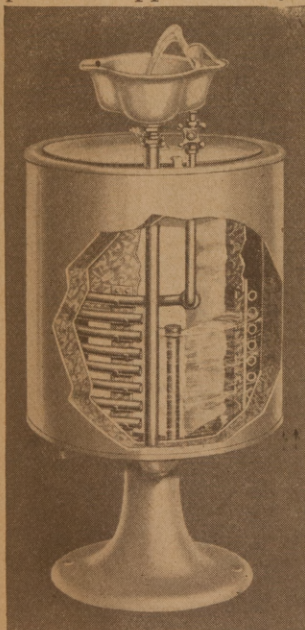
No. 3 is more sanitary if properly used. But stream is hose-like with no definite drinking point. Drinker places mouth as near water outlet as possible. Unsanitary like Nos. 1 and 2.

The Puritan Cantonment "Mound Building" Stream

Practical drinking mound is formed by mechanical means. Interference is set up in stream which retards water movement at the apex of arc. This stream



makes it impractical to drink from any other point. Approved by U. S. Government. Recognized by largest interests and schools in the country. Definite Drinking Point. Sanitary and Practical.



Puritan CANTONMENT DRINKING FOUNTAINS

Puritan "Cantonment" Coolers are designed to connect to pressure lines and are so constructed that the drinking water does not come in direct contact with either the ice or ice water, but is circulated through brass coil which is tinned both inside and outside.

With 2-stream "Mound Building" Projector this cooler is the most efficient and sanitary of its kind on the market.

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Wester, Miss C. J., James Bldg.

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Gideon, Samuel Edward, University of Texas, Dept. Architecture.
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Ketchum, W. E., Littlefield Bldg.
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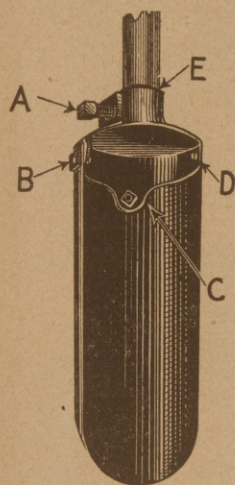
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Trade Notes of Interest

The National Pressed Steel Company, of Massillon Ohio, has recently issued the second edition of their Hand Book on the use of Steel Lumber Sections and kindred materials. The book contains some 170 pages, each page containing valuable information on the subject. Attention is directed to conditions that affect the total costs of the structural part of a building.

In order that the architect and engineer may more readily grasp the efficiency of Steel Lumber and the effect of its use on other portions of the building various comparisons are drawn, not with any spirit of criticism, but for the purpose of securing a better understanding as to the particular field in which a type of construction is most practical.

The Hand Book is neatly bound, well made up, small in size and affords a valuable bit of information for the Architect and Engineer.

The Brown Bed Company of Kansas City, Missouri have gotten out a neat bulletin giving information as to the service and convenience of the Brown Detachable and Disappearing Bed. Illustrations are given showing the position of the bed when ready for use and when folded. The Brown Adjustable Bed is designed along scientific lines that offer the sleeper the advantage of the disappearing bed without the detached feature. The Rogers Park Hotel Apartments on Sheridan Road at Pratt Boulevard, Chicago, Ill., is equipped with 276 Brown Beds. Hand Hotel Apartments at Orlando, Fla., is also equipped with 385 Brown Beds.

The July issue of FURNACE INSTALLATION sent out by the F. Meyer & Bros Company, of Peoria Illinois, contains an article on A STANDARD FURNACE SPECIFICATION which should be of vital interest to every man who installs warm air furnaces.

Link-Belt Buys Caldwell & Son.

THE Link-Belt Company has acquired all of the capital stock of the H. W. Caldwell & Son Company, and Frank C. Caldwell has been elected a director of the Link-Belt Company.

The Link-Belt Company will handle the Helicoid conveyors and power transmission machinery. While the H. W. Caldwell & Son Company's plan will continue to operate under separate corporate existence and under its present name, the joint facilities of the two companies will be available to the customers of both.

New Columbia Firm.

The Columbia Homes company of Columbia was chartered by the secretary of state yesterday with a capital stock of \$10,000. The firm will deal in a general real estate, mortgage, housing and leasing business.

E. L. Summersett is president of the firm and E. T. Summersett is secretary and treasurer.

Foreign Trade Opportunities.

Reserved information may be obtained from the Bureau and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated. Symbols: *Reported by American consular officers; †Reported by commercial attaches and trade commissioners; ‡Direct inquiries received by the Bureau.

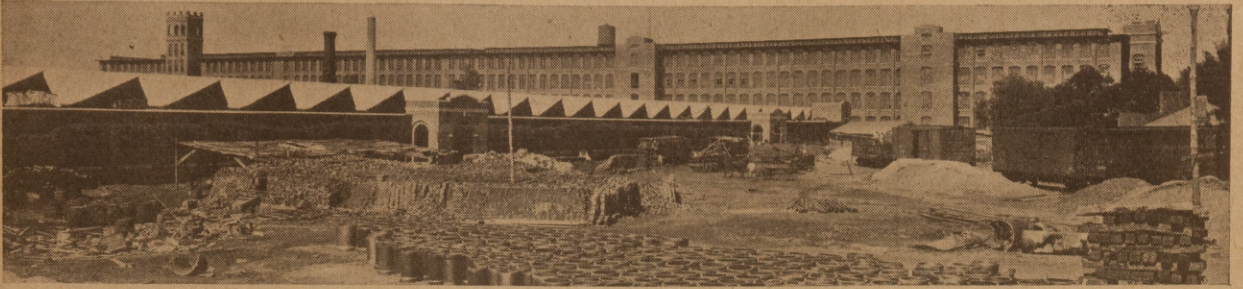
35188.—A contractor in England desires to purchase a portable plant that will make charcoal dust from sawdust and straw, and a plant that will convert charcoal dust into briquettes the size of walnuts. No reference offered.

Pine Stronger Than Steel.

CALCULATION confirmed by experiment has shown that, weight for weight, pine wood is stronger than steel in both transverse and tensile strength. It is regarded as doubtful if any metal could be made into hollow rod equaling a bamboo rod in stiffness without exceeding it in weight.

Lists of Importers of Building Materials and Industrial Equipment Available.

The following list of importers and users of building materials and industrial equipment in certain Far Eastern countries have been prepared by the Far Eastern Division and are obtainable upon request for the reference numbers indicated: Manchuria, FE-14014; China, FE-13052; British Malay, FE-18015; Burma, FE-20021; India, FE-21031; Australia, FE-23031; New Zealand, FE-24020.



Immense mill extension and new weave shed built during 1919 and 1920 for the Bibb Mfg. Co. of Columbus, Ga. Roberts & Co., Architects, Atlanta, Ga.; T. C. Thompson & Bros., Contractors, Charlotte, N. C.

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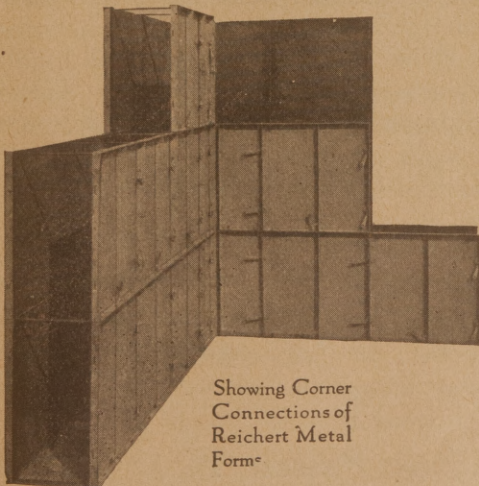
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Personal Mention

Samuel H. Wilde, draftsman, who was employed by the Davis & Thurber Machine Co., Lawrence, Mass., is now with James E. Allen, 283 Essex street, architect of that city.

Arthur O. Bottomley, formerly at 34 School street, Boston, Mass., is now practicing at 61 Court street that city.

Haynes & Mason, architects, is the name of the architectural firm, 280 Main street, Fitchburg, Mass., which was recently formed by S. Wesley Haynes and Harold E. Mason.

Joseph Bell DeRemer of Grand Forks, N. D., has been named one of ten who designed the most notable example of architecture at Los Angeles, Cal. Mr. DeRemer designed one of the five residences selected as being most meritorious.

Cleveland Wants Convention.

THE General Contractors' Association of Cleveland desires to entertain the National convention of the A. G. C. to be held next January. All members are urged to write "Cleveland" on the ballot which will be mailed to them from Washington headquarters. Cleveland is an ideal convention city with adequate hotel facilities and other advantages. Read the booklet about Cleveland, which has been mailed to all members.

L. A. SCHULKE, Secretary.

Spanish Government Assists in Building Houses for Laboring Classes.

A bill before the Spanish legislative body provides for issuance of bonds amounting to 25,000,000 pesetas, the proceeds of which are to be loaned by the Government to certain companies for the construction of houses for the laboring classes. Commercial Attache, Charles H. Cunningham reports that one of these companies is placing on its own account 2,000 bonds at 450 pesetas each, the per value being 500 pesetas.

Standardization.

ACCORDING to the Department of Commerce from 10 to 20% of the cost of building lies in lack of standardization, not only of methods and materials, but of building codes as well. Complete standardization of materials and codes is an Herculean task that should be accomplished. Already standardization of methods is enabling some up to date builders to do more business at less cost.

New School Building Feature Columbus Construction.

Columbus, Ga.—Although but 16 building permits were issued last month the total valuation was \$123,565. This included new work costing \$118,565. For school buildings were included at a cost of \$105,465.

Contract Awarded for \$250,000 Office Building.

San Antonio, Texas.—Contract has been awarded Chas. M. Schoenfeld, 324 Hunstock St., for the erection of an office building for the Geo. M. Maverick estate, at a cost approximating \$250,000. It will be 8 stories high, of concrete and hollow tile construction, off, foundry coke being quoted at \$6.50 and furnace coke L. Harrington & Co., Frost Bldg., prepared the plans.

Sand and Gravel Production.

ACCORDING to a recent bulletin issued by the United States Geological Survey, the total quantity of sand and gravel produced in 1920 was nearly 78,000,000 tons, or about 7,000,000 tons in excess of the 1919 output a total value increase from about \$46,000,000 to more than \$62,000,000. The production of building sand increased nearly 4,000,000 tons. The output of molding sand increased more than 1,000,000 tons.

Twelve Story Office and Bank Building Planned.

Baton Rouge, La.—Tentative plans have been made for a 10 to 12-story office and bank building to be erected here for the Louisiana National Bank. It is to be 64 by 128 feet, of steel, concrete with trimmings of stone, brick and terra cotta. One freight and three passenger elevators are to be installed.



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ARE DEFORMED BARS HAVING numerals, marks or deformations indicating the size of bar rolled as a deformation on the surface of the bar at short intervals.

The surface of the average deformed bar is so deformed that it is almost impossible with a scale to determine its diameter—therefore:

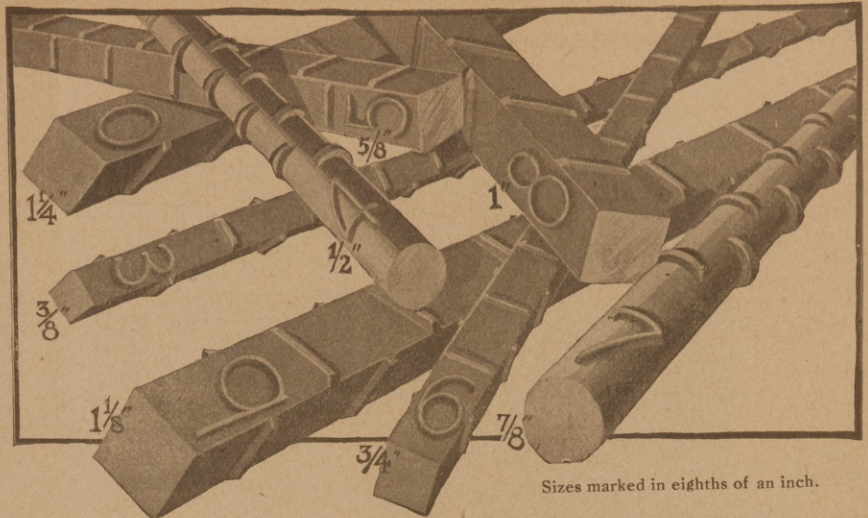
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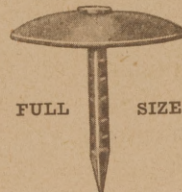


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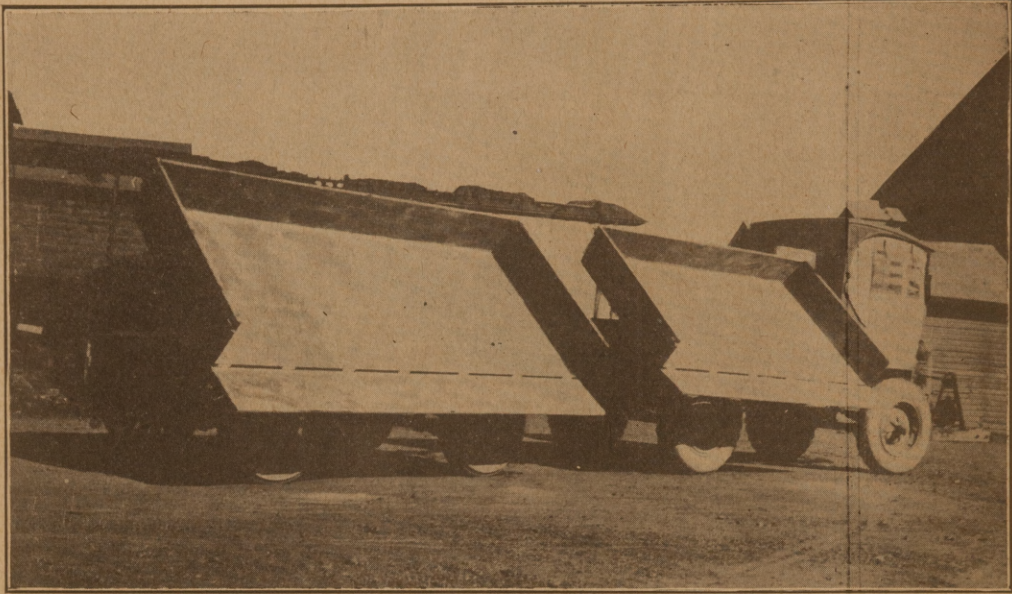
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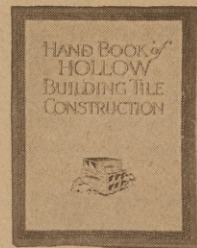
There is an advantage in being able to have your walls finished in a variety of ways—brick, stucco, limestone, etc. Where brick are used for surfacing, a solid masonry bond can easily be established between the two materials. Two ways of doing this are illustrated in the diagram on this page.

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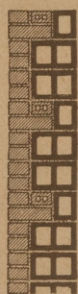
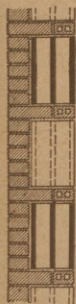
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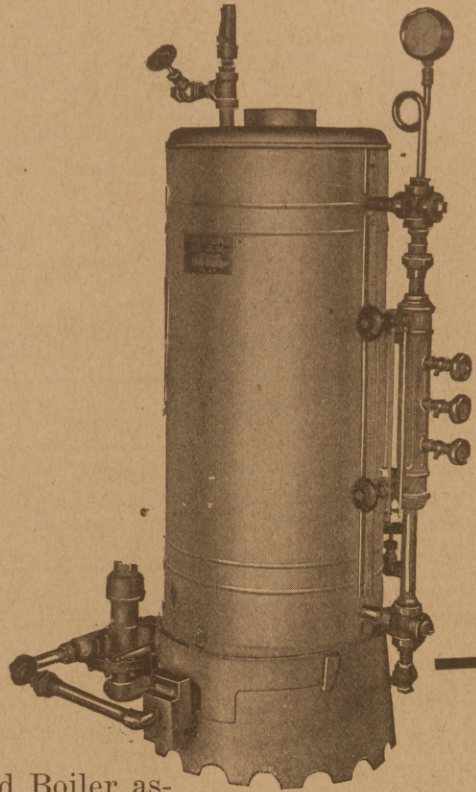
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Announcing the New OFELDT CAST IRON HOUSE HEATING BOILER

Built in Three Different Styles for Steam, Vapor or Vacuum Systems—for Hot Water Systems and for Industrial Hot Water Service.



THE design of the OFELDT Gas-Fired Boiler assures perfect circulation of water from bottom to top of boiler. Water passes through ALL the water ways, becoming exposed to the maximum heating surface in the shortest possible time, producing **steam in ten minutes**.

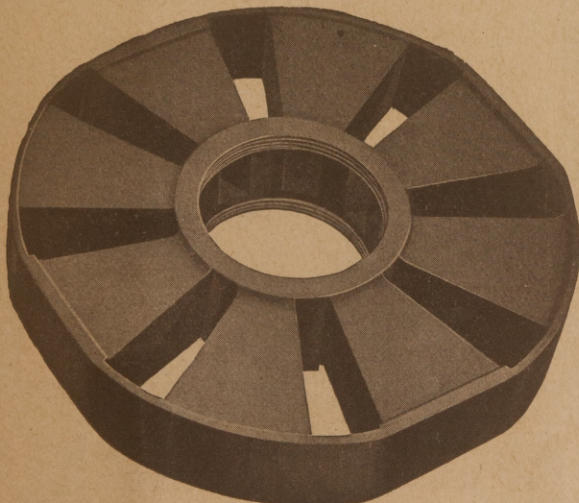
Keystone-shaped flues overlap in such a way that the heat must travel in a staggered path, thus utilizing every available heat unit.

The new OFELDT Gas Burner is of the most improved type. Impossible to back-fire, smoke or soot up. Made of bronze and iron—cannot rust. Perfect operation assured under all conditions. Lowest in gas consumption, highest in heating efficiency.

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is causing a greater demand everywhere for temperature control of heating systems. Saving coal is of especial interest now to home-owners and landlords.

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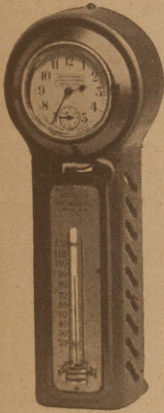
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HEAT REGULATOR

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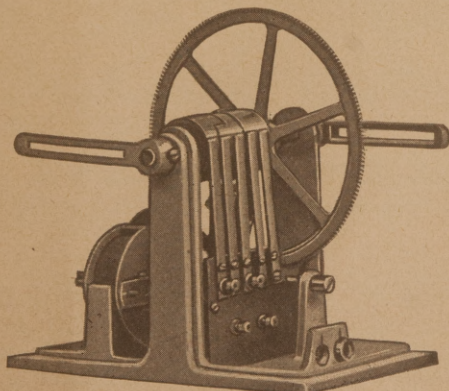
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Building and Construction News

Apartment Houses.

Birmingham, Ala.—Home Builders & Finance Co., Inc., Jno. B. Reid, Prest., will erect apartment house; 24 apartments.

Daytona, Fla.—R. M. Bailey, Bailey's Drug Store, will erect 2 apartment houses on 2nd Ave.; one of interlocking tile construction; 12 suites of 5 rooms, kitchenette and bath; other 4 suites; Jacob Espedahl, Archt.

St. Petersburg, Fla.—Mayor Noel A. Mitchell will erect apartment house; 55x100 ft.; 3 stories; brick and frame; 18 suites of 4 rooms and bath; gas heat; built-up roof; cost \$40,000; H. E. Wendell, Archt.; construction by owner. (Lately noted.)

Fort Smith, Ark.—Harry Tallman will erect apartment house on N. 13th St.; cost \$15,000; 8 suites of 4 rooms and sleeping porch.

Baltimore, Md.—Ephriam Bacon, 2943 Calvert St., will erect apartment house at 3101 St. Paul St.; 3 stories; cost \$35,000; Herbert C. Aiken, Archt., 4115 Ridgewood Ave.

San Antonio, Tex.—Louis Falkenstein will erect \$15,000 apartment house in Dewey Place; tile and brick; 16 rooms.

St. Petersburg, Fla.—Mrs. J. T. Hume will erect 3-story apartment house on 3rd Ave., north; cost \$30,000; H. E. Wendell, Archt.

St. Petersburg, Fla.—O. G. Heistand, V.-P., American Bank & Trust Co., will erect 3-story apartment house at 6th St. and 5th Ave., north; 17 apartments and 2 garages; mission type; brick veneer and stucco; cost \$30,000; W. H. Carr, Archt.

Louisville, Ky.—Pear M. Schenk will erect \$12,500 apartment house at 2029 Eastern Parkway; 2½ stories; brick veneer.

New Orleans, La.—Eureka Homestead Assn., will erect 3 apartment houses; cost, \$23,000, \$26,000 and \$21,680 respectively; Jones & Roessle, Archts.; construction by owner.

Oklahoma City, Okla.—Browning & Zuccoly will erect \$20,000 apartment house at 3502-4 Classen Blvd.; frame.

Dallas, Tex.—R. J. Glass and Mark E. Lott will erect \$20,000 apartment house at 4845 Gaston St.; 20 rooms; brick veneer.

Houston, Tex.—H. Sandfield will erect 2-story brick veneer apartment house at Smith St., and Webster Ave.; cost \$29,840.

Norfolk, Va.—E. B. Barclay will erect \$56,000 apartment house in Ghent; 3 stories; 12 suites; brick.

Norfolk, Va.—Hunter Harding will erect \$10,000 apartment house at Delaware and Newport Aves.; 2 suites.

Hotels.

Birmingham, Ala.—Mrs. Emmett Collins will erect Windermere Hotel, Fourth Ave., and 24th St.; 55x140 ft. with 40x40 ft. "L"; 3 stories; brick, hollow fireproof and interior tile; tar and gravel roof; cement, tile and yellow pine floors; metal ceilings and doors; steel sash and trim; ventilators; 100 guest rooms equipped with electric bells, telephone, running water; 7 stores on lower floor; steam heat; separate boiler for each store; electric passenger and freight elevators; cost \$100,000; bids due Aug. 1. Address Wm. Leslie Welton, Archt. (Lately noted.)

Gulfport, Fla.—H. E. Wendell, LaPlaza Theater Bldg.,

St. Petersburg, will erect hotel and amusement building; 100x105 ft. and 100x40 ft.; cost \$80,000; reinforced concrete, brick and stone; built-up and promenade tile roof; long leaf yellow pine, oak, concrete and tile floors; metal ceilings; plaster board; wire glass; mail chutes; vault lights; ventilators; install shuffle boards, skee ball and bowling alleys, roque courts, open-air moving pictures, bathing pavilions, boat slips; plans and construction by owner. (Lately noted.)

Ocean City, Fla.—Ocean City Beach Investment Co., will erect 30-room hotel; American Colonial type; cost \$40,000 to \$50,000; erect number of cottages and bungalows in connection; construct 9 hole golf course.

St. Petersburg, Fla.—Ames Hotel will erect addition; 50x100 ft.; 3 stories; 52 rooms and 16 baths; frame; built-up roof; steam heat and 1 pipe heater; cost \$30,000; H. E. Wendell, Archt.; construction by owner. (Lately noted.)

Kansas City, Mo.—Mrs. Helen A. Eysell (represented by Walter Eysell), is reported to erect 11-story hotel at 15 E. 24th St.; 26 ft. frontage; cut stone for first story, terra cotta and tapestry brick above; cost \$150,000; Brostrom & Drotts, Archts.

Warehouses.

Norman, Okla.—Oklahoma Cotton Growers' Assn. will erect several warehouses in Cleveland county.

Pauls Valley, Okla.—International Cotton Protecting Co., 14 E. Jackson Blvd., Chicago, will erect warehouse Pauls Valley, and Temple, Tex., furnished by Truscon Steel Co., Youngstown, O.; each to have 2 units of 1,000 and 700 bale capacity; former 158x50x23.4 ft.; latter 120x50x23.4 ft.; treating plants in connection; also erect 50 treating plants (manufactured by Mobile Steel Co., Mobile, Ala.), in different localities in Texas and Oklahoma. (Lately noted.)

Dallas, Tex.—Jno. J. Simmons will erect Warehouse on Laws St., for use of Dallas Paper Co.; 100x100 ft.; cost \$75,000.

Houston, Tex.—Standard Compress Co. will erect \$15,000 cotton shed on Middle St.

San Antonio, Tex.—Slimp Oil Co., Chester Slimp, Mgr., will erect distributing plant to consist of 30x69 ft. warehouse, 30x60 ft. garage, pump house, filling platform and stable; all structures reinforced concrete; Beverly W. Spillman, Archt.

Temple, Tex.—International Cotton Protecting Co., 14 E. Jackson Blvd., Chicago, will erect warehouse. (See Okla., Pauls Valley.)

Oklahoma City, Okla.—Oklahoma Cotton Growers' Assn., R. C. Kennedy, Pauls Valley, Chrmn. Warehouse Comm., will erect cotton warehouse at several points in state.

Dallas, Tex.—Peaslee-Gaulbert Co., L. R. Atwood, Prest., Louisville, Ky., will erect \$70,000 warehouse; 33,000 sq. ft. floor space; Chas. E. Groan, Dallas, State Mgr.

Lawrenceville, Va.—Business Men's Assn. and Co-operative Tobacco Co. will erect 2 brick warehouses.

Churches.

Chrichton, Ala.—Methodist Church, Rev. J. W. Horn, Pastor, will erect brick building at Springfield and Highland Aves.

Talladega, Ala.—First Methodist Church plans to erect building. Address The Pastor.

Owensboro, Ky.—First Baptist Church, Rev. W. C.

Boone, Pastor, will erect building; 2 stories; cost \$150,000; will erect at once Sunday school wing; 130x50 ft.; cost \$60,000; church proper 70x100 ft. with auditorium to seat 750 on main floor and 580 in balcony; porch across front; roof supported by Corinthian columns; R. H. Hunt Co., Archts., James Bldg., Chattanooga. (Previously noted.)

Baltimore, Md.—Huber Memorial Evangelical Lutheran Church will erect church and parsonage at Alameda and 29th Sts.; 1 and 2 stories; 73x64 ft.; cost \$64,000; F. J. Heldrich, Archt., 1156 Longwood St.

Baltimore, Md.—Grace Evangelical Lutheran Church, Rev. C. G. Wolf, Pastor, 5202 Harford Rd., will erect \$60,000 building; 108x46 ft.; stone; Gothic architecture; slate roof; concrete and hardwood floors; hollow fireproof tile; plaster board; rolling partitions; steam heat, about \$2,500; electric or gas lighting; A. A. Ritcher, Archt., 6th and Court Sts., Reading, Pa. Address L. O. Hilderbrand, Constr. Supervisor, 5201 Harford Rd., Baltimore. (Previously noted.)

Crystal Springs, Miss.—Methodist Church will erect \$50,000 building. Address The Pastor.

Joplin, Mo.—South Joplin Christian Church plans to erect \$50,000. Address The Pastor.

Kirkwood, Mo.—St. Peter's Catholic Church, Rev. Eugene Coyle, Pastor, will expend \$30,000 for repairs; church, rectory and sisters' convent will be changed to Spanish architecture; buildings overlaid with stucco; Spanish tile roof on church; interior improvements to school.

Altus, Okla.—First Methodist Church plans to erect \$50,000 building. Address The Pastor.

Greenwood, S. C.—Greenwood Cotton Mills will erect church, Rev. W. H. Murray, Pastor; 65x65 ft.; brick; asphalt and shingle roof; wood and concrete floors; steam heat; electric lights; Thos. W. Cothran, Archt.; construction by owner.

Elgin, Tex.—Baptist Church plans to erect \$40,000 building. Address The Pastor.

Fort Worth, Tex.—Trinity Church, Rev. Lee W. Heaton, Rector, 1515 Lipscomb St., will complete \$150,000 building for community center; reinforced concrete and brick or hollow tile; composition roof; concrete and wood floors; interior tile; ornamental terra cotta; vaults; rolling partitions; wire glass; steel sash and trim; ventilators; Chas. Allen, Archt., 209½ W. 8th St. Address Mr. Heaton. (Lately noted.)

Bank and Office.

Deland, Fla.—Volusia County Bank changed name to Volusia County Bank & Trust Co., and will enlarge banking room; 35x30 ft.; brick; Barrett roof; wood and tile floors; Nesser & Anderson, Architects., Jacksonville; Gus Laumann will supervise construction.

Winter Haven, Fla.—Snell National Bank will erect addition.

Baton Rouge, La.—Louisiana National Bank will erect bank and office building; 64x128 ft.; 10 or 12 stories; steel, concrete, stone, terra cotta and brick; flat composition roof; marble, concrete, hardwood and pine floors; hollow fireproof tile; interior tile; vaults; wire glass; vault lights; steel sash and trim; 3 passenger and service elevators. (Lately noted.)

Hammond, La.—Citizens National Bank will erect bank and office building; 40x75 ft.; brick and stone; Barrett roof; stone or marble floors; steam heat; vault lights; vaults; cost \$35,000; bids opened in about 15 days; Favort & Livaudais, Archts., Title Guaranty Bldg., New Orleans.

Kirkville, Mo.—Citizens National Bank will rebuild structure; cost \$40,000.

Charlotte, N. C.—Mutual Building & Loan Assn., S. Tryon St., will erect \$25,000 office building; 50x48 ft.; brick and stone; Barrett and tin roof; tile and maple floors; steam heat; electric lights; bids opened; Louis H. Asbury, Archt. Address owner.

Athens, Tenn.—First National Bank, J. G. Fisher, Prest., will erect building at Jackson and Washington Sts.; 42x80 ft.; 2 stories; stone and brick; marble wainscot; marble fixtures; tile and wood floors; R. F. Graf and Sons, Archts.-Engrs., Knoxville. (Previously noted.)

Schools.

Anniston, Ala.—City Board of Education will erect high school; 2 stories and part basement; 246x110 ft.; fireproof; hollow fireproof and interior tile; composition roof; wood and concrete floors; steam heat; ventilators; cost \$140,000. Address Lockwood, Poundstone & Billie, Architects. (Lately noted.)

Daytona, Fla.—Volusia County Board of Public Instruction, De Land, will erect addition to Central High School; Jno. A. Rogers, Archt., Daytona. (60,000 bonds lately noted voted.)

St. Augustine, Fla.—State Board of Control, Tallahassee, will erect primary building at Florida State School for Deaf and Blind, Dr. Albert H. Walker, Prest.

Dublin, Ga.—Laurens County Board of Education, Z. Whitehurst, Secy., ordered election Aug. 18 on \$250,000 bonds to erect and equip rural school buildings; 4 to 6 rooms; frame; Alexander Blair, Archt., Macon. (Lately noted.)

Crowley, La.—Arcadia Parish School Board will open bids Aug. 9 to erect high school building at Crowley and grade school at Egan; also opens bids for \$150,000 school bonds. (Lately noted in part.)

Jonesville, La.—Board of Education will erect \$75,000 school building; J. W. Smith, Archt., Monroe.

Manifest, La.—Board of Education will erect \$15,000 school; J. W. Smith, Archt., Monroe.

New Orleans, La.—Folse-Hecker Auto Tractor School, R. E. Folse, Prest., 730 Julia St., will erect 4-story brick building on Carrollton Ave., nr. D'Hemecourt Ave.; motors to be installed.

Sicily Island, La.—Board of Education will erect \$65,000 school building; J. W. Smith, Archt., Monroe.

Baltimore, Md.—Public Improvement Commission, Rabt. Garrett, Chrmn., Garrett Bldg., will install lighting, heating, ventilating and plumbing system in schools Nos. 30, 40, 42, 94, 112, 113, Colored High School, Western High School, City College, Nos. 4, 25, 31, 33, 34, 35, 37, 39, 62, 67, 78, 92, Hillsdale School, Bank Street School, Highlandtown, Nos. 8, 13, 93, 49, 79, 19, 100, 52, 9, 95, 75, 103, 107, 108, 109, 110 and 116; cost \$75,000; Henry Adams, Calvert Bldg.; C. L. Reeder, 913 N. Charles St.; Jas. Posey, 11 E. Pleasant St.; Hermann Eisert, 11 E. Lexington St., Engrs.

City and County.

Roanoke, Ala.—Jail, City is reported to have voted \$10,000 for jail. (See Schools.)

Middletown, Md.—Memorial—Memorial Building committee rejected bids to erect memorial hall; will have plans revised and call for new bids to be opened about Aug. 15; Edw. Leber, Archt., York, Pa. (Lately noted.)

Asheville, N. C.—Home—County Commrs., Chas. E. Waddle, C. N. Brown and others, Bldg. Comm., will erect \$25,000 children's home; 2 stories; Smith & Carrier, Architects. (Lately noted.)

Hattiesburg, Miss.—City Hall—City will erect city hall at Front and Forrest Sts.; 3 stories; fireproof; cost \$100,000; T. E. Batson, Mayor; R. E. Lee, Archt.



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THIS symbol appears on every genuine package of Alabastine. It guarantees you beautiful, durable, sanitary walls, modern and delicately tinted in soft, pleasing colors which harmonize perfectly with your rugs and draperies.

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We guarantee results by using our service.

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Our waterproofing process is as permanent as the pyramids and as strong as the Rock of Gibraltar.

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of the day is that an organization should be judged by its service and not by what it claims for itself.

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We do not sell Ferro-Tite. No exception is made to this rule. We furnish and apply Ferro-Tite only under contract for waterproofing.

ORGANIZATION:

We have the organization to take care of your needs. We do nothing but waterproofing and have devoted many years to this type of work. It costs you money not to have the best in the first place. A contract with us guarantees you satisfaction. Let us assume the responsibility for your waterproofing work. It is our specialty and we save you time and worry.

GUARANTEE:

Upon completion of our work we guarantee that all surfaces treated by us are and will remain absolutely watertight and waterproof, we to promptly make any repairs necessary within the time limits of the guarantee at our expense.

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WHERE USED:

Ferro-Tite is used on subways, basements, scale pits, power houses, tanks, concrete, reservoirs, tunnels, etc. Also on porous building products, such as brick, stone or tile. It is applied on wet or dry surfaces.

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As a noted authority recently said: "To strike the keynote in modern ideals, the new home must have Oak Floors."

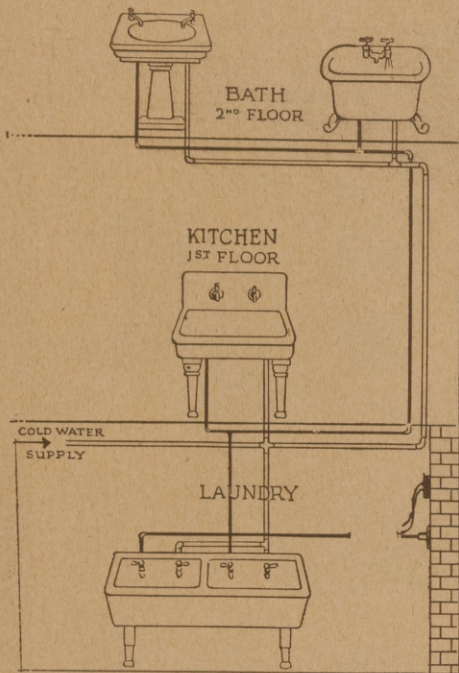
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**INSTANTANEOUS HOT WATER AT EVERY FAUCET
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Simply turn any faucet—one or more—you will get hot water instantly, where you want it and all you want any desired temperature. It serves you instantaneously any time and all the time never requiring adjusting or regulating; compact 22" x 12" x 8"; all enclosed, sealed, installed out of sight usually in the cellar. A half-hour job by any electrician and you have instantaneous hot water at the turn of a faucet.

Economical in the long run, although operating may cost a trifle more than gas; no waste, you pay only for hot water consumed; special current rates usually granted—consult your power company. For a decided advantage beyond economy see Paragraph 4.

Double safety protected; operates automatically under any water conditions, guaranteed one year against defective material and workmanship; will last indefinitely; price should not be an object, however it costs less than any other kind of automatic water heater—only \$175.00 plus installation about \$10.00 with service in.

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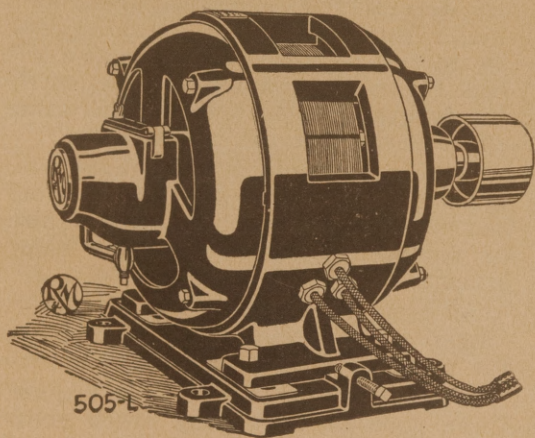
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The burners in the American Water Heater are placed *around* and *outside* of the coil—and are protected by a canopy top. The acid water of condensation cannot fall on any part of the burners, but is caught in a drip pan—and evaporated by the heat from the burners.

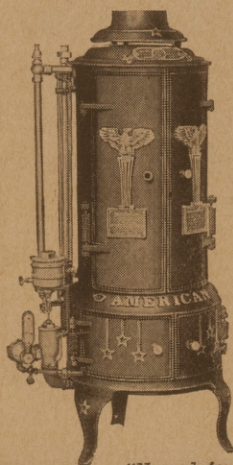
This does away with one of the most common sources of trouble in gas-fired water-heaters—condensate water splashing into the burners, clogging and ultimately eating them out.

The Canopy Top in the American combustion chamber absolutely prevents all this. At no time does condensate water come in contact with the burners or any part of the heater except the drip pan. This means unimpaired combustion.

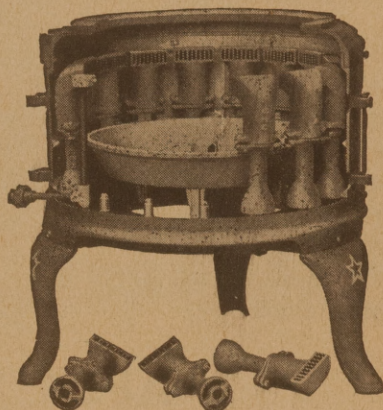
The American Heater is 100 per cent—on the day it is installed—and years afterward.

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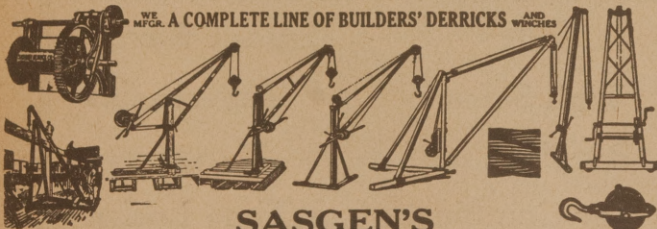
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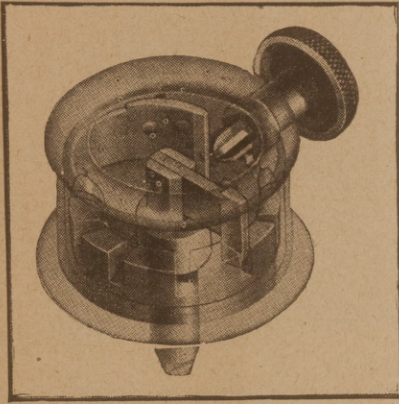
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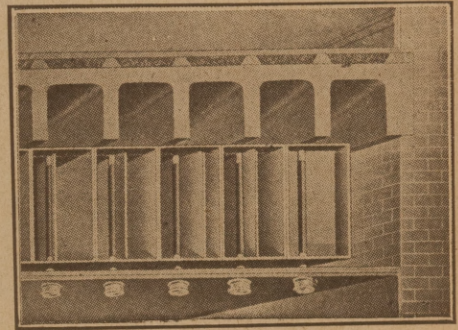
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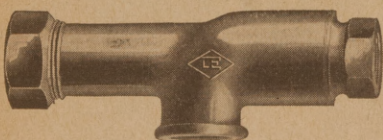
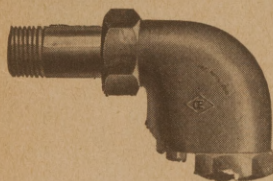
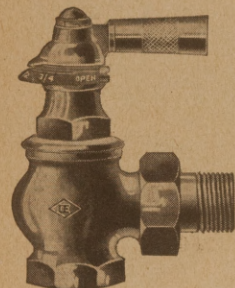
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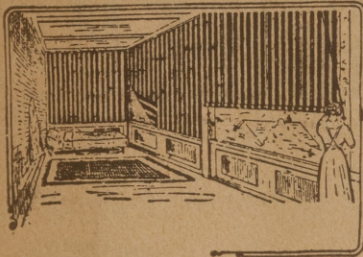


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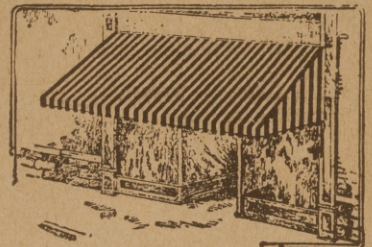
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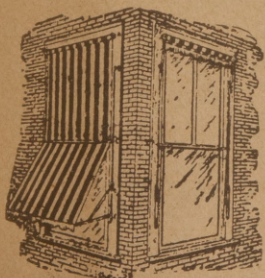


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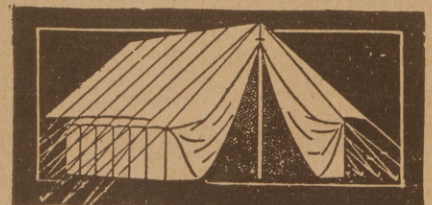
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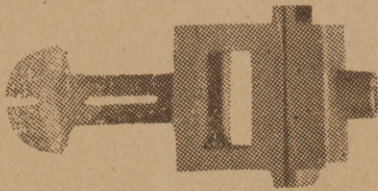


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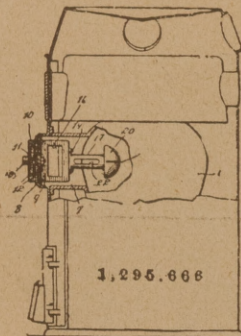


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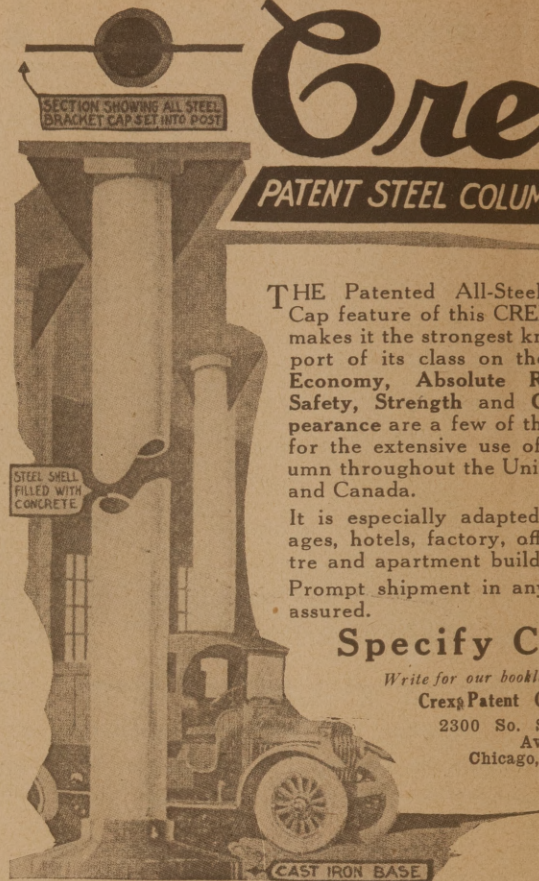
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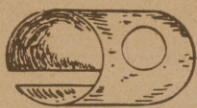
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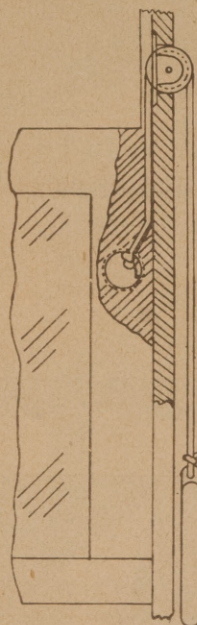
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Countersink a 1 1/8 inch diam. hole 7/8 inch deep in the face of sash stile. This hole to be located approximately seven inches from top of sash and centered with the exposed surface of sash stile. Care must be taken here to get opening in center of stile after thickness of stop has been deducted to obtain a neat appearance. Plow edge of sash in usual manner and connect plow with countersunk opening by boring a 1/2 inch hole at 45° angle, as shown on above sketch. Place 1 1/8 inch diam. steel thimble in opening. Raise window sash and open socket of pulley stile and insert weight. Thread cord up over pulley and down through plow in edge of sash into opening of thimble and tie knot on end of cord as usual. Cover knot and thimble with finish metal cover secured with two round head screws.



SORG BROTHERS

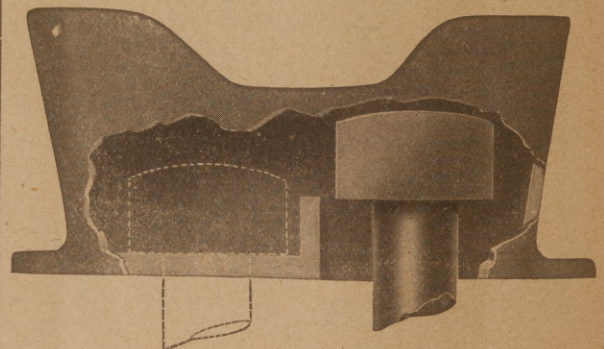
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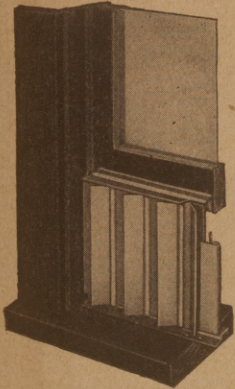
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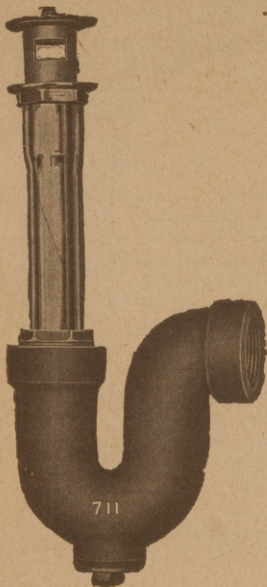
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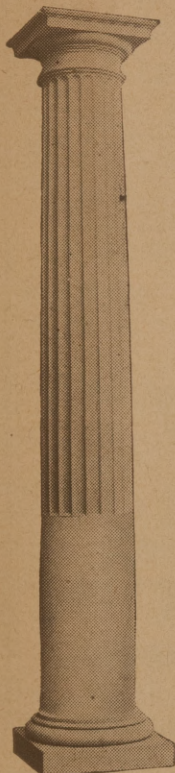
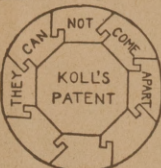
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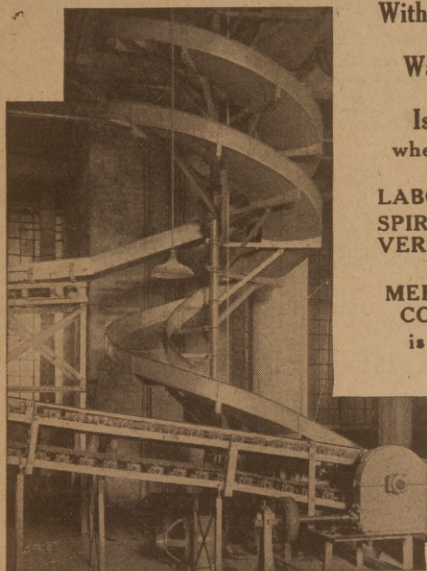


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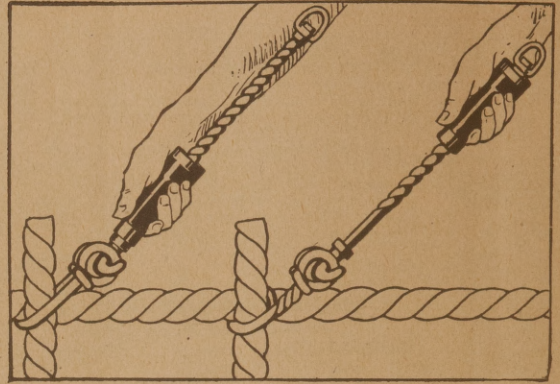
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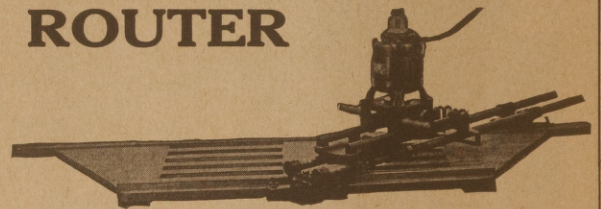
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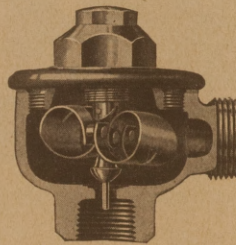
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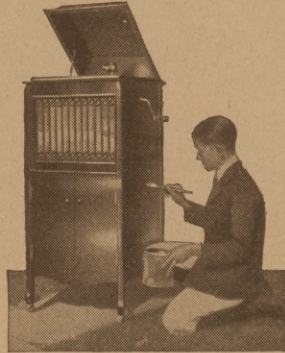
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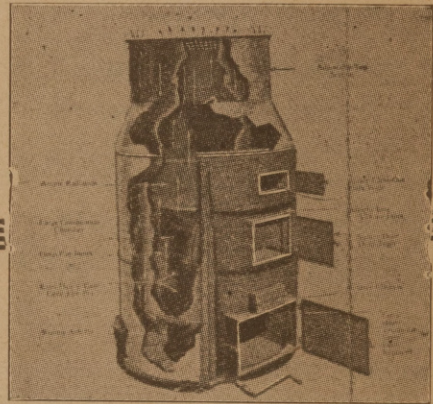
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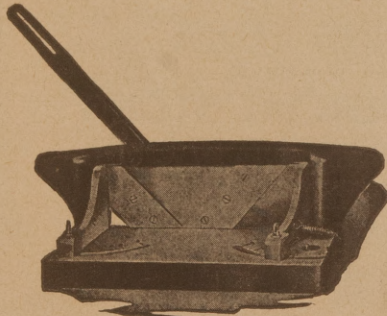
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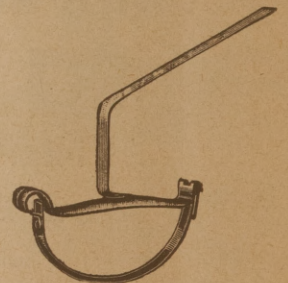
The Smith & Egge Mfg. Company

"ORIGINATORS OF SASH CHAIN"
Bridgeport, Conn., U. S. A.

REX Strap Gutter Hanger

The Best Strap Gutter Hanger ever made

because—



It locks entirely around the bead. Does not gap when the strap is drawn up tight. The arched channel shaped cross-bar gives enormous strength.

No tools are required.

It fits snugly on any size of bead.

Made of Galvanized Iron, Zinc or tinned and in all sizes.

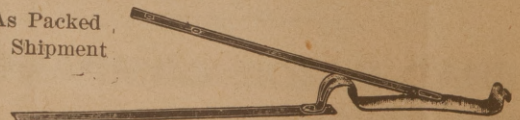
SOLD BY JOBBERS EVERYWHERE

Made by

Rockland Sheet Metal Works, Inc.

417 Gates Ave., Brooklyn, N. Y.

As Packed for Shipment



Attention

We Are EXPERTS on Bearing Troubles or Lubricating Problems.

Let us treat or work your own bushings you are now using of any material such as babbitt, bronze, brass, aluminum alloys, cast iron, etc., for any service anywhere.

After our doctoring you absolutely get no hot boxes with big loss in valuable babbitt metals and incalculable time lost by shut-downs and rebabbiting. You will save over 80% in lubricating oils. 300% increase in the life of your own bearings. 50% to the life and service of your belting. Reducing friction in your bearings with great economy in power. Reduces the fire risk to a minimum caused by hot boxes in dusty places such as woodworking establishments, fans, motors, etc. Overcomes the saturation of machinery and workmen with an increase in output for both. By the elimination of a greater portion of your liquid oils which we need not mention are very injurious to belting.

INVESTIGATE

DESIGNS—SPECIFICATIONS—LAY-OUTS

—for—

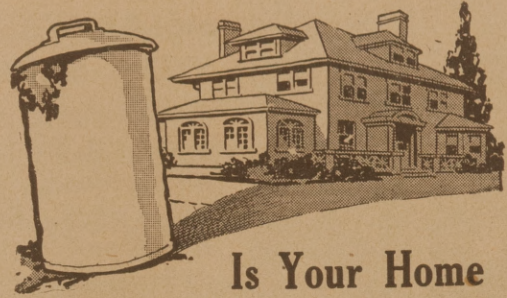
Oil or gas engines to operate on any fuel from crude oil to gasoline—two-cycle or four-cycle for any purpose from a farm engine to airplane engines. Two-cycle work is our hobby—Are you having any trouble with your engine?

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Designing, Mechanical, Lubricating Engineers.
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Is Your Home in The Shadow of the Garbage Can?

Ansonia Destructors will remove it and its nuisances such as odors, flies, dirt, etc. They take the "un" from unsanitary. The Ansonia High Temperature Destructor is recommended by all Boards of Health. They are made in all sizes from 15" square floor space, up to 500 tons per day. There is no nuisance from odor or smoke; they are successfully operating in the heart of many large cities. One having daily capacity of 72 tons has been operating in the Waldorf-Astoria Hotel on Fifth Avenue, New York City, for the past ten years. Another near by is in Stern Brothers Department Store; it has a daily capacity of forty tons. Altho it has been operating for eight years it has just received its first repairs which were very slight.

Built to Last. Minimum Upkeep. Most Efficient.

Low first cost and perfect guarantee.

Other Ansonia Products are:

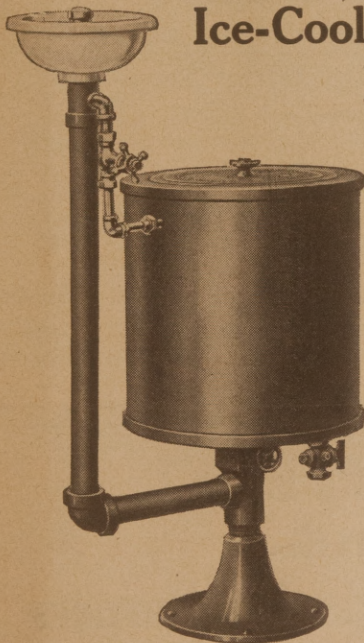
Automatic Sewage Ejectors and Water Lifts.
Gasoline and oil separators for garages.
Coal-E-Con to save fuel by increasing combustion.
Pumps of all kinds.

Plans and specifications gladly furnished.

Ansonia Sanitary Mfg. Co.

Dept. 1-D 71 Eighth Ave., New York City

20th Century Sanitary Ice-Cooled



Fountains

Consider for a moment, the fact that there are more

20th Century

Sanitary Drinking Fountains in use than all others combined, and you will realize that there is a real advantage in selling them. Save water, will not spurt and will supply 75 persons. Write for

trade prices and catalogue of Sanitary Drinking Fountains.

20th CENTURY BRASS WORKS

Dept. C

BELLEVILLE, ILLINOIS



The Handwriting on the Floor

Not the most satisfactory, the most beautiful, biggest value—because we say so, but all these qualities because—

We buy the raw lumber from veneer mills, which enables us to obtain the choicest fitches. Our lumber is not resawed. Resawed material cannot be kiln dried successfully. And we guarantee our stock to be thoroughly kiln-dried.

Let us send you a beautiful booklet illustrating and describing our flooring, borders, parquetry, wood carpets, etc.

The Eagelsfield-Stewart Co.

"The Sudden Shippers,"
Indianapolis, Ind.





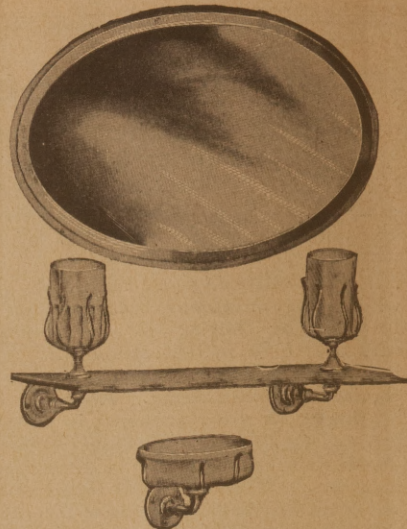
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BAKED WHITE ENAMEL ON STEEL, MEDICINE CABINETS

Proof against all ailments of other white goods. Cabinets have adjustable shelves. All doors swing right or left. Packed one in a box. Bath Room Accessories are "Wyco" on brass or Nickle Plate on brass, also white metal. Complete line. Prompt deliveries.

J. A. HOEGGER, Inc.

Dept. B
351 Palisade Ave., JERSEY CITY, N. J.



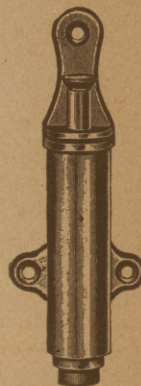
Shelby Door Holders

Have taken the place of the old style wooden wedge for holding a door open *because* they hold it securely, are always in place, their rubber tips will not mar your floor, and they are easily released with the foot. Made in two sizes for heavy and light doors and finished to match all Builders' Hardware. Be sure to specify "the Shelby."

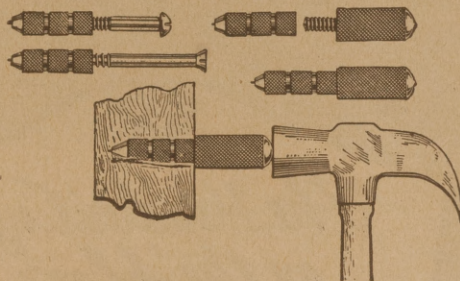
MADE BY

The Shelby Spring Hinge Co.

Shelby, Ohio



THE ONLY SCREW HOLES IN THE WORLD



No.	Wood Screw Holes	Length	No.	Machine Screw Holes	Length
4	"	1/2"	4-36	"	1/2"
6	"	13/16"	6-32	"	11/32"
7	"	13/16"	6-32	"	11/32"
8	"	13/16"	7-32	"	13/16"
9	"	13/16"	8-32	"	13/16"
10	"	13/16"	9-30	"	13/16"
11	"	1"	10-24	"	13/16"
11	"	13/16"	10-32	"	13/16"
12	"	1"	11-24	"	1"
12	"	13/16"	11-24	"	13/16"
14	"	17/16"	11-24	"	1/2"
16	"	17/16"	12-24	"	1"
18	"	17/16"	12-24	"	13/16"
20	"	17/16"	14-24	"	17/16"
			16-22	"	17/16"
			18-20	"	17/16"
			20-20	"	17/16"
			1/4"-18	"	17/16"
			5/16"-18	"	17/16"

Immediate Delivery from stock on the following sizes

I. S. STINE SCREW HOLES CO.
Waterbury, Conn.

Each size packed 100
Screw Holes and one Driv-
ing Head in a Box.

CUT THE HIGH COST OF FUEL

USE THE

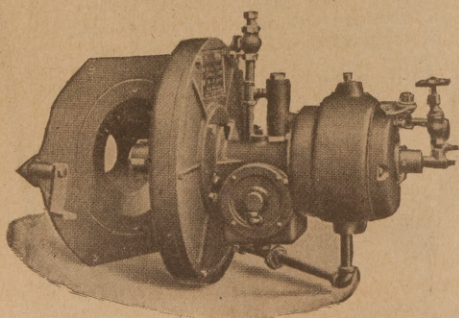
Ray Rotary Crude Oil Burners

FOR STEAM AND HOT WATER BOILERS
Adapted to Any Type of Boiler or Furnace
High or Low Pressure, 10 to 300 H. P.

Write for Circular A.

W. S. RAY MFG. CO., 29 Spear St., San Francisco, Cal.

Manufacturers of Ray Crude Oil Burners, Ray Oil,
Gas, Coal or Wood Heavy Steel Ranges





No. 6728.

Art Metal Ceilings and Side Walls

Architectural Sheet Metal Ornaments
Sheet Metal Statuary

We would like an opportunity to figure with you.

FRIEDLEY-VOSHARDT CO.

No. 733-37 S. Halsted St. CHICAGO, ILL.

STRUCTURAL SHAPES

A large and complete stock—all sizes—cut to any length
Facilities for quick handling—IMMEDIATE SHIPMENT

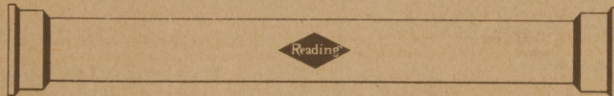
ALSO LARGE STOCK OF

Bars—Plates—Sheets—Reinforcing Bars—Rivets—Tool Steel—Pipe—
Boiler Tubes—Chain—Shafting—Staybolt Iron
Do not forget "Package Car Service"

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READING BRAND

The Soil Pipe with Five



SOIL PIPE

Guaranteed Features

1. Only the very best of raw materials used in its manufacture.
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WE MANUFACTURE A COMPLETE LINE OF
CAST IRON SINK TRAPS DRINKING FOUNTAINS
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VENT BOXES—WATER BOXES CESSPOOLS
HYDRANTS—BOILER STANDS WATER HEATERS
WRITE TODAY FOR CATALOGUE.

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NEW CENTURY SHINGLES

ALWAYS for 21 years the BEST
Now BETTER than ever BECAUSE
They are now made of
Keystone Copper Steel
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Write now for Booklet No. 40 and Price List and find out about this long life Metal before buying.
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FIRE DOORS & WINDOWS OF ALL TYPES
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The Strongest and Most Economical in the Market. One-half the amount of our Mortar Colors will do the work of any others, and they are unsurpassed in strength, fineness and body.

Write for samples and quotations. We manufacture a superior grade of Red Oxide of Iron Paint for Railroad Cars, Bridges, Barns, Fences, Etc.

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FRENCH'S

Builders appreciate French

Quality First

Standard Colorings for Interior and Exterior Mortars and Cements.

Special Architectural Colors to Order.

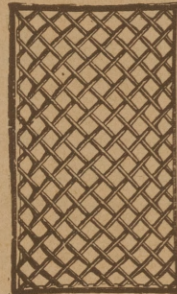
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Manufacturers of

Folding Gates

Elevator Cars and Enclosures

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AUTOMATIC SASH HOLDERS

Economical, Durable Practical



Invisible when installed. Do away with Pulleys, Sash Weights, Cords, etc. Eliminate Pocket Frames, Rattling and Attendant Nuisances. Save Labor, Time and Material.



Send \$1.00 for Trial Set Prepaid.

Mention Weight of Sash When Ordering.

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Contractors' and Building Castings, Machinery and Material, Steel Beams, Girders, House Front Columns, Lintels and Plates, Engines, Hoistry Rigs, Rope and Chain Blocks, Wire Rope, Boilers for Heating Buildings, Window Weights, etc., etc.

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EXCEPTIONAL BUSINESS OPPORTUNITIES

State Rights or Limited Agencies open for only practical economical heater insuring hot running water from same flame used for cooking. Applied standard gas ranges or stoves. Double profit for plumber—one on heater AND one on installation. Stove top AND water heater. Saves 25-50% bills. Newly invented, universal need, non-competitive, quick big seller, very profitable. See ad Page 85 VOLA TRADING CORP. 42 Broadway, New York.

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"THE BEST MONEY-MAKING TOOL IN MY SHOP"

This cleaner revolves, has hooks which pull strings and rags. Has been found practical by Chicago Sewer Dept. 4" with hooks \$5.50; 4" and 6" without hooks, \$5.00.

Send money to

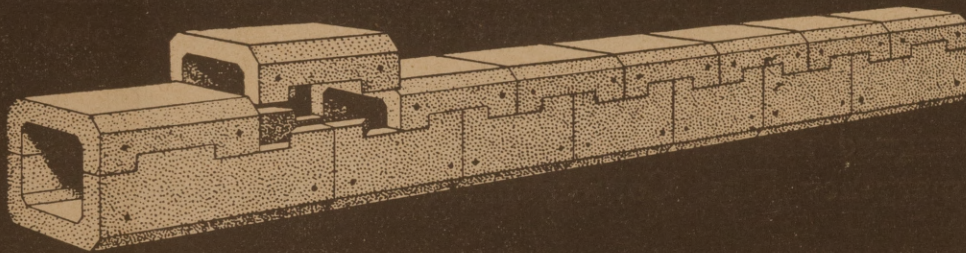
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Interlocking Concrete Culverts

PERMANENT—REMOVABLE—SUBSTANTIAL—ACCESSIBLE



Removable Top Units and Mortised Construction

WE FURNISH STEEL FORMS

For Wendelken Interlocking Concrete Culverts

WE WANT SALES AGENTS
IN UNOCCUPIED TERRITORY

Six Heights of Culvert Opening Can Be Made in the Same Form
with Any Slab Depth the Purchasing Engineer May Require.

Can You Beat It?

This is the only culvert form in which more than one size of culvert can be produced, and in which thickness of concrete can be regulated as may be required.

**\$5,000 SAVED ON EVERY 5,000 FEET OF
CULVERT YOU NEED. USE WENDELKEN FORMS**

The United States Government has adopted the Wendelken Interlocking Culvert as a "standard of culvert construction for 35 large Reclamation Projects."

The Interlocking Culvert Company

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Nashville Bridge Company

Designers and Builders

Bridges and Structural Steel Work

We helped build the Air Nitrate Plant at Muscle Shoals; Powder Plant at Old Hickory, Nashville; and Alcohol Plant at Collinwood.

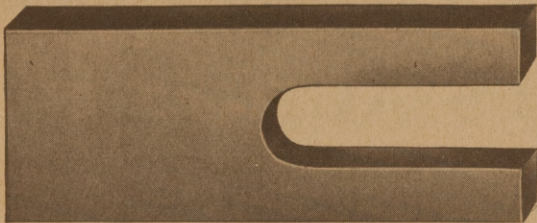
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OFFICE AND PLANT

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NASHVILLE, TENN.

Local and Long Distance Telephones
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Rough Cut Sticker Blanks

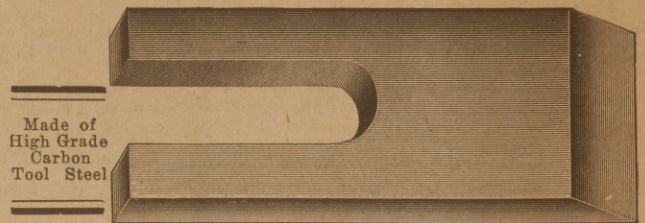


A large stock carried—Prompt shipments made.

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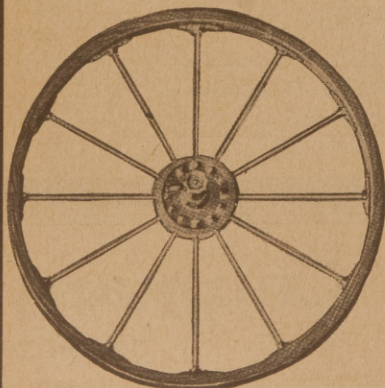
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Made of
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Tool Steel

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IT IS IMPORTANT to keep your band saw wheels trued up. This will help to eliminate the breaking of band saw blades.

We Repair Band Saw Wheels

true them up, put on new rubber bands and new brass bushings when necessary so as to make them run perfectly true. When in need of repairs write us. When ordering bands state diameter and width of wheel.

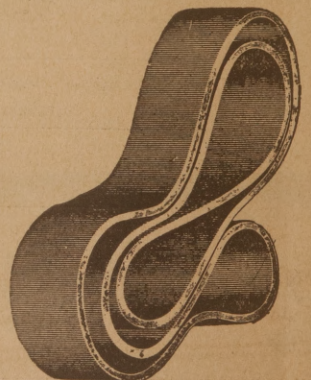
High Grade Rubber Bands for Band Saw Wheels
Carried in Stock

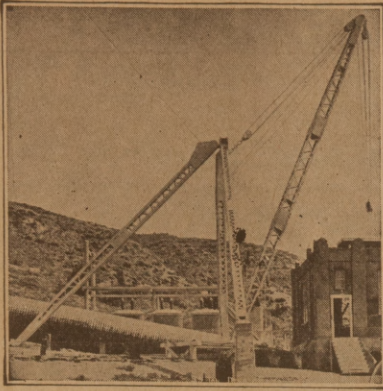
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4315-25 Wabansia Ave. Chicago, Illinois

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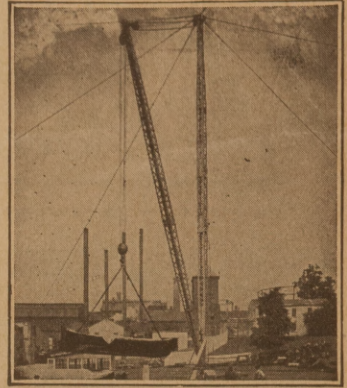




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STEEL and TIMBER
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 —FULL CIRCLE CRANES—
Terry Manufacturing Co.
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**BLACK AND GALVANIZED
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Angular corrugations over-lap one an-
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FLAT NON-STRETCH CENTER

Insures a wall against future bulging.

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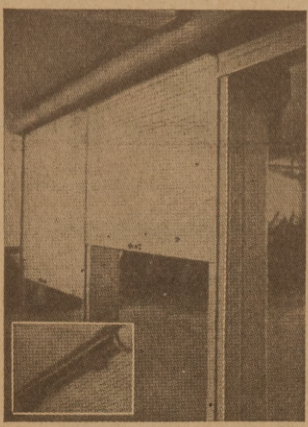


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Wherever Division of
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**Double Drainage Shower
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Feature No. 9

Victor traps are designed so compactly as to avoid cutting away construction work to install them.

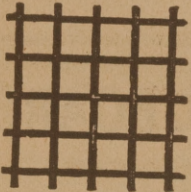
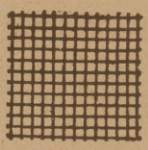
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The Jennison Adjustable Foot jacks it up in a jiffy.

Simply the twist of your wrist unscrews it—raises it or lowers it as you desire.

A sample will be sent free upon request. Sold by jobbers.

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may be admitted at
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Riefler & Sphinx Round System Drawing Instruments. Drawing Boards and Tables. Detail and Tracing Papers. Everything for the Drafting Room.

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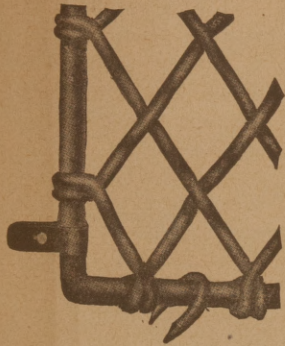
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Capacity 15 Cars Per Day

Washed and Screened Gravel and Sand for all purposes. Concrete Gravel, Roofing Gravel, Reinforced Concrete Gravel (thoroughly tested and proved superior to granite in fire resisting qualities), Pea Gravel, Screened Sand, Concrete Sand, Marble Sand (finest for sawing marble). Used throughout Georgia and Alabama. Gravel Pit, Cook's Ala.

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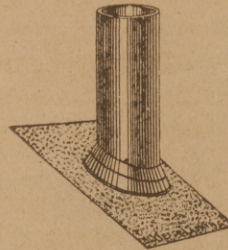


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Plumbers who want a flashing of a hundred good points select the



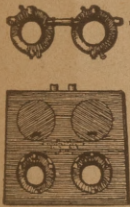
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Heavy lead
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They never
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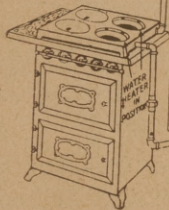
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Make cows comfortable, keep them clean, and increase the flow of milk. Used with either concrete or wood base.

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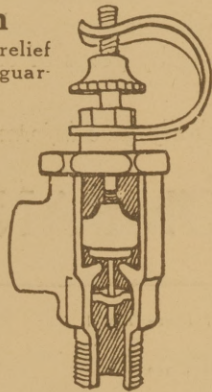
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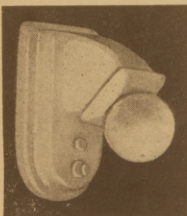
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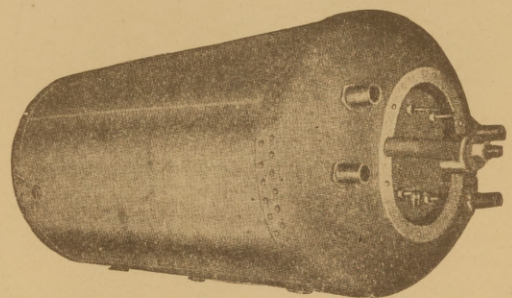
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