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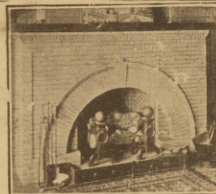
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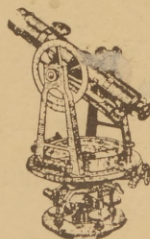
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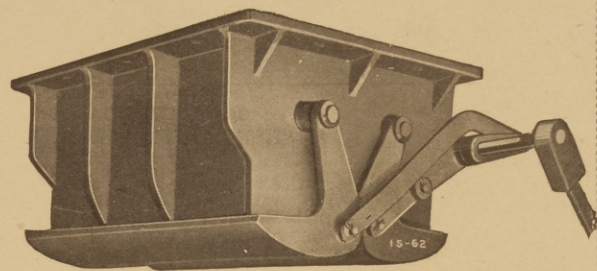
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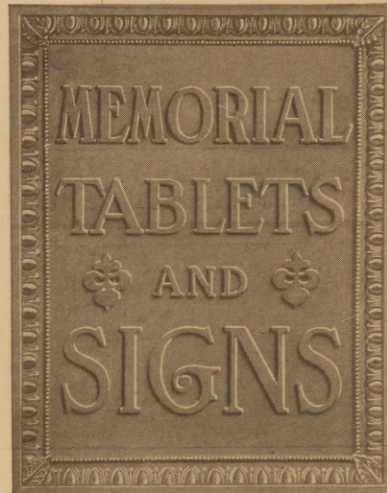
West New Brighton, N. Y., U. S. A.

45 Broadway, New York City. Fisher Building, Chicago, Ill.
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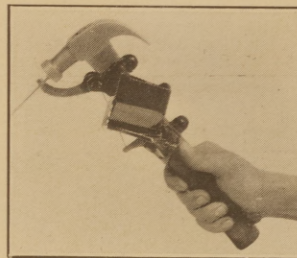
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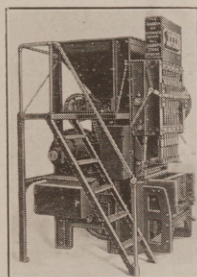
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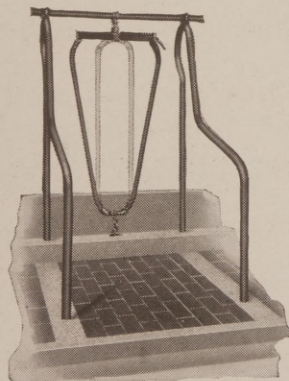
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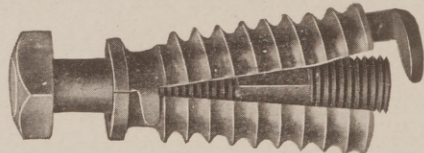
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LIGHT—AIR NO FLARE
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See that you have a price from our Company before placing order. Plans will be returned promptly if sent for estimate.

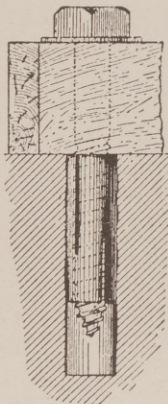
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expands evenly throughout its entire length from the first turn of the screw. Screw cuts its own thread as it enters.

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Locks Anywhere
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Adjustable
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Always Lifts
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DID YOU EVER GET ANY?



UP-TO-DATE ARCHITECTS DO.

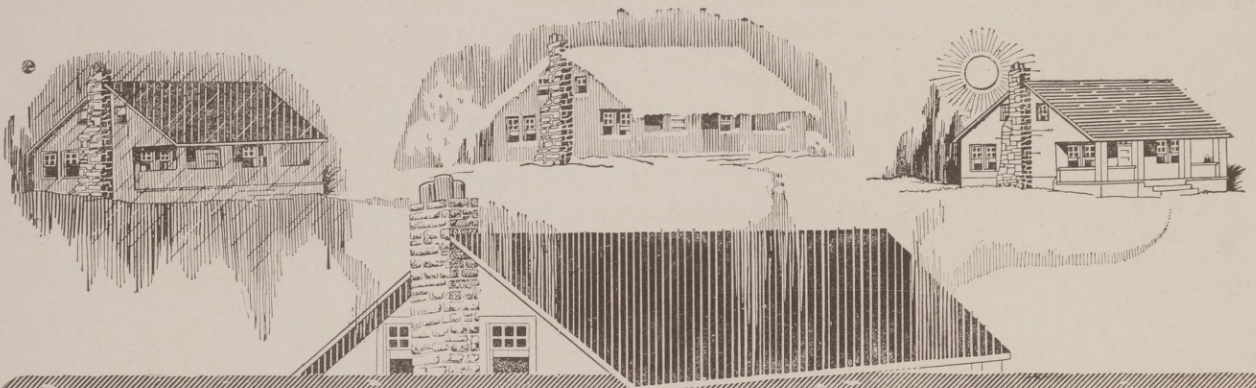
They want Guaranteed for Strength, Comfort, Beauty and Economy

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.

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BERMICO—the Standard Sheathing Paper, as it has been called—lives up to this standard of economy. It is moderately priced. Yet, unlike inferior grades, **BERMICO** consists of the purest, toughest, and longest of pulp-screened fibres.

Wherever **BERMICO** has been chosen to shield a building and its inmates from the weather and to

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BROWN COMPANY

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Dark Hollow Gray

MR. ARCHITECT: Before making the selection for your client consider **DARK HOLLOW GRAY**. There is a decided beauty in the soft, delicate gray shade of this material. This stone is possessed of great density, runs more uniform in color and texture and is of a fine, close grain.

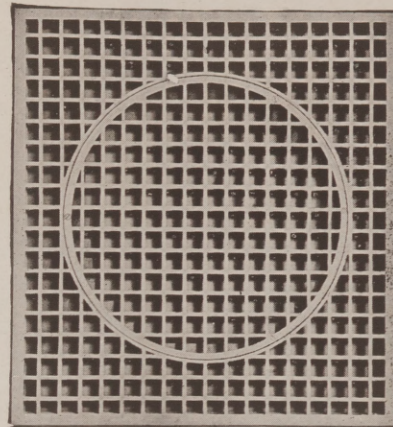
Write for samples of this material. Compare **DARK HOLLOW GRAY** with other Indiana Limestone.

We have in our stacks at the quarry several hundred thousand cubic feet of this material thoroughly seasoned and ready for shipment.

To assure yourself of getting this material, your specifications and contracts should stipulate the use of **DARK HOLLOW GRAY BEDFORD STONE**.

THE CONSOLIDATED STONE CO.
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DUPLEX GRATINGS for Pipeless Furnaces



We carry the following Gratings in stock for immediate delivery:

Size Grating	Size Collar	Size Grating	Size Collar
20 x 22	14	30 x 36	24
22 x 24	16	35 x 35	26
24 x 27	18	36 x 36	28
30 x 30	22	40 x 40	30
	45 x 45—36		

Prices on Application

TUTTLE & BAILEY MFG. CO.

NEW YORK

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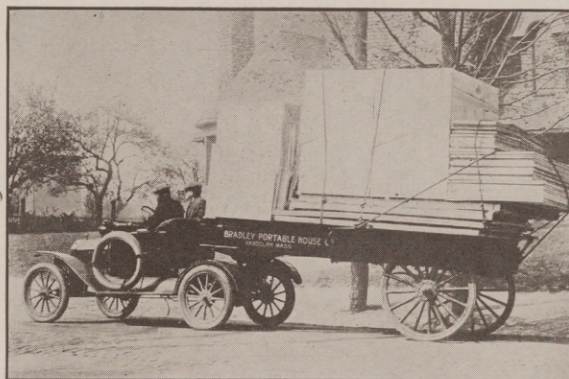
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Can't a Horse Pull More Than He Can Carry? Can't a Locomotive Engine, a Tug-Boat and an Automobile?

With a Martin Semi-Trailer a Ford can Easily Pull a Ton Without the Least Strain on the Driving Mechanism.

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Dealers: Write for discounts.



The Only Trailer That is 100% Efficient, Because:

It can be backed, turned and handled with ease in the narrowest quarters. (Unless a trailer can be backed and manipulated in freight yards and narrow spaces it is far from being 100 per cent efficient.)

It allows sufficient weight for traction. (Unless there is enough weight for the driving wheels for traction they will slip on the wet asphalt, ice and snow.) With the Martin Semi-Trailer enough weight is carried on the driving wheels for traction.

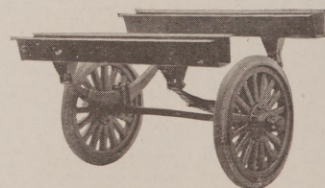
The Ford and Semi-Trailer combination make a unit, and is permitted on all streets and ferries. (Some cities have legislated against the use of four-wheel trailers, but in no case does this adverse legislation apply to the semi-trailer.)

The Martin Semi-Trailer was designed by automobile engineers. It is high grade in material and construction and can easily carry a ton. A Ford used as a tractor can easily draw a ton. The Rocking Fifth Wheel connects with the Semi-Trailer Ford Roadster. The connection can be made and unmade instantly. It enables the Ford to be used either as a commercial vehicle or as a pleasure car at will, since the Ford is not mutilated in any way.

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Fifth Wheels and Semi-Trailer Rear-Ends Up to Ten-Ton Capacity.

The Martin Semi Trailer and Ford Combination make the lowest priced one-ton truck in the entire commercial car field. It is very little longer, over all, than the conventional truck of the same loading space.

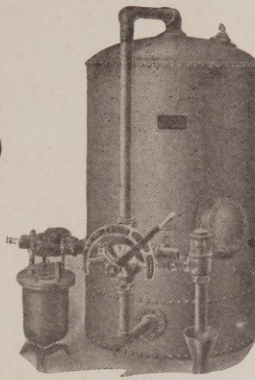


3-Ton Rear Assembly



There is a
**ROBERTS
FILTER**

For Every Need



*Style "G"
Roberts Filter.*

Catalog on Request.

Made in varying sizes to meet requirements for capacities. One valve controls all functions. Complete list of filters shown in Sweet's Catalog.

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FACTORIES—Darby and Frankford.
(Suburbs of Philadelphia, Pa.)

**Wright
Coal
Chutes**

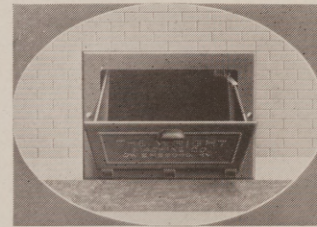


Are Mechanically Right

The design and construction of Wright Coal Chutes speak for them long and useful lives. They are constructed throughout of extra heavy cast iron, weigh practically three times as much as any other chute of the same dimensions. They will never lose their shape nor ease of operation.

They are easily installed. Will stand on flat surfaces which eliminates the necessity of staking and tying while being installed. They plumb themselves. Architects and contractors should always specify the Wright Chute.

*Write for Discounts
They are Liberal.*



**Wright
Machine
Company**

321 E. 2nd Street
OWENSBORO, KY.



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Patent Chain-Hanging
STANCHIONS**

Make cows comfortable, keep them clean, and increase the flow of milk. Used with either concrete or wood base.

Liberal Discount to Contractors or Dealers.

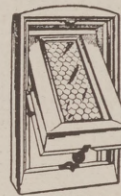
Manufactured by

Wallace B. Crumb

Box S, Forestville, Conn.

Yates Patent Window Hardware

and "APPROVED FUSIBLE LINKS" for All Purposes.



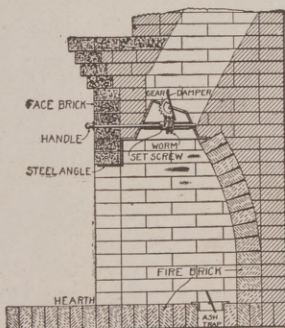
REVERSED
for cleaning



Regularly examined and labeled under the supervision of the Underwriters' Laboratories, Inc.

Manufactured by

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**STOVER
Mfg. & Engine Co.**
FREEPORT, ILL.

Build the Fireplace Right

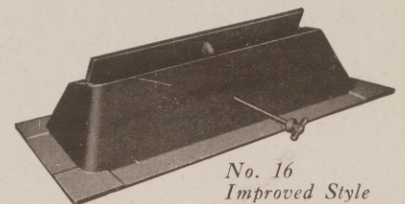
Don't try to reduce the cost by leaving out a good damper. It results in an expensive fireplace to operate and allows rain, wind, birds, and other objectionable things to enter the room when the fireplace is not in use.

Stover Dampers support the brick work, form a smooth throat, regulate the draft perfectly, and reduce the labor cost of erecting fireplaces.

The price is low enough so a Stover Damper can be used in every fireplace. Made in several styles for all size openings. The Improved style shown above is one of the most popular.

Send for catalog No. 1740 showing our fireplace fixtures and giving information as to the best fireplace construction.

We also make windmills, feedmills, gasoline engines, hinges, pulleys, saw vises, latches, sink brackets and other hardware.



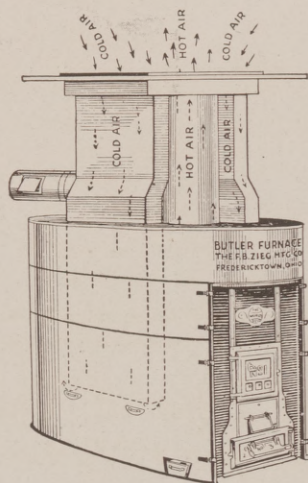
No. 16
Improved Style
Made in 7 Sizes

Stover Mfg. & Engine Co., 722 East St., Freeport, Ill.
Send us Catalog No. 1740.

Name Business
City State

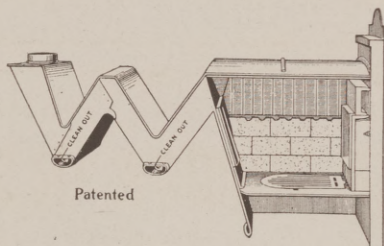
A Complete Line

Butler
Furnaces
Made in
3 Sizes
and
2 Types



Adapted for
Residences,
Apartments,
Storerooms,
School Houses
and
Public Halls

Completely Assembled When You Knock Off the Crate



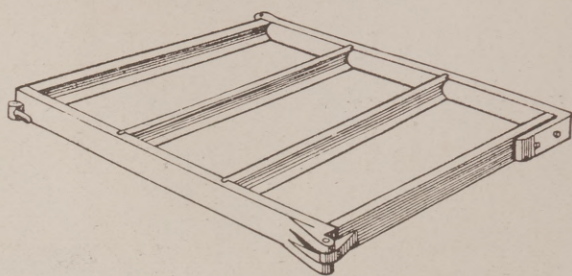
WHEN you knock the shipping crate from a Butler Furnace you find the heating unit completely assembled with everything in place and all joints tightly caulked.

You and your helper carry it into the basement—set it on the floor—place the wrought iron base around it and proceed with the assembly. This will be found most simple as the furnace will have been previously assembled at the factory and all parts will go readily into place.

Another important advantage of Butler construction particularly interesting at this time is the fact that all parts that might ever need replacing will pass readily thru the fire door. More attention is being given at this time than ever before to the efficiency of furnaces and many people are finding, to their sorrow, that new parts can't be put into their furnace without completely dismantling it.

To be able to point out this feature to prospects is just another of many advantages the Butler Agent has over competitors.

THE F. B. ZIEG MFG. CO.
Fredericktown, O.



This is what you've waited for— The TRIPLEX Silo Stave Mold

The demand for concrete silos built of strong, dense, waterproof, acidproof concrete staves was never so great as it is today.

To manufacture these staves and engage in the silo business, you don't have to buy any territory, you don't have to invest a cent in patent rights and you don't have to pay anybody a royalty on the staves you manufacture.

Here is a strong, automatic locking and squaring stave mold that handles a wet mixture and turns out good staves fast. You can buy it and use it anywhere and sell your staves any place you want to. You pay for the mold and that is the end of the matter.

Isn't that the only reasonable basis upon which to engage in the silo business?

Write today for circular giving full particulars about this mold and why a great many people consider the TRIPLEX mold absolutely the best basis for the silo business.

F. R. Ensminger, - Gilman, Iowa

on edge of Trade Mark "NO-SAG" every door

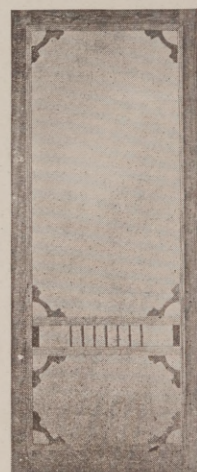
The Better Screen Door

is the Contractor's friend.

Made for front, rear and screen porch doors of houses and the strong, reliable screen doors used on offices and store buildings.

**THE DOOR THAT WILL
NOT SAG.**

A special arrangement is made for Architects and Contractors. Ask us how to buy NO-SAG direct.



Cadillac Lumber Co.
CADILLAC, MICH.



Terminal Station, Macon, Ga.

Alfred Fellheimer, Architect.

The entire contract for
KALAMEIN WORK

MADE BY

RELIANCE FIREPROOF DOOR CO.

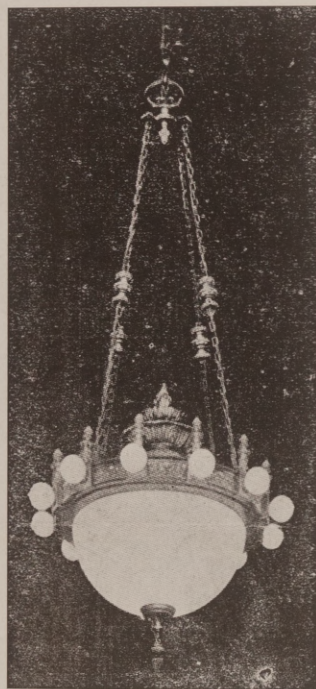
Metal Covered Doors, Windows, Trim, Etc.

Labelled Kalamein Doors a Specialty

West and Milton Sts., and
Greenpoint Ave.

BROOKLYN, N. Y.

Agents—Beaulieu & Applewhite, Atlanta, Ga.



Ornamental Lantern

Equitable
Trust
Building
New York

Made By

Bullock Mfg. Company

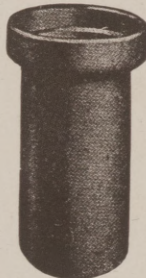
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"Sewer Pipe of Quality"

MADE OF OHIO RIVER FIRE CLAY



By test 43% stronger than competitors'
Send for special test circular.

Cannelton Sewer Pipe Co.

CANNELTON, IND.

Southern Distributor—Fischer Lime & Cement Co., Memphis, Tenn.

Western Distributor—St. Louis Clay Products Co., St. Louis, Mo.

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Counter Railing Grilles Wickets
Skylight Guards Elevator Enclosures
Fire Escapes Iron Stairways Balcony Railings
Brackets Builders' Iron Work

STANDARD IRON & WIRE WORKS

Chattanooga, Tenn.

Notice to Architects

For that cool, non fading Bluegray
side walk or stucco, ask your dealer
for

THE L. MARTIN COMPANY'S
EAGLE BRAND LAMPBLACK

Special Blacks for Pointing Brick and
Stone.

The L. Martin Co.,

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New York

Heating Apparatus

For Schools, Churches, Dwellings and other
buildings.

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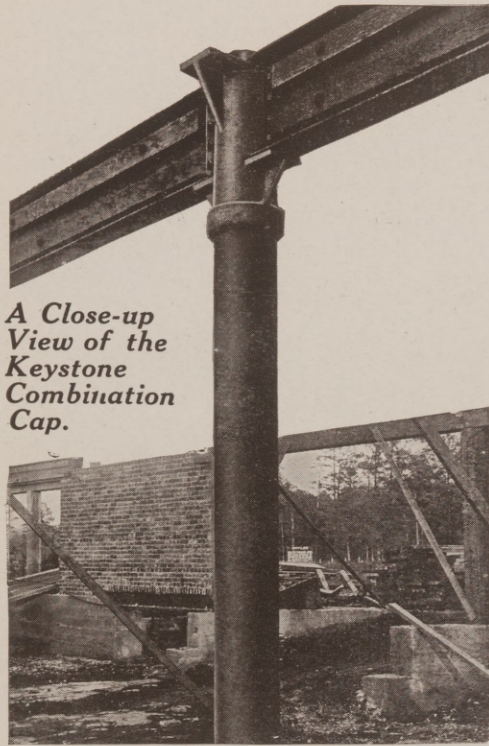
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A Close-up View of the Keystone Combination Cap.

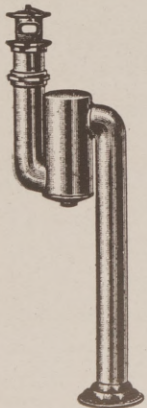
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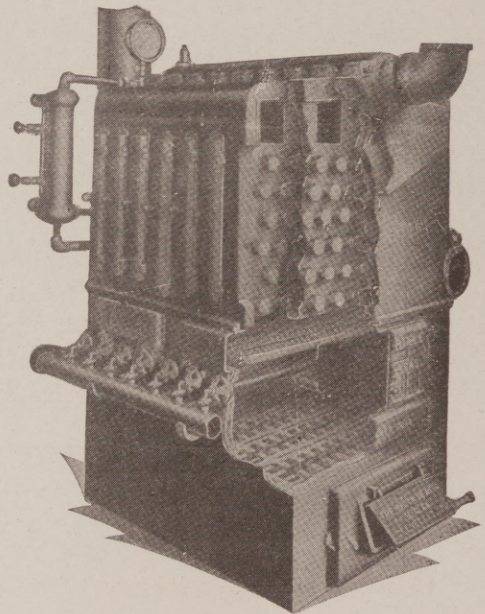
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IN FIVE MINUTES

Southern Architect and Building News

WITH WHICH IS CONSOLIDATED "SOUTHERN BUILDING RECORD"

VOL XLII. DALTON, and ATLANTA, GA., JANUARY, 1919. No. 3

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
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TABLE OF CONTENTS.

Editorial	11-17-23
Veneer and Panel Grading Rules	31
Architect in Industrial Building	35
Good Roads and Construction	43
Foreign Trade Opportunities	44
How to Own Your Own Town	45
Fuel Saving Heating Systems	46
Need Surveying Parties	49
Personal Mention	50
Housing Problems Discussed	50
Building News Items	52

New Series W. S. S. Coming.

The following statement has been made by the
Secretary of the Treasury at Washington:

"The secretary of the treasury has determined
upon the issuance of a new series of War Savings
Certificates and Stamps, to be placed on sale early
in 1919, and to be known as the Series of 1919. The
new series will have a maturity date of January 1,
1924, and in practically all respects will be issued

on the same terms and in the same manner as the
present series of 1918.

"A new \$5.00 War Savings Stamp, blue in color,
bearing the head of Benjamin Franklin, the apostle
of saving, and a former postmaster-general, is in
preparation. The new stamps will be placed on sale
early in 1919."

The New Year's Greeting to You.

May the coming year be full to the brim of hap-
piness and prosperity to you and yours.

We have much to be thankful for and grateful.
First, that affairs in war-torn Europe are soon to be
adjusted, the Allies already having been victorious
on the field of battle, hostilities have ceased when
comes the period of rebuilding in which this country
is to take the lead and furnish such material as will
be needed both in this country and abroad.

Our responsibilities are many and heavy, but no
real red-blooded American ever shirked his duty or
betrayed his trust.

So when 1919 emerges from his kidhood and
waxes lusty and strenuous, we, too, must partake of
his virtues and "do our durndest."

Thank the good God that you are an American—
and then resolve to plug for all that is in you every
day of the new year. The staff of The Southern Ar-
chitect & Building News wishes all its friends, to
share in this abundant prosperity which we confi-
dently look to attain its zenith before the close of
1919.

Ban Is Entirely Removed.

The removal of all remaining restrictions on non-
war construction work, as announced by Chairman
Baruch of the war industries board, now non-exist-
ent, will cause unprecedented building activity
thoroughout the South. Projects involving many
millions of dollars have been held up for the dura-
tion of the war.

The action of the war industries board comes at
a critical moment in the return of the nation's in-
dustries to a peace footing and will provide places
for thousands of men who are being released from
munitions plants and other war work.

The fear that there would not be enough jobs to
go round, particularly when the soldiers return home,
was unfounded. There will be employment for all
with equitable pay. Private concerns and individu-
als have given loyal support to the government in
eliminating as far as possible nonessentials in order

that the nation's energies might be concentrated in winning the war. The losses have been considerable and the delays caused in many cases have been vexatious, but they were borne with commendable patriotism. It was realized that selfish interests should not be allowed to interfere with the mighty task to which America addressed herself in declaring war on Germany.

Public improvements have been sadly neglected in all cities of the country. Work of this kind should now be resumed and carried to completion.

Build Now and Create Prosperity.

Building—construction work—has, almost overnight, leaped from a non-essential classification to the greatest of all activities. In the initial order of the War Industries Board lifting the ban on prohibited businesses and industries, construction work was first on the list of releases, and within a week all restrictions on private or public construction were removed.

This really was not surprising. Every student of the problems of reconstruction has predicted in his calculations that building would be the supreme activity of early peace times, thinks Noble F. Hoggson, the New York builder.

Every indication points to these predictions coming true. There is serious economic need for new buildings, mainly because the building industry has been depressed for years. There is an acute paucity of almost every kind of structure, ranging from small houses for workmen, increased peace-time factory and plant extensions, to banks, large hotels and office buildings. Soon there will be an unprecedented rush of building. Architects will be given commissions that will flood their offices—so long parched and dry—and orders for plans will be numbered in the order of their receipt and taken care of in their respective turns. The manufacturers of building material will be utterly unable to fill the avalanche of orders, not alone for the construction work to be done in this country, but for the rebuilding of France and Belgium. Almost every ship that sails for Europe will carry a full cargo of building material, supplies and equipment.

It is idle to talk of awaiting the report of this commission or that commission to proceed with the work of reconstruction. Only the indolent-minded individual is content to sit back and wait for some body of men to do his thinking for him. The problem of reconstruction is an individual problem.

The man who has been intending to erect a new building or alter or remodel an existing structure, or who has deferred his work either because of the ban on construction or for certain other reasons, has exceptional opportunity for doing something definite in the matter now.

Many of the best authorities argue that the prices of building materials are not likely to make any de-

cided change in the near future—perhaps not for some years. On the other hand, it is possible, considering the high rentals prevailing, that a building erected now at present prices of material and labor will produce a greater return to the owner than a building erected two years hence.

From many points of view, economic as well as social, it seems propitious to have plans for building made now, so that every individual will at this time put into actual practice a bit of work that is going to be a step towards the great work to be done. Such action will help to stabilize industry in this period immediately preceding and which will follow the formal declaration of peace.

Let us build—let us create—let us stage the great drama of the city streets on every corner where a new building should rise on a vacant lot. Let us begin now our plans for reconstruction; our plans to provide employment for the returning warrior and for the loyal warriors who remained behind and helped make possible the great success of his brother in arms across the seas, further comments Mr. Hoggson.

Saving of Office Stationery.

Chairman B. M. Baruch of the War Industries Board has had drawn up the following seven suggestions to business men for the saving of office stationery:

1. Write single space, except between paragraphs.
2. Write on both sides in case of long letters.
3. Use half or two-thirds sheets for short letters. Where possible, eliminate excessive advertising and long lists of officers and directors from letterheads, especially where changes are likely to occur.
4. Use 16-pound paper and the smallest sized envelopes required by the inclosure.
5. Use the back of letters being answered for the purpose of making carbons.
6. Use post cards for acknowledgments.
7. Watch your wastebaskets and use the spoiled sheets and backs of envelopes for scratch pads.

These suggestions are along the lines of those recently adopted by Government offices in Washington, and their general adoption, it is believed, would result in the saving of a large tonnage of high-grade paper and aid the Government in securing its requirements of paper and pulp for war purposes.

INTERNATIONAL STEEL & IRON CO., Evansville, Ind**S
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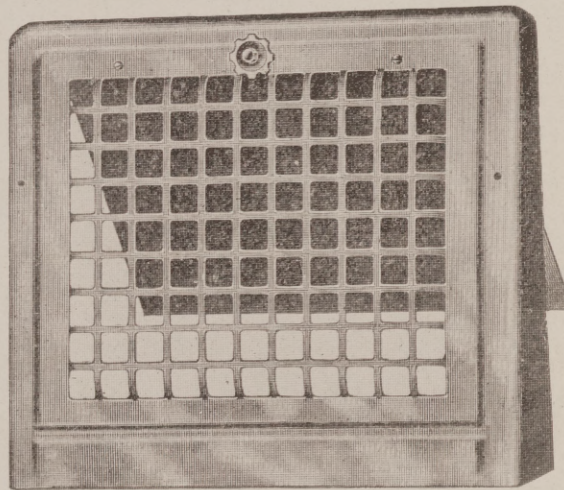
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Without an adequate supply of running water—under pressure—a home cannot be strictly modern. It is the one essential needed in every home, and everyone who does not have access to city water mains may have this convenience for their homes by the installation of a

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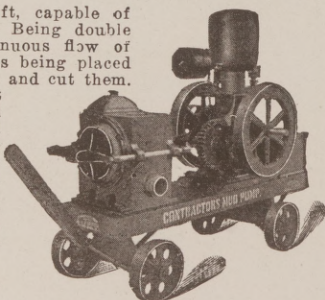
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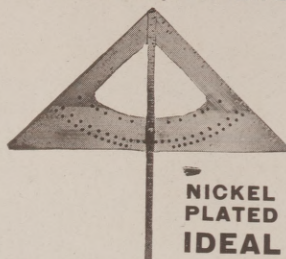
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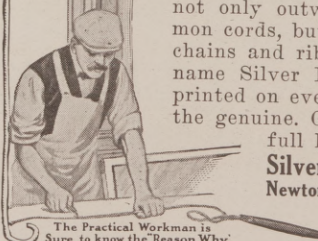
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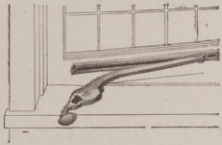
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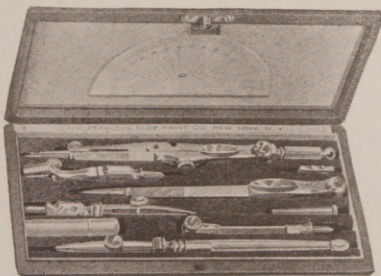
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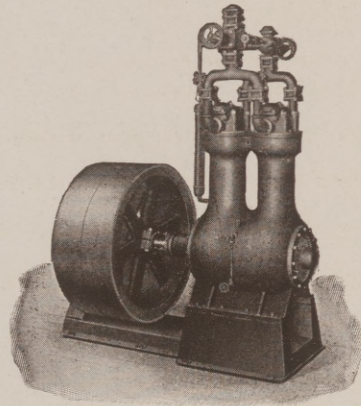
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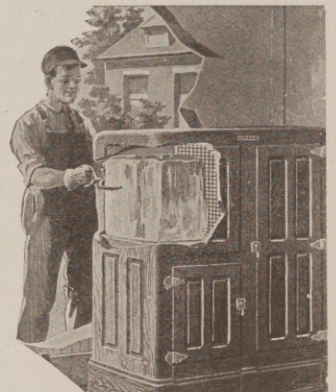
is winning praise everywhere. Hundreds of builders, con-
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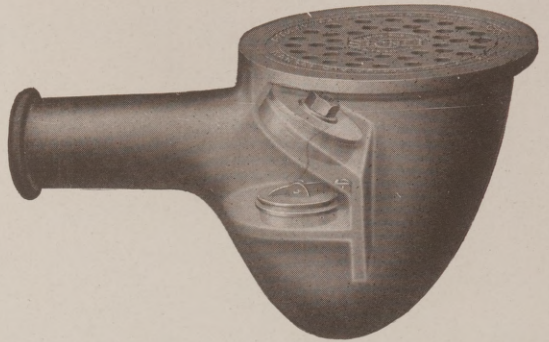


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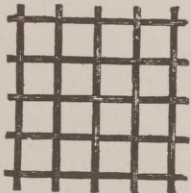
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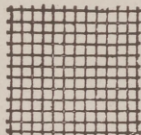
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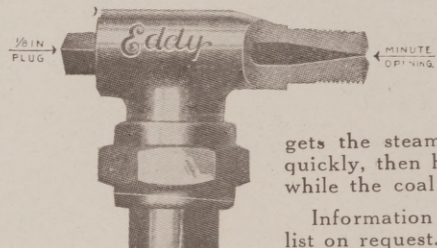


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The
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gets the steam into action
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"NU-JAMB" HINGES

These hinges are applied DIRECTLY
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NO HANGING STRIP REQUIRED
or if hanging strip has been installed,
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**Strongly Constructed. Ample Spring
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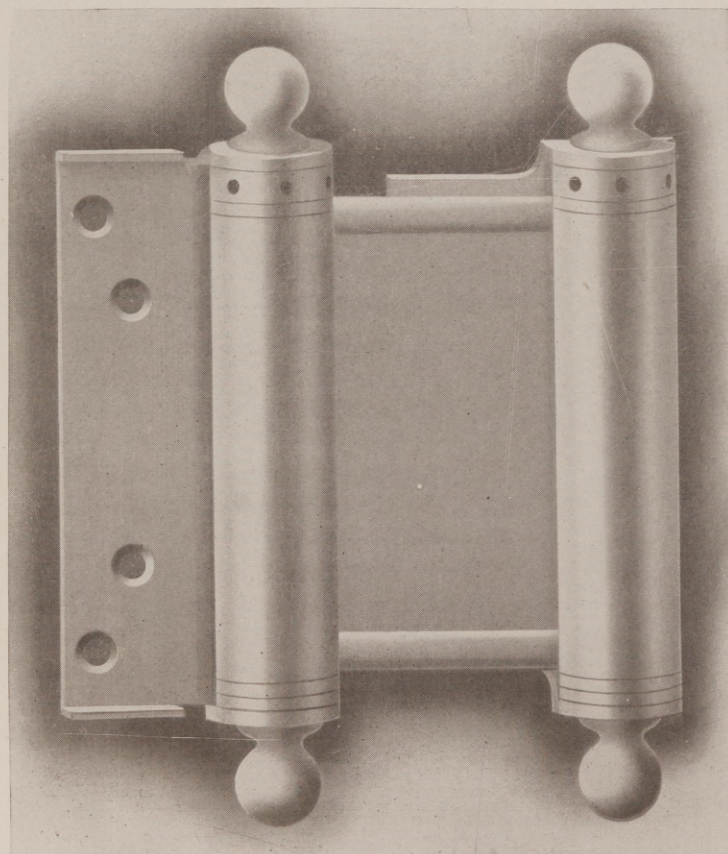
**A Hinge Applied Direct to the Jamb
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Made of wrought metal—steel,
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Catalog sent on request.

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Americanization Spells Efficiency.

The process of developing the vast foreign-born population of this country into 100 per cent Americans is a move in the interest of efficiency. Formerly left to the "welfare worker" as part of an altruistic movement for the benefit of the weak and oppressed, Americanization is now considered seriously by industrial leaders as an aid in promoting efficiency. It is handled as an engineering problem ("Man-Power Engineering" it is termed), and has reached the stage where results can be shown and figures given to back them.

The November issue of the *Efficiency Journal*, New York, is devoted to this topic, and contains articles on Americanization as applied to industry by authorities on that subject. Frank Trumbull, chairman of the board of directors of the Chesapeake and Ohio Railroad, John E. Otterson, first vice-president and general manager of the Winchester Repeating Arms Co., and J. A. Beatty, educational director of the American Rolling Mill Co., contribute valuable papers that give working plans for plant Americanization.

As the teaching of English to the foreigner is the first step toward his complete assimilation with America, this subject is handled by Sarah Elkus, supervisor of continuation classes, New York City Board of Education, who is conducting classes in more than thirty factories, teaching English to adults.

Other articles bearing on Industrial Americanization are contributed by Commissioner P. P. Claxton, United States Bureau of Education, Frances A. Keller, assistant to chairman, National Americanization Committee, and other experts in educational and industrial fields. A copy of this publication can be had gratis by any executive who applies for it on his business letter head, addressing the National Americanization Committee, Engineering Societies Building, New York City.

Florida an Important Cypress State.

There was held in Jacksonville, Florida, during November an important meeting of the Southern Cypress Association which was the occasion of the Times-Union of that city to comment at length upon the importance of Florida as a cypress state and to commend cypress as a building material. The Times-Union says among other things:

Florida is now being looked to to produce the major portion of the cypress of the country in the future, as the other states are being pretty well cleaned up of marketable cypress, "the wood eternal," as it has been so well named by the association. During the meeting here this feature was discussed at some length and a number of members who were present from Louisiana and other sections expressed the hope that they would soon be operating in Florida.

It has been known for many years that Florida had immense tracts of splendid cypress but the major portion of this beautiful timber has been inaccessible, as it is located in the fastnesses of the Everglades or on the borders of the great muck stretches that form the Everglades. To render it possible and practicable to market this timber, railroads must be built into the forests and this is gradually being accomplished.

The spur recently constructed by the Atlantic Coast Line from the Moore Haven branch to the Caloosahatchee river, is leading in the direction of Big Cypress on the north and the Tamiami railroad and trail, which are being constructed from Miami to Marco, will tap it on the south and when these projects are completed the way will be opened to establish some big cypress mills in a section that has resounded only to the axe of the Seminole Indian or an occasional hunter or prospector.

With the growing scarcity of wood of all descriptions and especially of the better grades of building material, the pine and cypress forests of Florida will comprise a valuable asset that adds another to the many attractions that are offered to investors in this rapidly developing section.

From information that could be gathered at the meeting of the cypress manufacturers and at the local office of the association, it is believed that a number of the big mills that are now being operated in other sections will gradually be removed to Florida and among these will be manufacturers of special lines, such as silos, tanks and other specialties that require the best grades of cypress. These specialties are now coming into greater demand in the South, with the development of the live stock industry and general farming and it is readily recognized that they can be manufactured to much greater advantage near the source of supply, than if the raw material had to be shipped some distance to the factory and then back to the point of origin.

Florida should encourage the development of the cypress industry as it will add greatly to its resources and at the same time will facilitate the general development of the state, as it will supply one of the best of the building materials in sufficient quantities to enable everybody to use it without limitation. The members present at the meeting were all greatly encouraged over the lifting of the embargo on shipping lumber and the revoking of practically all of the building restrictions that were imposed during the course of the war. They feel confident that the South is in for a building boom of substantial proportions and that Florida will be one of the leaders in this movement.

Building Operations on Big Scale.

Building operations of a magnitude unparalleled in the history of the world are promised as a result

ENAMELED IRON SIGNS. ENAMELING ON CAST IRON OR STEEL OF ALL DESCRIPTIONS ACID-PROOF ENAMELING

Fittings, Plumbing Specialties, Guide Rings, Signs and Name Plates, Enameled.
Enameled Dials for Clocks, Meters, Indicators, Guages, Thermometers, Etc.

MANHATTAN DIAL MFG. CO.

38-42 Lexington Ave. BROOKLYN, N. Y.

of the return of peace, J. E. Rhodes, secretary-manager of the Southern Pine Association, said on his return from Chicago, where he attended conferences of the National Lumber Manufacturers' Association on post-war trade.

"Much consideration was given at these conferences," said Mr. Rhodes, "toward the best means of handling the immense export demand for lumber. The amount which can be shipped will be limited only by the boats available."

Mr. Rhodes said active domestic demand will develop immediately. "Retail yards hold off buying, pending annulment of building and transportation restrictions," said Mr. Rhodes. "Now that these restrictions have been removed, there is nothing ahead of the lumber business except unprecedented prosperity."

Civil Engineers Nominate.

The nominating committee of the American Society of Civil Engineers has presented its report to the board of directors, naming the following candidates for offices to be filled at the annual election, January 15, 1919: For president, Fayette Samuel Curtis, Boston; for vice-presidents, to serve two years, Herbert Samuel Crocker, Denver, and Leonard Metcalf, Boston; for treasurer, to serve one year, Arthur Smith Tuttle, New York City; for directors, to serve three years, George Hallett Clark, New York City; Jacob Stinman Langthorn, New York City; Charles Clement Elwell, New Haven, Conn.; Willard Beahan, Cleveland; John Watson Alvord, Chicago; and Carl Ewald Grunsky.

"I Have Nothing to Sell."

"My product is 'way over-sold. I cannot get enough materials. I have difficulty getting freight cars. Labor shortage and various other things have orders. Every new order is an embarrassment. I have nothing to sell."

"Possibly so," we answer, "but you have still to sell and to keep sold that part of your assets which outweigh in value your entire plant, equipment and material—your name and your good will. Your name and your brand should be kept sold to the consumer—so that he will keep on wanting your goods until the day when he can get them."

Oldest Building in Wisconsin.

An instance of the "stick-to-it-iveness" of wood is disclosed at Green Bay, Wisc., in what has long been known as the "Porlier-Tank" Cottage, one of the principal places of interest in Union Park. It was erected 125 years ago, and it is declared to be the oldest building in Wisconsin.

This cottage, low, irregular, and bearing on its face the record of its existence since that day when Joseph Roy built it on the bank of the Fox River near where the stream widens out in its conjunction with Green bay, today presents a remarkable state of preservation. A recent investigation developed that the greater part of the wood is in almost its original condition. This despite the fact that cottage has weathered all sorts of storms and has in the last fifteen or twenty years been subjected to rather rough treatment, particularly on the occasion of removal from its original site to the present location in Union Park.

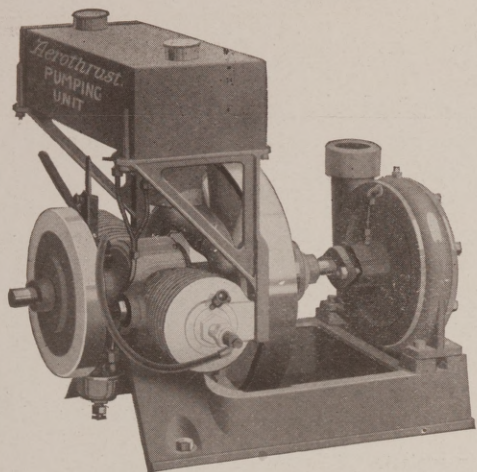
For many years it was believed that the "Porlier-Tank" Cottage was built of logs. The investigation, however, developed that it was constructed of roughly-sawed timbers and boarding, the boards being very wide and of a remarkably good quality. The spaces between the upright timbers and the inner and outer walls were filled with brush, and "pugged with clay," mud plaster being commonly used to chink log cabins in early times.

There is still wide speculation as to how the material used was turned out. Some investigators incline to the belief that it was whip-sawed, as was later done in the building of old Fort Howard. Others, including historians on the subject, believe that he lumber was sawed in a mill put up by Jacob Franks, about 1790, on Devil river, three miles east of De Pere.

The house has had a remarkable history, its builder, Roy, having been a typical voyageur of the period in which he lived. The second owner, Judge Jacques Porlier, was probably the more famous occupant. Directly across the river from the house, in the home of Joseph Pourdian, a habitant often mentioned in early annals, Porlier, who was a justice of the peace, performed the wedding ceremony which united the daughter of Jourdian to the Rev. Eleazer Williams, long known in America as the "Lost Dauphin" of France.

Aerothrust

NEWEST PUMPING UNIT



PROOF OF EFFICIENCY

The U. S. Government adopted Aerothrust after a rigid examination by board of experts. Thompson-Sterrett Cons. Co., building new Field Museum in Chicago, use three Aerothrust Units. O. W. Rosenthal Co. of Chicago are using six in construction of new million dollar freight depot. Write for circular.

Twice the value of any other pumping unit of same rating--more economical because it runs on gasolene or kerosene--that is the Aerothrust Engine story.

A totally different engine is the Aerothrust—simpler, non-vibratory, lighter, air-cooled, more efficient. No cams, valves or gears to get out of order.

Weight only 150 lbs.—easily portable. Adapted to irrigation, drainage, sewerage, excavation, contracting or water lifting in any form.

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The Aerothrust Engine has revolutionized engine construction in many fields. Reduces labor costs. Used by contractors. Take a minute's time and write for circular.

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500 Madison Street

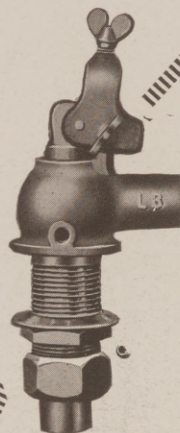
LA PORTE, INDIANA

National Mosaic Tile Co.

MOBILE, ALABAMA.

Manufacturers of Adamantile, a high grade Spanish Cement floor tile, has been used in Europe for centuries, introduced in America by us about ten years ago.

Write us for booklet of information regarding this product.



Master Plumbers

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Ball Cock

because of its simplicity and lasting qualities.

Does more work and does it better than any other ball cock made.

Easy to assemble or take apart. One Screw Releases all Parts.

All moving parts wear equally and work smoothly.

Made of Steam Bronze.

Cannot stick, bind, or get out of order.

The L. B. Ball Cock fits any tank—high or low—and works well under high or low pressure. What you have been looking for on your repair work.

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The Mark of Quality **REGISTERED ECONOMY** Protects the User **Economize** with



Six Drawer Sections, 26"x38"x2"; 32"x44"x2". Base with 4" deep drawer.

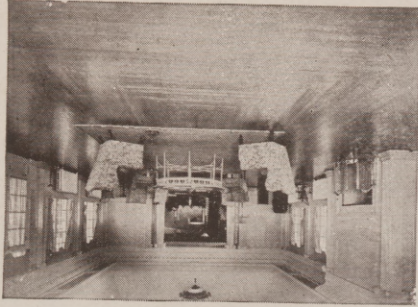
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The owner demands Oak Flooring for the reason that it increases the selling and renting values besides attracting a better class of tenants or buyers.

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Oak Flooring is made in 13/16" and 3/8" thicknesses in various grades.

3/8" thickness of Oak Flooring is used very extensively over old pine floors at a very low cost.

When you specify Oak Flooring for any building, you can rest assured that you have done a distinct service that will always reflect to your credit.

Our government used millions of feet of Oak Flooring at various housing projects. See on page 319, 1918 Sweet's Catalog.

Write for folders that tell all that is worth knowing about Oak Flooring.

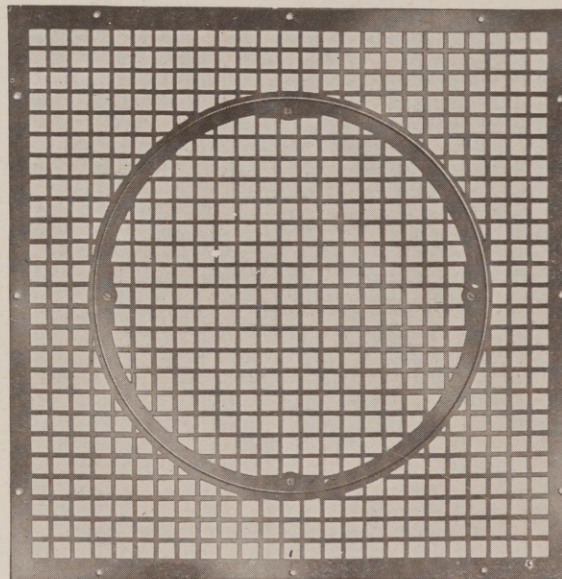
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Plain Lattice Design

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are made substantially, with round center for warm air supply and square cold air intake.



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The Best Permanent Substitute for Tracing Cloth.

1—Very transparent. 2—Exceptionally strong.
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In rolls of full 20 yards; 30, 36 and 42 in. wide.

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The Automatic Coal Chute

Will Answer Every Requirement.

OPENS AUTOMATICALLY

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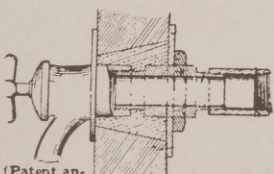
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is a practical device for
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ments. Easily attached.
Holds bibb in place by nut
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Leak-proof. Saves time and
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"PRUDENTIAL" PORTABLE STEEL BLDGS.

FOR ALL PURPOSES—FIREPROOF

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State Kind of Building and Size Wanted.

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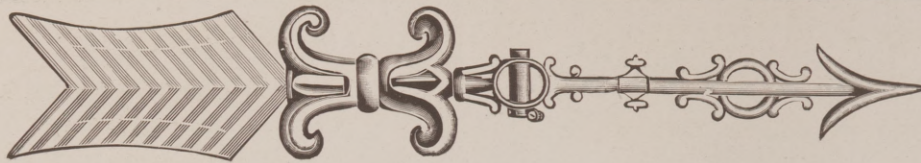
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Send Plans or List for Estimates.

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SECURITY LIGHTNING RODS can be installed as the building is erected.

They not only secure the permanency of your work but provide you with a handsome additional profit. Practically no extra time required for installation as building is being put up.

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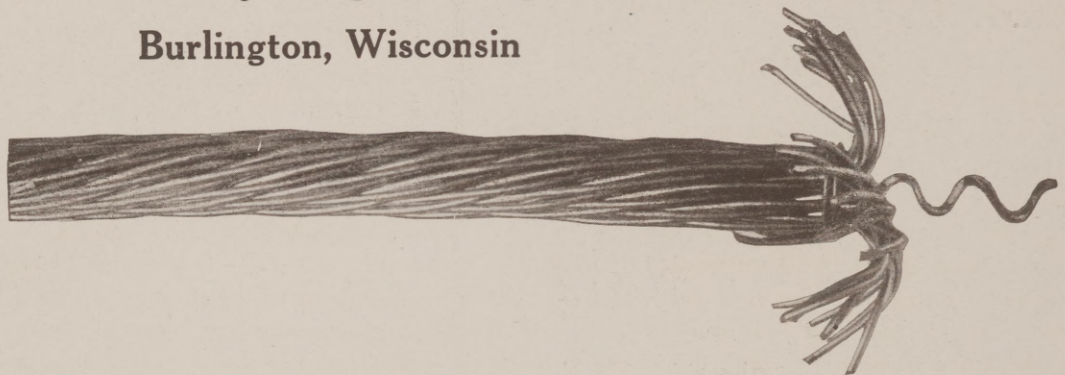
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and Platina Points as recommended by the U. S. Government in the latest system of electrical construction with non-insulation systems. Specialty of constructing Safe Lightning Conductors, on Power Chimneys, Churches, Hospitals and Buildings of all Descriptions. Write for estimates and descriptive matter on our Improved System of Lightning Protection for Chimneys.

Others Discuss Some Timely Topics

Prices on Water Works Materials.

MANY cities requiring water purification plants, have waited and continue to wait, expecting lower prices, said R. E. McDonnell of Kansas City in an address at the annual convention of the South West Water Works Association at Tulsa, Okla., recently. They have continued to use polluted supplies, thereby endangering the health of their citizens, all because of a mistaken idea that prices would be lower. Fire protection equipment, both in pumps, larger mains and fire apparatus, has been postponed, awaiting lower prices after the war, until now we have inadequate fire protection in many cities.

This condition, already alarming, is made doubly worse by the frequency of incendiary fires throughout the country. The holding off of these improvements until after the war would increase the normal demand to the point of producing an increase in prices following the war.

Held Down by Government Control.

Cast iron pipe, the largest item of cost in water works construction, is held down in price now only by the Governmental control of the pig iron price, and with foundries already petitioning the Government to permit an increase, one can readily see that with the Government control removed, the price would immediately go upward. The same is true of the copper market control. The demand for copper was never greater in the history of the world and when the Government regulation of price is removed, copper will immediately go upward to meet the demand. Cities, therefore, holding back lighting improvements or electrifying their pumping plants in anticipation of lower prices, are going to meet with disappointment. The war demand for water works material has been no greater than similar demands for all classes of commodities. The use of American materials in the war has served to demonstrate their adaptability, which, in itself, will create new markets.

One of the remarkable achievements of the war accomplished through American water works materials, was the capture of Palestine from the Turks. The capture of Palestine in the past was attempted many times in the last fourteen hundred years, and the British attributed the failures to the lack of water supply. With the use of American made pipe, pumps and valves and equipment, a ten-inch pipe line was laid one hundred and fifty miles across the desert, supplying drinking water for the troops, camels and munition trains. The pipe being carried in by use of camels, water was made available for use

as the pipe laying progressed.

Price Movements of the Past.

Facts taken from history give excellent precedents as to what we may expect in the future prices. In the period covered by the French Revolution, America was also engaged in war with England, so that at that period the whole civilized world was at war. While business was small then, yet prices went through the same performances they are repeating today. Prices after the war rose and remained at the maximum during the war for a period of about five years after the close of the war. In 1864, the increase was about fifty per cent above the normal of 1851. The decrease toward normal was only about twenty per cent, covering several years, with a sharp increase again at the Franco-Prussian War in 1871, and the prices did not return to normal until 1880, ten years after the close of the Franco-Prussian War.

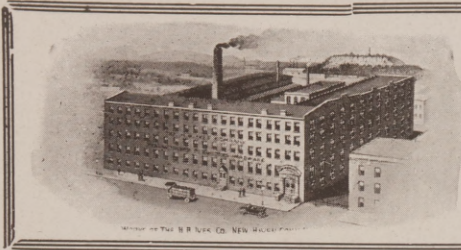
Prices in time will undoubtedly seek their normal level, but cities, like individuals, need water for their growth. Can we afford to stunt the growth of a community by waiting for lower prices? This question has been carefully studied by those best competent to know. Recently a report was made by the New York Board of Water Supply to the Mayor of New York, which states "That there are no convincing evidences that labor and materials will be less expensive now than for several years to come" and further makes the suggestion that "many well informed persons are of the opinion that the tendency will be higher and still higher prices for water works commodities." The report closes with the recommendation that the city's interests will be best served by the continuous and speedy prosecution of the water works improvements to their final completion.

Importance of Good Water Supply.

Water is fundamental to the growth and prosperity of every community. An abundant supply of good pure water is a city's most valuable asset. Its industries cannot be secured or maintained if the water supply is inadequate.

The Capital Issues Committee of Washington, in giving approval to water works bonds, has gone on record as to water supplies and their improvement, and all worthy projects are meeting prompt approval.

The essential feature in the whole problem to consider is the responsibility of the water works profession toward the health of the community. Nothing has such a great bearing upon the health of a community as the quality of the water. Can the



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Manufacturers of

BUILDERS' HARDWARE

HIGH GRADE WINDOW AND DOOR SPECIALTIES

Write for Illustrated Folder.

Water Boards, Mayors, Superintendents and Engineers afford to defer improvements when that postponement may mean an epidemic of typhoid or other water borne diseases? The loss of lives cannot be justified by the saving in dollars.

Improvements Urged in Export Lumber Trade.

Criticisms of the methods employed in the export lumber trade of the United States are contained in a report made public today by the Bureau of Foreign and Domestic Commerce, Department of Commerce.

"Probably the worst complaints made against American lumber," says the report, "have been in regard to qualities and have been due largely to hurried or otherwise inefficient grading or to the lack of adequate grading rules recognized by both parties to the contract."

Comparatively few mills in this country have specialized in cutting for export trade or have endeavored to market their product abroad themselves. Lack of knowledge of conditions in foreign countries has made direct selling too difficult and expensive for firms that were selling lumber for consumption in foreign countries mainly to get rid of their surplus stock.

When the war is over the subject of export trade will be a much livelier one to the lumber industry than it ever has been before, and the constructive criticisms in the Government's report are aimed solely to assist in the necessary preparation

for meeting conditions as they will exist when the demand for reconstruction materials makes itself felt. Some of the future competition will come from countries that has specialized in foreign trade for many years.

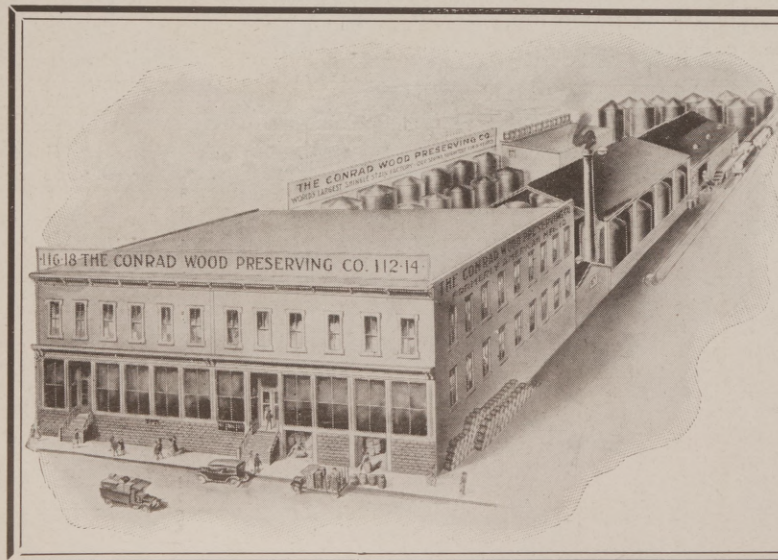
The report describes in detail the present rather haphazard system of exporting lumber, points out its shortcomings, and makes practical suggestions as to methods of developing the trade. Edward Ewing Pratt, formerly Chief of the Bureau of Foreign and Domestic Commerce, is the author of the bulletin, which is entitled "The Export Lumber Trade of the United States," Miscellaneous Series No. 67.

Charged With Unfair Practices.

Declaring it has reason to believe the J. H. Patterson Company, lumber and building material firm of Marengo, Ill., has unfairly sought to obtain information as to the businesses of mail order lumber houses, the Federal Trade Commission has issued formal complaint against the concern.

The complaint alleges that the Patterson Company, "systematically and on a large scale," and "concealing the fact that they are engaged in the scale of lumber" writes letters to mail order concerns asking for estimates, prices and other information concerning their lumber and building materials, whereas the Patterson Company has "no intention of buying any lumber or building materials from such mail order houses."

The concern was cited to appear before the Commission in Washington, November 26th.



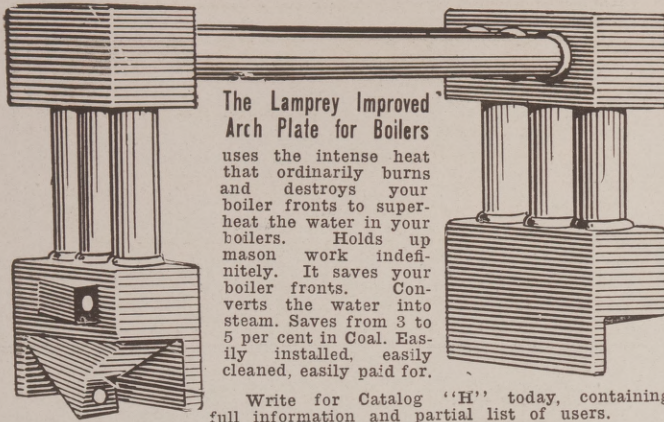
Conrad's Creosote Stains don't wash off or fade

Our Greens are superior to any in the market and our Bungalow Brown has no equal for staining smooth sidings as well as rough boards and shingles. Write for samples and prices to the world's largest Shingle Stain Plant.

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uses the intense heat that ordinarily burns and destroys your boiler fronts to super-heat the water in your boilers. Holds up mason work indefinitely. It saves your boiler fronts. Converts the water into steam. Saves from 3 to 5 per cent in Coal. Easily installed, easily cleaned, easily paid for.

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MILLS: GLOBE, NEW MEXICO.

Concrete Reinforcing Bars

AT LOW PRICES

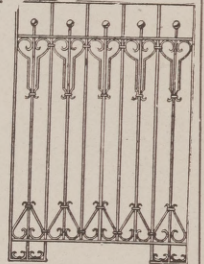
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Water Pipe—Gas Pipe

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Write Nearest Office for Prices.

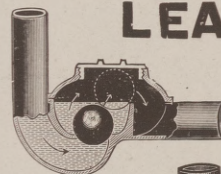
HAMMOND-BYRD IRON CO., Birmingham, Ala.

HAMMOND-BYRD IRON CO., Peoples Gas Building, Chicago

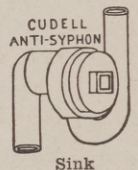
HAMMOND-BYRD IRON CO., Commerce Trust Building, Kansas City, Mo.

BLAIR AND COMPANY, Bankers Investment Building, San Francisco, Cal.

LEAD TRAPS



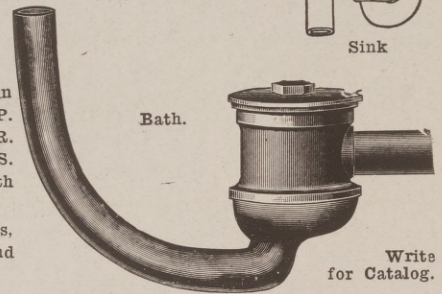
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Patent in
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For Wash Bowls,
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Wash Tubs.

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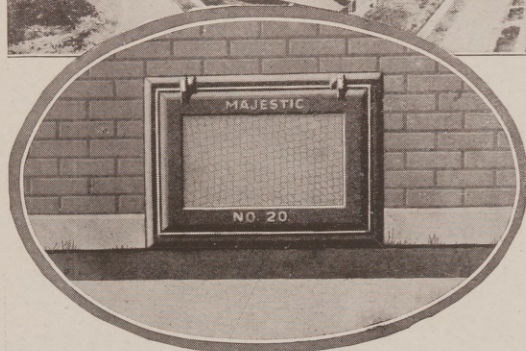
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These Homes Protected By *Majestic Coal Chutes*

A Town of Workmen's Homes—erected by The Morgan Park Co., of Duluth.

In a very short time, **every Majestic Coal Chute**—in every building pictured above—will have paid for itself in actual protection of property from damage and in the saving of repair bills.

More than that—from the minute the Majestic Coal Chute is installed—it increases the value of the property.

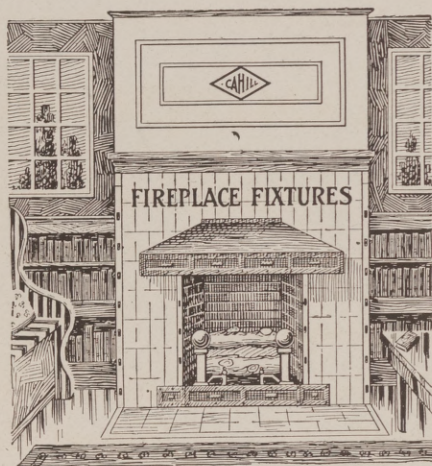
A Majestic Coal Chute in the building you are planning would protect the ground, shrubs, lawn, sidewalks and particularly the sides of the building from coal smudge and damage by the careless coal man. It would improve the looks and add to the value of the property.

A large glass window gives ample light to the basement—when closed it is absolutely burglar-proof.

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The Wood Mosaic Kind

For every home—Old or new. Can be installed by our mechanics. Our 5-16" flooring can be laid in old or new houses. We make all kinds and thicknesses; Wood-Carpet, strips, Plain and Ornamental Parquetry, Tongue and Groove Flooring.

Send accurate measurements of rooms for colored sketch with exact estimate of cost of the flooring required. Instructions for laying and finishing accompany all orders shipped.

Send for free catalog in natural wood colors.

Wood-Mosaic Company
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DESK TOPS

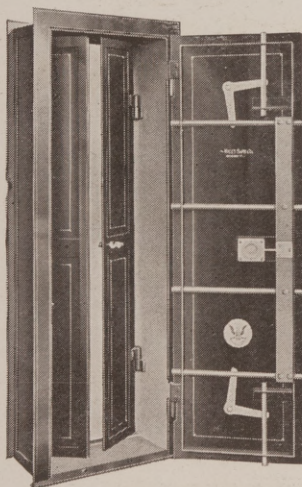
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Wall Opening

79 High

32 Wide

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SALESROOM: NEW YORK, N. Y., The Walker Safe Co., Inc., 388 Broadway.

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Fire Proof Safes—Burglar Proof Safes—Manganese
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This company maintains a department for co-operating with architects or clients in solving problems encountered in selecting and installing safes.

Prices and estimates will be promptly furnished on application.

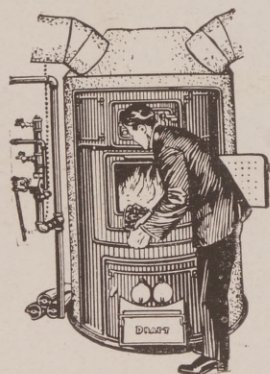
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For installations of any size or character.
It is the best today as it has been for over
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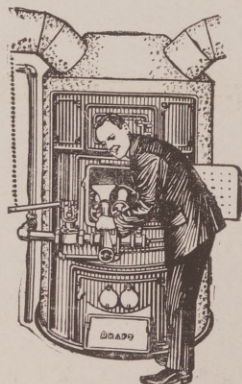
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profits today—
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Every House Owner
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The Other Fellow is
Selling the **FRANK-
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PROFIT**.

It is easy to sell a **FRANK-
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convert an old furnace
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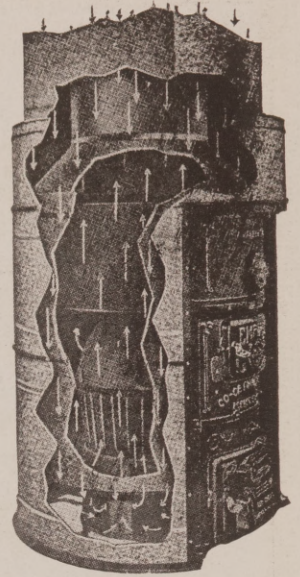
Requires no floor space.
Easy for you to install.

COMBINATION—changes
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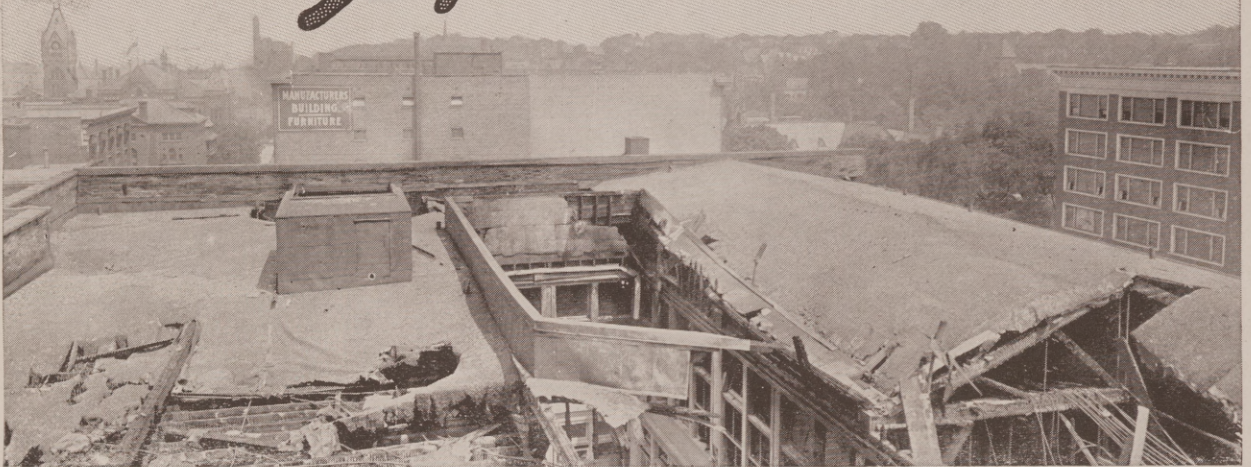
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Ashton Building, Grand Rapids, Mich., Gen'l Contr's: Campbell & McNabb, Grand Rapids, Mich. Roofers: F. J. Sokup & Co., Grand Rapids, Mich.

Photo above shows the roof of the Ashton Building in Grand Rapids after a recent fire.

The building carried a Barrett Specification type of roof which served as an air-proof fire-blanket—and served well!

A report of the fire states that the firemen played two heavy streams on this roof for two hours while the fierce fire raged in the upper stories.

Yet the roof did not burn and only succumbed *where the destruction of the roof boards and beams brought about a complete collapse of the support.*

In fire that twisted steel and melted copper, the roofing only smoked, soft-

ened and cooked; but it did not blaze or furnish fuel to the flames!

Notice how strips of it hung on the rafters where flames could attack it edge-wise, and yet it was not consumed!

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We now guarantee Barrett Specification Roofs to last for twenty years without cost for maintenance. The Guaranty is a Surety Bond issued by one of the largest surety companies in America, the United States Fidelity and Guaranty Company of Baltimore. It is offered on all roofs of fifty squares and over in all cities in the United States and Canada of 25,000 population and more, and in smaller places also where our Inspection Service is available.

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Veneer and Panel Grading Rules

GENERAL RULES.—1.—All stock shall be of uniform and standard machine-gage thickness. 2.—Stock of all grades must be cut solid, dried so that it will not mold or damage in transit, and sufficiently flat to straighten under the press without splitting. 3.—All log-run and sheet stock of random widths shall be measured by taping, and all dimension stock in log run, faces, backs, crossbanding or centers shall be computed on the basis of the sizes given, without allowance for trimming. 4.—Surface dimensions shall always be given: First, the width across the grain; second, the length with the grain. 5.—All specifications for special stock not covered by these rules shall be a matter of special contract between buyer and seller.

Quartered-oak Veneer, Sawed and Sliced.

Measurement—Tape measure shall be the standard measurement in all thicknesses, and the width shall be taped midway of the flitch.

In computing the feet in a flitch the actual length of the flitch shall be used. Multiply the width in feet and inches, as shown by the tape by the length of the flitch, to obtain the number of square feet the flitch contains.

In determining the width of a bevel flitch, the average width of the sheets shall be the width of the flitch.

In computing defects, the flitch shall be taken as a unit. The percentage of defects allowed in each grade as herein stated is figured on the total square feet contained in a flitch.

Cutting—The term "cutting," as used in these rules, means a "piece of veneer" free from defects.

Figure—All flitches must show 90 per cent of figure in the aggregate.

Grades—There shall be two grades of veneer, standard and medium.

Standard Grade—All flitches in which defects do not exceed 10 percent of the total feet in the flitch shall be measured full.

Flitches containing defects not to exceed 20 per cent of the total feet in the flitch may be cut in measurement 10 per cent of the total feet in the flitch to raise the veneer to this grade.

In estimating defects, no cutting to be considered less than 6-in. wide by 24-in. long.

Bright sap shall not be considered a defect. Widths shall be 6-in. to 12-in.

Lengths shall be 4-ft. and over, not over 5 per cent to be under 7-ft.

Medium Grade—Flitches shall cut two-thirds clear, no cutting to be less than 5-in. wide by 18-in. long.

Bright sap shall not be considered a defect.

Widths shall be 5-in. and not over 10-in.

Lengths shall be 4-ft. and over, not over 5 per cent to be under 7-ft.

Rotary-cut White and Red Oak, Grades.

Faces—Stock of any thickness; shall be free from defects, but shall admit of bright sap, showing character of grain figure. Splits are permitted that will close in laying.

Backs—Stock of any thickness; shall admit of sound defects, discolored sap, pinworm holes and splits open not to exceed $\frac{1}{8}$ -inch in width.

Log Run—Stock of any thickness; $\frac{1}{15}$ inch and thinner, to be 48-in. and up long; not less than 50 per cent 60-in. and up; 6-in. and up wide, not more than 25 per cent less than 12-in. wide; not less than 50 per cent face stock in the aggregate; $\frac{1}{12}$ -in. and thicker, to be 36-in. and over long, not less than 65 per cent 82-in. and over long; widths, 6-in. and up wide, not more than 25 per cent less than 12-in. wide, and not less than 50 per cent face in each sheet.

Select Sheet Stock—Stock $\frac{1}{12}$ -in. and thicker, to be 36-in. and over long, not less than 75 per cent 82-in. and longer; widths, 6-in. and up wide, 85 per cent to be 11-in. and wider, to be the full product of selected logs, each sheet to cut at least 75 per cent faces.

Rotary-cut Poplar, Grades.

Faces—Stock of any thickness; shall be free from defects, but shall admit of bright sap in any proportion. Splits are permitted that will close in laying.

Backs—Stock of any thickness; shall admit of sound defects, discolored sap, pinworm holes and splits open not to exceed $\frac{1}{8}$ -in. in width.

Cores or Centers—Stock $\frac{1}{15}$ -in. or thicker, to be free from open defects, but shall admit of pinworm holes, sound doty spots, discolorations and splits that will close in laying; splits not to extend more than 10 per cent of the length.

All stock not exceeding 40-in. in length shall contain the following proportions of full pieces:

Up to and including 36-in. wide. .60 % whole sheets

37 to 59-in., inclusive.....50 % whole sheets
 60 to 73-in., inclusive.....40 % whole sheets
 74 to 86-in., inclusive.....25 % whole sheets

Fractional sheets to consist of two or three pieces, and an allowance of $\frac{1}{2}$ -in. shall be included in each piece to permit of jointing.

Crossbanding.—Stock to be $\frac{1}{16}$ -in. or less in thickness; to be free from open defects, but shall admit of pinworm holes, sound doty spots, discolorations and splits that will close in laying splits not to extend more than 10 per cent of the length.

All stock not exceeding 40-in. in length shall contain the following proportions of full pieces:

Un to and including 36-in. wide..60 % whole sheets
 37 to 59-in., inclusive.....50 % whole sheets
 60 to 73-in., inclusive.....40 % whole sheets
 74 to 86-in., inclusive.....25 % whole sheets

Fractional sheets to consist of two or three pieces, and an allowance of $\frac{1}{2}$ -in. shall be included in each piece to permit of jointing.

Log-run.—Stock of any thickness; random lengths and widths, $\frac{1}{15}$ -in. and thinner, to run 48-in. and over long, not less than 50 per cent 60-in. and over long; widths 8-in. and over wide, not less than 50 per cent 18-in. and over wide.

Stock $\frac{1}{15}$ -in. and thicker, to run 36-in. and longer, not less than 50 per cent 60-in. and longer; widths 6-in. and over, not less than 50 per cent to be 16-in. and over.

Log-run stock to produce not less than 50 per cent cutting of face stock, remainder suitable for centers or backs.

Rotary-cut Ash, Basswood, Birch, Beech, Elm and Maple.

No. 1 Faces of Face Stock.—Stock of any thickness, free from knots, shall admit sap, splits that close, and slight discolorations.

Select Faces or Face Stock.—Stock of any thickness of the same grade as face stock, except that it shall be selected as to color.

No. 2 Faces or Face Stock.—Stock of any thickness shall admit sound knots, splits that close and log-run color.

Backs or Backing Stock.—Stock of any thickness shall admit sound knots, pinworm holes, discoloration, firm doty spots and open splits and checks, not to exceed $\frac{1}{15}$ -in. in width.

Drawer-bottom Stock.—Stock of any thickness shall admit sound knots, closed splits, pinworm holes and log-run color.

Center Stock.—Stock of any thickness shall admit sound knots, pinworm holes, discoloration, firm doty spots and open splits, and checks not to exceed $\frac{1}{16}$ -in. in width.

Flitch Stock.—Stock of any thickness, of random widths and lengths, 10-in. and wider, the sheets to

be kept in consecutive order as they are cut from the flitch. The stock is to be at least two-thirds No. 1 faces.

Log-run stock.—Stock of any thickness, random widths and lengths as the logs will make, 6 to 36-in. wide, 4 or 5-ft. to 8-ft. long, not less than 75 per cent to be 12-in. and wider, not over 50 per cent 84-in. and over long. At least 50 per cent of the number of feet in the stock shall consist of sheets, each of which shall cut at least three-fourths No. 1 face stock in cuttings 6x24-in. and larger. The balance of the stock shall be at least suitable for centers and backs.

Defects not admitted in centers and backs shall be included in log-run, but sealed out based on the width of the defect and length from farthest point in defect to nearest end of sheet.

Occasional straight splits running not over one-third the length of sheet are considered no defect.

Note.—These defects thus included and sealed out are left in to assist the buyer in cutting stock to best advantage.)

Veneer to be clipped in random widths and measurement taken by tape across the whole width of each sheet and the sheets crated as they run, without sorting, as to width.

Crossbanding.—Stock not thicker than $\frac{1}{15}$ -in., cut to dimension sizes, shall admit sound knots, splits that close, pinworm holes, firm doty spots and log-run color.

Dimension Stock.—All dimension sized stock, unless otherwise particularly specified, shall be machine-cut to exact lengths and may be a trifle full as to width.

Rotary-cut Gum.

There shall be four kinds of gum veneers, as follows: 1—Unselected red gum, to be any color. 2—Selected red gum, to be all red for color. 3—Selected figured red gum, all figured red for color. 4—Selected sap gum, to be all white for color.

Faces.—Stock of any thickness shall be free from all defects except slight splits that will close in laying.

Selected or figured face stock of any thickness to be the same grade as face stock, except it shall be selected as to color or figure.

Backs.—Stock of any thickness shall admit sound defects and pinworm holes and splits not open to exceed $\frac{1}{8}$ -in. in width.

Dimension Stock.—All dimension stock in any thickness shall be machine cut to the length specified, and, if allowance is desired for trimming, specification should be for length required and stock is to be billed and measured at actual lengths cut, and all dimension sizes may be a trifle full as to width.

Unless otherwise specifically stated, all orders for dimension sizes are to be cut to the sizes speci-

fied in one-piece stock, in addition to include what part pieces the logs produce, and the part pieces are to be as wide as possible.

All dimension stock must be cut reasonably square.

Standard Crossbanding.—Stock of 1/16-in. or less in thickness to be unselected for color, to be free from open defects, but shall admit pinworm holes, sound doty spots, discolorations and splits that will close in laying (splits to be not more than 10 per cent of the length of the piece).

Stock not exceeding 40-in. in length shall contain the following percentages of whole sheets:

Up to and including 36-in. widths. 60 % whole sheets
All stock 60 to 73-in. widths, inc. .50 % whole sheets
All stock 60 to 73-in. widths, inc. .40 % whole sheets
All stock 74 to 86-in. widths, inc. .25 % whole sheets
(On piece stock 1/2-in. must be allowed on each piece for jointing.)

Core or Center Stock.—Stock 1/15-in. or thicker to be unselected for color, to be free from open defects, but shall admit pinworm holes, sound doty spots, discolorations and splits that will close in laying. (Splits to be not more than 10 per cent of the length of the piece.)

All stock not exceeding 40-in. in length shall contain the following percentages of whole sheets:

Up to and including 36-in. widths. 60 % whole sheets
All stock 37 to 59-in. widths, inc. .50 % whole sheets
All stock 60 to 73-in. widths, inc. .40 % whole sheets
All stock 74 to 86-in. widths, inc. .25 % whole sheets
(On piece stock 1/2-in. must be allowed on each piece for jointing.)

Unselected Log-run.—Stock of any thickness must

grade at least 50 per cent or more clear cutting in face grade and no cutting is to be considered that is less than the minimum width allowed in the thickness and less than 12-in. in length.

In all thickness up to and including 1/15-in. the stock shall be 8-in. and up wide, with at least 50 per cent of the stock 16-in. and wider; to be 48-in. and up long and at least 50 per cent 60-in. and longer.

In thickness of 1/12. and thicker, the stock shall be 6-in. and up wide, with at least 50 per cent of the stock 16-in. and wider; to be 36-in. and up long and at least 50 per cent 60-in. and longer.

Selected log-run shall be of the same specifications, except that it shall be selected for color.

Unselected Sheet Stock.—Stock of any thickness must grade at least 75 per cent clear cutting in face grade and no cutting to be considered that is less than 6-in. wide by 24-in. long.

In all thickness up to and including 1/15-in. the stock shall be 8-in. and up wide, with at least 50 per cent 18-in. and wider; to be 48-in. and up long, with at least 50 per cent 72-in. and longer.

In all thicknesses of 1/12-in. and thicker the stock shall be 6-in. and up wide, at least 85 per cent 11-in. and wider, and must have 50 per cent of the total at least 16-in. and wider; to be 36-in. and up long, at least 90 per cent 68-in. and longer.

Selected sheet stock shall be of the same specifications, except that it shall be selected for color or figure.

Standard Drawer Bottoms.—Stock of any thickness to be unselected for color and to be free from splits, but may permit small tight knots, otherwise to be face grade.

Lump Sum and Cost Plus Contracts.

CONTRACTS and their interpretations will always prove contentious as between the architect or the engineer and the contractor. It is part of the manichaeism of human nature. There are two viewpoints and, therefore, room for differences of opinion.

The general method of letting a contract may be called the "lump sum" method. A bill of quantities is drawn up, the contractor inserts his prices and a lump sum is arrived at which is the amount of the tender. The architect or engineer accepts the lowest tender and for any extras or deductions the schedule rates are used to effect adjustment of the total sum. This is practically the universal sys-

tem, and is thought to give the best results as it is based on competition.

The advantages of this method are supposed to be the open field amongst contractors, the definite figure as to cost, and the worry saved to the architect or engineer in not accepting any responsibility for prices or rates except those definitely laid down in the schedule. The contractor, on his part, may prefer the lump sum method, as it gives him a better chance to gamble, he is assured of any savings he can make, and he hopes to make larger profits on the extras.

Schedule rates are not always meant to be the true estimated costs of the various items. We know

of contractors who have two schedules—one a private one representing the true figures, as near as they can be estimated, and the other the schedule which is submitted with the tender. The first one will give the amount of the tender and the second one is adjusted to give the lump sum, but some items are cheapened and other items are increased in value in accordance with the expectation the contractor may have of the items being decreased or increased in quantity. This is pernicious and, if matters do not turn as the contractor expects, there is bound to be trouble in carrying the contract into effect. The lump sum method means too often that the lowest tendered receives the contract, provided he furnishes sureties, irrespective of the fact that, even with all the precautions stated in the specification, there may be a material difference in the structure as completed by two different contractors. Then, there is the waste of money involved. A contractor may only get one out of ten or twenty jobs for which he tenders. He must get expert assistance in preparing those tenders and, assuming that he must live, he must recover the amount he has lost in the unsuccessful tenders from that which he receives from the successful ones. Very often, too, there is the heavy expense of lawsuits to the disadvantage of both parties.

Now, the architect or engineer desires a sound work at a reasonable cost. The contractor is entitled to a fair profit and experienced architects and engineers know that it is very unsatisfactory to have to deal with a contract where the rates are too low. Human nature being what it is, it means that the contractor is scheming to save every penny even at the expense of the soundness of the work. Trouble and dissatisfaction arise and the work suffers. Now for every job obtained below cost price there must be other jobs upon which the profit is greater than it ought to be, as most contractors do not die bankrupt. This means that the contractor has to include more than an ordinary profit in making up his lump sum tender to allow for risk from dispute, lawsuits, losses, etc., and the expense involved in submitting tenders which are unsuccessful.

What is the second method? It is the "cost plus" method: that is, the contract is the actual cost of labor and materials, plus an agreed upon profit. At first thought this method seems hazardous. To the owner it apparently opens the way for malpractices by the contractor or, at least, slackness in supervision. To the contractor, it eliminates all possibility of gambling for a greater profit.

What are the advantages of this method? First, the rate of profit being fixed, both parties to the contract can work together to obtain the best result for the money spent. There is no conflict of interests. Second, any savings in carrying out the

work are gained by the owner. It is no disadvantage to the contractor to suggest methods for saving in various items or to point out mistakes. Third, and upon this there will be no disagreement, a much better and sounder job is done. Fourth, the work can be started without waiting for detail plans. This method implies absolute integrity and efficiency in the contractor. Too often all contractors are looked upon as dishonest. There are "black sheep," but contracting should be as honest a trade as any other. Under the cost plus method the dishonest contractor would soon be eliminated. It is under the lump sum method that he flourishes. Architects and engineers think that they can tie up a contractor completely with their conditions of contract and specifications and, therefore, do not hesitate to employ a contractor of whom they are suspicious. Under the cost plus system they would not employ him at all.

It might be advanced that the cost of the work would not be known before completion; but a reliable estimate is quite as good as a lump sum tender and a maximum sum can always be fixed. Merchants sell their goods for cost price plus a fixed profit. Why should a contractor not do the same? An inefficient contractor would not get the work. It would soon be known whether a contractor organized his work badly or permitted slackness. We must get over the ideas brought to us from the Victorian age of bad competition and always at the back of our minds the possibility of "something for nothing." We have no right to expect tenders lower than cost price plus a reasonable profit and, if this be so, why not carry out this method direct? suits brought down to a minimum.

Building Materials Men Resolution.

At the Atlantic City meeting Dec. 4, of the National Federation of Building Industries 14 of the War Service Committees were represented at the meeting of the Building Materials, Group 13. Ernest T. Trigg, of Philadelphia, acted as chairman.

Fifteen resolutions were acted upon and twelve were adopted. These covered a variety of subjects, from freight rates to a protective tariff.

Active discussion took place as to what means were to be recommended for preventing the dumping on the market of surplus construction materials by the government. The matter was finally settled by combining two resolutions offered by the National Committee of the Federated Supply Associations and the National Federation of the Building Industries.

Col. Sam Tate, chairman of the War Service Committee on Building Stone, was one of the speakers at the session.

The Architect in Industrial Building

I FEEL it a very distinct honor to have been asked by the president of the Institute to contribute a word to the deliberations of the convention on a subject on which I have certain convictions, and about which there exists at the moment considerable speculation said Albert Kahn, Architect, in an address before the Fifty-first Convention of the American Institute of Architects.

Our particular office is largely engaged in industrial work for a class of clients which, too often, employs the engineer or contracting engineers, virtually contractors, who prepare their own plans. This fact, then, perhaps qualifies me to call attention to certain points of which the profession at large must take cognizance if industrial work is to be done more generally by architects.

The war, of course, has brought the matter to our particular attention. General building work has practically come to a standstill and must necessarily remain so while the Government needs every bit of energy expended on war work. Only Government work and buildings for concerns doing war work are being constructed, and since so much of this has been, and is being entrusted to large contracting firms, the question very logically arises, why? And then the further question, what is to be done to alter the situation?

The war has acted like an electrical storm in clearing the atmosphere surrounding the practice of architecture, and in revealing the architect's position in the commonwealth. That it is not altogether what it should be is very evident and that remedies to correct the situation must be found is equally apparent.

Primarily the past generation has been a period of tremendous industrial activity. Science has been pressed into practical service and has become the hand-maid of our daily life. New forces and new machines now at our command were unheard of three decades ago. Structural steel, sanitary plumbing, modern heating and lighting, and reinforced concrete were unknown a generation ago. These developments must obviously exert their influence on building. But while the busy world was perfecting one invention upon another, architects, as a class, failed to heed the trend of the times. Only grudgingly would they allow the utilitarian to enter into the building program. Modern ideas were all right if they did not trespass upon artistic concepts. Modern requirements had the unhappy habit of interfering with preconceived ideas of beauty. But the new methods were economically sound and practically sane, so they advanced under their own im-

petus, and if conservative architects would not adapt themselves to new conditions then another class must rise who would.

The impression prevailing in the minds of owners regarding architects in connection with industrial work has grown to be analogous to Mark Twain's comment on Christian Science when paraphrased, "If physicians," he says, "only knew more about Christian Science and Christian Science more about medicine, the chances are the patient would get well with either, provided he had a good nurse." And the paraphrase, "If architects only knew more about engineering, and engineers more about architecture, the chances are the owner would have a good building with either, provided he had a first-class contractor," is the general conviction among owners of industrial buildings.

Just as I started to write this paper the March number of the Architectural Forum came to hand. You have read the several answers to the questions put by the editor, "In what manner and by what means can the practice of architecture be developed in order to win larger recognition?" To me, practically all the answers seem far of the mark. The very remedies proposed by the majority are at the bottom of the misgivings concerning architecture. I take it that in putting the question the editor meant to ask, "Why are architects not more generally called upon to render service in this vast amount of industrial work under way? For the question of proper recognition would scarcely enter were the work of a monumental character. Neither the Government nor the public would undertake such without the assistance of the architect. The most important work is quite generally now entrusted to the best men, and a very high quality of results obtains, for discrimination and appreciation have grown largely among the people. Architects have, therefore, very little to complain of in this field. They have proven their worth and have made themselves indispensable. And this is exactly what many have not done in the province of industrial work. When a company decides to build a bank or a board a library or an individual a fine residence, they call in the best architect they can find, but when a corporation or the Government decides to build a large industrial plant, they, too often, call in not the architect, but the engineer or the contractor.

Now, gentlemen, one or several corporations doing this might mean nothing. When, however, the practice grows to be general, make up your minds that the fault lies not with the corporation but with the architects.

To me the reason for the existing condition is

simple. There is nothing mysterious or strange about it. Educational work among owners and propaganda are the remedies proposed by those answering in the Forum. It is not the owners who must be educated, it is the architects themselves. And as for advertising, such never bore results unless the goods were delivered.

Put yourselves in the place of a man about to build a factory. Would you call upon the artistic superman, the ardent idealist who soars in the skies, discourses on beauty of design and everything else but practical requirements, or would you seek the man who would suggest a practical, common-sense layout to meet your requirements, the man who would look at the problem from your own standpoint, who would place himself, as it were in your shoes, and strive to solve the problem with and for you? The answer is obvious. You would place your work with the man of sound understanding and sane judgment, rather than with the artist, even if real and not imaginary, as is so often the case. You would seek an organization composed of men competent and qualified to handle the project in its various phases of plan, design and engineering, both structural and mechanical. Now such organizations are not built in a day, but require time to bring together and perfect in team work.

That anyone can do a good manufacturing building, and that it requires no particular skill, has been the general impression of the profession. The owners, however, know it to be quite different and no amount of propaganda will convince them otherwise. No more can the general house physician at one moment turn to surgery and achieve distinguished results than can the architect to industrial work until he has devoted himself energetically to such work in all its complexities, and has therein gained experience.

Here is the situation in a nut shell. Industrial buildings must need deal largely with practical requirements, structural design and mechanical equipment. To be sure, every owner prefers to have his building of good appearance, but this is only incidental. The plan must be economically designed. First and last, it must serve as an investment, not as a monument to the designer. And there is the rub. The very title "architect," which implies the building of the beautiful, fills the owner with fear that more attention will be paid the exterior to decorative details, than to the many practical features so vastly more important in the problem. The engineer, little concerned with appearance, more interested in the construction and in the success of the mechanical installation, is therefore called in, and though his buildings are generally monotonous and uninteresting, manages to satisfy his client. But

even he is often dispensed with and the contracting engineer is entrusted with the work of design, as well as the construction. Whatever the general opinion of the architectural profession regarding the contracting engineer, certain advantages which commend themselves to the owner must be obvious. The manufacturer naturally welcomes every idea which tends to assist him in simplifying his problems. If he can call in a construction company, which has on its staff competent architectural men, good engineers, capable building superintendents, and if the company has proven itself able to produce successful results economically, he naturally prefers to deal with one person rather than a number. Efficiency is the watchword of the day. Directness of results, good business methods and speed in construction are the desired ends. Contracting firms have been more awake to the exigencies of the times than have most architects, wherefore their success. They have appreciated the value of concerted effort, of full co-operation and of proper co-ordination, wherefore they have won the favor of the owner at the expense of the architect. We know very well that in such an arrangement the owner is at the mercy of the contractor, that he is unprotected, that he doesn't know whether he is receiving full value for the money expended, but the owner is quite willing to take his chances on this. To deery the system, then, is useless. The whole problem must finally be a matter of "survival of the fittest."

There is just one way for the architectural profession to meet the situation, and that is by serving the owner better and more efficiently than do contractors. By planning better buildings, by working more assiduously, more interestedly, by designing more economically and by obtaining results more direct and more efficient than the contractor. If we can show buildings better arranged, better constructed, at less cost, and incidentally more attractive, if we can handle an operation in a business-like manner, expeditiously and without friction, shall we need to worry about lack of appreciation or recognition? Absolutely not. In just the measure that we are equipped and capable to handle the work we seek, in just that measure will it be entrusted to us.

Service, satisfaction at all costs, sustained interest in the work at hand, strict attention to the detailed requirements of the client, a quick grasp of his needs, a prompt acceptance of his viewpoint, and a sincere desire to co-operate and to solve his problem for and with him; these are what he expects. And yet, how often is the owner served otherwise, and his viewpoint entirely ignored. This is not on industrial work alone.

It is only a short time since I visited—with several professors, the biological buildings of various

universities. This in connection with a building of the kind we were to do. The one prime essential for such structures is light and a minimum of obstruction for microscopic work. Practically every building we saw was either Collegiate Gothic or an adaptation of an Italian palace, with glass but sparingly used, and when the question was put to the professor in charge of the departments, "Why so little light?" his answer was invariably, "Well, our architect felt that more would ruin the appearance of the building." Now is this right? Is this living up to our duties as architects, or to the best traditions of the art? In our particular building we frankly accepted the situation. We built them what we felt they needed—a modern industrial building with a maximum of glass surface and a minimum of masonry. The building is being used today with the greatest satisfaction to the faculty. Now, if the best work in the study of sciences is accomplished in a modern work shop, why force a museum upon the scientists? And yet this is done only too often in practically every field of building.

This brings me to a point which so often makes for distrust of the architect—the eternal disposition of many to occupy a pedestal of exalted importance and superiority. It is their intent to make up by an air of profound wisdom what they lack of actual knowledge. Educate the client is their cry, and while they are attempting to educate him in something he knows more about than they, some saner man rightfully walks away with the work. This attitude is particularly offensive to the builder of an industrial plant, who, as a rule, has definite ideas of what he wants.

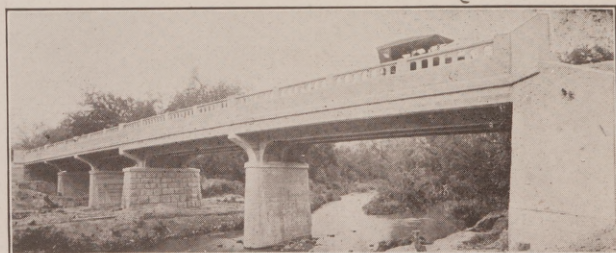
I have yet to find a single client unwilling to be advised, but in the proper manner, if you show him both that which he has in mind and at the same time a better scheme, ten chances to one he will accept yours. But neglect to show him on paper his own ideas and submit merely yours, and you are doomed to failure. Psychology here plays an important part. No owner wants his pet ideas ignored, no matter how impossible. He feels himself entitled to their careful consideration and rightfully insists upon this. We must have the owner's confidence, and in no manner can this be won more fully at the outset than by the proper attack of the problem.

Another point—how many architects keep abreast of the times? How long is it since reinforced concrete, for instance, has proven itself an invaluable building material? It was strange enough that its acceptance was at first so long delayed by architects in this country, but there are many even today who have their misgivings and prefer to advise the use of lumber instead. And what is the reason? This—that concrete must be carefully mixed if used.

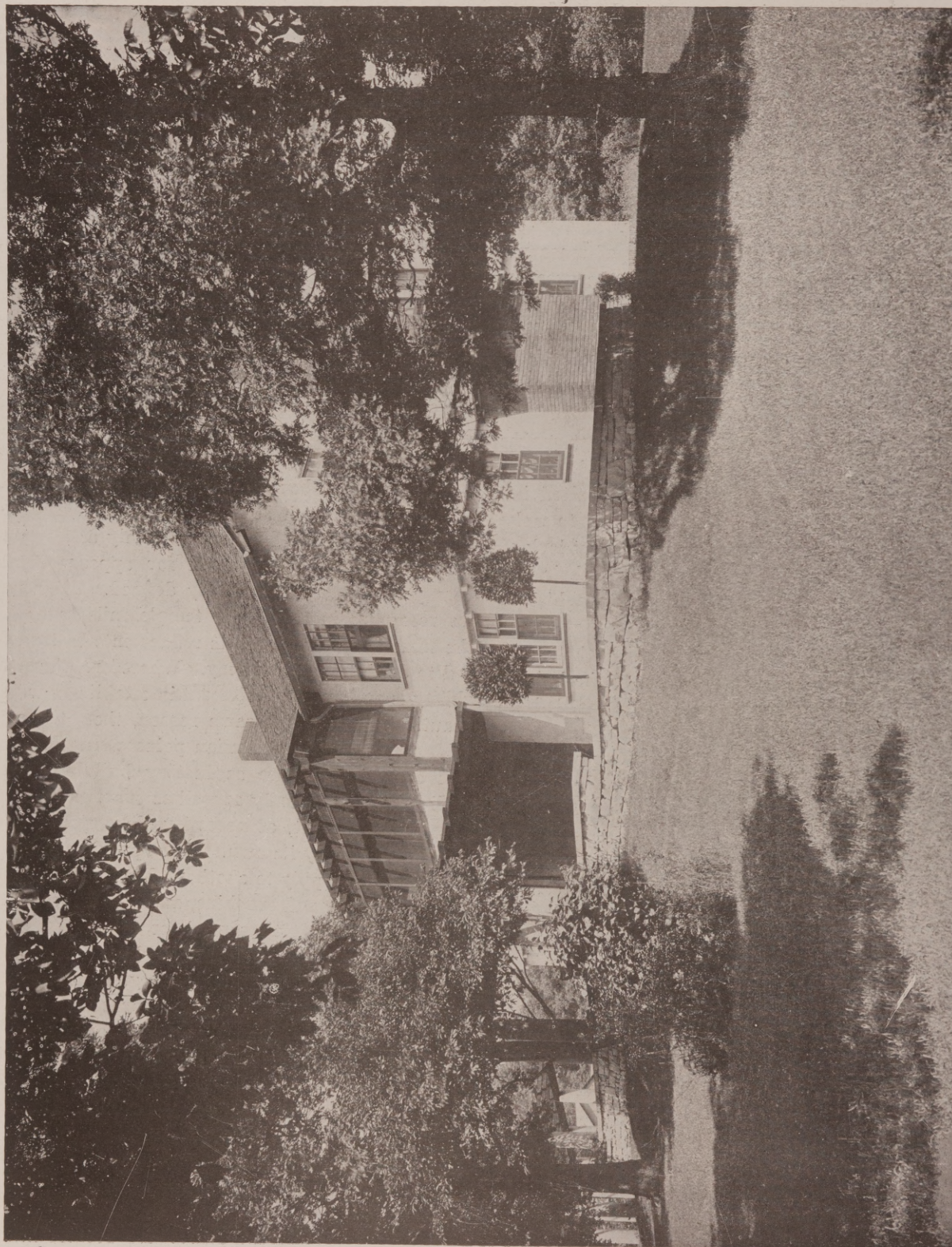
Are they not engaged for the very purpose of seeing to this? Just as well object to the use of steel, for the riveting must be properly done if it is to stand up. It is not so long since that a firm I know had positively to be forced by the owner into using reinforced concrete, and then only acquiesced in order not to lose the commission. Now, is this thoughtful conservatism or is it deliberate neglect of the architect's duty toward his client, which duty requires that he keep advised of modern methods and improvements, and that he give his client, which duty requires that he keep advised of modern methods and improvements, and that he give his client the benefit of such knowledge? If the architects will not, can we blame the owners for employing others who will?

This is a technical age, an age of rapid advancement and achievement. Action is the watchword of the day. Utility must have recognition before beauty. And if architecture is to remain a living force, the expression of the spirit of the age, we, the architects, must express the demand of the times in our work.

If anything I have said has given the impression that beauty as such is to be ignored in building, I want to correct it. I believe as firmly as anyone in carefully studying the work for appearance, but beauty is a term not so easily defined. The beauty we recognize in the Greek temple fails to exist if the same temple with all its refinements be transferred to do duty as a brewery. Wherefore, then, suitability is an important element in establishing what is beautiful. For which same reason, then, the admirable wall surfaces of Italian palaces transferred to this country to serve as factory buildings would spell failure artistically as well as practically. Each new problem must, of necessity, develop standards of beauty entirely its own. Those applying to one do not necessarily apply to another. We know the value of light and air and sunshine, and also know that to supply such is a first essential for the success of the industrial building. A building which inadequately fails to provide this fails in beauty, no matter how fine its details. Fulfillment of practical requirements and beauty, however, are not incompatible. Indeed, they are closely allied.



Some Pretty Types of Homes



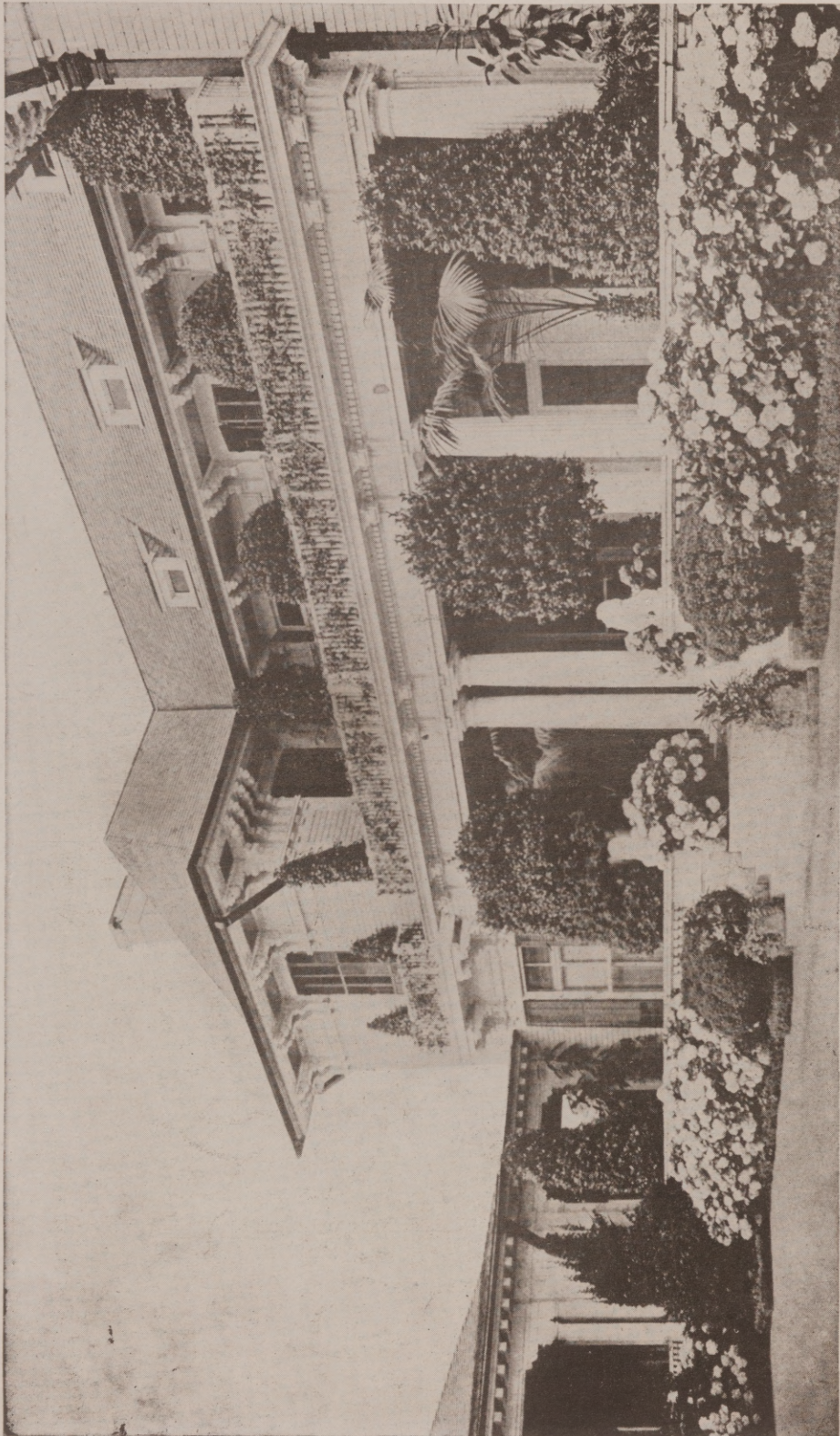
Trees an Aid to Beauty and Companionship of Home Life.



An Artistic Interior. In winter the light window shades are supplanted by heavy curtains which may be drawn together so as effectually to shut out cold drafts. With the aid of fireplace and radiator the room thus proves comfortable even in severe weather.



The Home of Mr. Henry S. Brophy, at Maplewood, N. J. B. Halstead Shepard, Architect.



Residence of Daniel Guggenheimer, Long Beach, N. J.
Carrere & Hastings, Architects.

Porch Columns Made by Hannmann-Sanders Co., Chicago.



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

Good Roads and Reconstruction

ONE of the major reconstruction problems ahead of the administration and congress is the working out of a system of good roads and national highways—roads over which will move farm products and other supplies required for the rehabilitation of the world.

The good roads movement is already taking form here. It does not concern piecemeal "pork barrel" bills, but a comprehensive scheme for backing up the railroads and steamships with highways that bring nearer interior points. Members of congress and government officials now appreciate the effect of auxiliary transportation during the war and the next good roads bill will not be called justly a "pork barrel" measure.

This does not mean that congress is preparing to spend many millions for ornamental military highways. The good roads of the reconstruction period must be serviceable affairs, criss-crossing every section of the country and pointing the way from remote points to centers of distribution.

For several years the United States must assist, or take the leading part in, the rehabilitation of the devastated countries of Europe. This nation and its farms must not only feed countless human beings, but it will be required to furnish building materials and other supplies on a scale never before approached in the history of our export trade.

Ships alone are not needed to transport the foreign commerce of the United States in the reconstruction period and thereafter. Behind the ships must be the country's railroads and behind them little systems of transportation from the farm to the merchant and thence to the nation's ports.

The American Association of State Highway Officials and the American Automobile association are to co-operate in support of some measure which will focus the attention of congress upon the good roads question. Preliminary discussion concerns a plan whereby the federal government and the states will join in the construction of at least two great highways in each state, one running east and west and the other north and south and connecting with similar arteries in other states.

A good roads bill of a half-billion or a billion dollars is tentatively in the minds of some members of congress and highways enthusiasts.

Colonel H. V. Varner, of Lexington, N. C., publisher of the Southern Good Roads Magazine, is now in Washington and hopes for the introduction of a billion-dollar bill. He has discussed the matter with members of congress and believes there will be action.

"One of the greatest reconstruction measures which congress could pass," said Colonel Varner, "is a billion-dollar road bill.

"Improvement of the country's highways to han-



Effective Uses of Garden Pottery.

the commerce of reconstruction is one of the major problems ahead of us today and congress cannot give its attention too quickly to this vital question. "What good roads we have helped to win the war; a real system of highways—not military highways but commercial highways—is vital to our after-war commerce."

The highways transports committee of the Council of National Defense issued a statement today which directs attention to the necessity of good roads if the products of American farms are to be transported advantageously to the waiting markets of the world.

Earl Curzon, of the British war board, is quoted as having said recently that the cause of the allies had been "carried to victory on a wave of oil, because if it had not been for the great fleets of motor trucks the war could not have been won."

The oil to which Lord Curzon refers came principally from America and he added that "it was a victory of automobiles over railroads."

These automobile trucks, it may be said, not only rumbled over the battle areas of France but back in the United States other trucks relieved freight congestion, promoted the expeditious movement of soldiers and transported innumerable tons of supplies over American roads and to the ports of embarkation.

The statement of the Council of National Defense quotes a letter from E. N. Hurley, chairman of the shipping board, to the highways transport committee, saying in part:

"Millions of cruelly starved folk face westward from every shore with mouths open to the promise of America. These must be fed—and then clothed—and also supplied with the other necessities of life. Our grand privilege is now here to restore life, strength and hope to these martyred brothers of a hundred tongues.

"Highways transport facilities at the farmer's gate and—at every farmer's gate—must immediately suggest the initial phase of overseas distribution; must make a picture in the farmer's mind of the movement of the products of his soil and labor from his own gate through to the distant points of the world; to Europe, to Algiers, to Athens, and the Orient.

"The highways transport service is the first step in the great system of transportation to the sea and then on the merchant marine to the far points of the world.

"Food must begin to move soon from every hill, through every valley of the great country behind our shores, down to the shipping points before we can start our ships from the ports and fulfill our duty; and, with the promise of the war's end before us, the highways transport committee throughout this land could and should render a peace-time serv-

ice by stimulating highways transport of nourishment and supplies so badly needed. Routes and channels from shipping points must be opened up and efficiently maintained and our merchant marine must be built up to meet the demands for distribution overseas.

"Resistance in any form to the free movement of farm products must be reduced and eliminated, and the most efficient utilization of man-power must be introduced wherever possible.

"The United States shipping board urges that this message be carried through you and your regional chairmen to the state organizations and on down through your great body of patriotic men whose vision can well embrace the crying need of their brothers in other lands for help."

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.

27694.—A man from Argentina who is at present in the United States desires to establish connections with American manufacturers and exporters of construction material, cement, wire, pipes. References.

27702.—An importing house in Argentina desires to represent American manufacturers of Portland cement, heavy chemicals, lumber, iron, and steel wire. The firm has a representative stationed in the United States with whom interested American firms may communicate. Reference.

27704.—A civil engineer in the United States who is going back to Europe to reopen offices in France and Belgium wishes to be placed in communication with American manufacturers and exporters of building material of all kinds. Reference.

27739.—An Australasian import and export firm desires to be placed in communication with manufacturers of hardware, tools, motors, shingles, galvanized wire, steel, etc., for sole representation throughout Australia and New Zealand. Quotations should be F. O. B. Pacific port or New York. Terms, 30 days sight draft. Reference.

27743.—A man in Colombia wishes to secure agencies for the sale of construction materials, textiles, paper, lubricants, automobiles, and trucks, and iron and steel products. Correspondence should be in Spanish. References.

How to Own Your Own Town

A NUMBER of interesting papers dealing with different features of housing were read before the closing sessions of the National Housing Association Conference at Boston, November 25th to 27th, and the most interesting feature was the expression of opinion by experts that the United States government, through its building of homes for war workers, has a golden opportunity to set an example for landlords and the view that the wishes of tenants are bound to receive more and more consideration.

This address by Lawson Purdy, chairman of the committee on New Industrial Towns, points a way to collective ownership and government by co-operation:

"I present no panacea for securing good homes for everyone," said Lawson Purdy of New York, chairman of the committee on industrial towns. "The plan I propose cannot be applied everywhere and however well conceived it will fail to achieve its purpose if the management be poor. Consider, first, what we want; second, what we have; third, how, under appropriate conditions, we may achieve success.

"We want homes for wage earners. The word 'homes' would tell the story to one who knew all the word implies, but no one is so wise. Some know town planning and sanitation and house building

and some much about community centres and education and recreation. Some know a great deal about family life and how people think and why they are happy or suffer. One might know all these things and if he knew not politics the town might be an utter failure.

"A good home means a house well planned, safe and healthful, surrounded by congenial and friendly people all interested in the welfare of each other and of the community. There must be good stores and amusements, good schools and places for games, for recreation and rest. There must be security of possession at reasonable cost. These blessings have usually been thought to be secured best through individual ownership. We know that home ownership gradually decreases, that it is often impossible and frequently undesirable for wage earners and that, as a rule, it is opposed by labor organizations.

"What we now have is the result of unguided and mainly uncontrolled building for profit and selling houses for more than they were worth to people who thought the houses would last forever, had inadequate capital, and knew little about management. We have been careless of safety and allowed buildings of wood and paid enormous bills for insurance.

"What shall we do then to secure the advantages of individual ownership and at the same time have



12-Room Concrete House, C. W. Buchanan, Architect, Pasadena, Cal.

a single control over large area under good management. Some form of cooperation furnishes a solution and there may be cooperation that is worth while under various forms.

"While the following conditions are desirable, there may be successful cooperative ownership of even a single multi-family house. The areas should be large enough for a community that would supply its own stores, schools, churches, amusements and amenities of all kinds. It must be convenient to places of employment. The streets should be planned so that the area set apart for stores and theatres should get as large a share as possible of the patronage of the people. If practicable, most of the houses should be for single families, but there should be some multi-family houses with ample ground around them for boarding houses for men and separate for women if there should be a demand for them. Care should be taken that the number of stores of various kinds should be sufficient, but killing competition should be avoided and the highest possible rent could be obtained for business property under such conditions. The increase in the value of land of property for dwellings would be small, but the rent obtained for all business property would represent a large advance over original value of vacant land.

"The land and buildings should be owned by a corporation without capital stock directed by trustees of ability and public spirit. After a community spirit was formed the tenants should select some of

the trustees and perhaps ultimately all of them. The capital for such an enterprise could be supplied, profitably to itself, by an industrial corporation which desires a stable supply of workers, by the United States, as it has already, or by states or cities.

"Such a community should be able to buy itself free in from twenty-five to fifty years and be well off in the meantime. If 5 per cent interest is paid on capital and 2 per cent to a sinking fund, the principal would be paid in about twenty-seven years. A sinking fund should be maintained for replacement of buildings. Under a single control with efficient management, the buildings would have a much longer life than under ordinary conditions.

"When the property shall be paid for in full the entire net earnings would be available for community welfare and can be so maintained forever for all subsequent tenants.

"In such a community where all have an interest in good management and in the behavior and character of tenants, where the prosperity of each makes for the prosperity of all, where all nuisances can be excluded and all reasonable common needs supplied, the interest of all in their common community will far exceed any interest anyone may take in his privately owned home where he is subject to all the dangers and disadvantages which lack of protection now brings upon him. We can substitute if we will for the best home sentiment we now have a much broader and deeper sentiment for common good."

Fuel Saving Heating Systems

IN conversation with a local Fuel Administrator the writer was recently asked, "Cannot something effective be done by you engineers and steam fitters to impress upon the house owner the importance of saving fuel in the home heating apparatus? I have never before realized how tremendous is the waste. The repeated warnings of the administration seem to have but little permanent effect," writes Alfred G. King in *Domestic Engineering*.

We were glad to assure him that much was being done by the heating trade in this direction and called his attention to "*Domestic Engineering*" and cited several editorials and articles which have been published by this magazine.

Are we heating men—engineers, contractors, and steam fitters—alive to the importance of giving our time and effort towards the support of the government by carrying on an effective fuel saving cam-

paign? We have, by united effort, assisted in carrying the several Liberty Loans, Red Cross and other important campaigns, over the top. We can by the same united effort prevent much of the present fuel wastage and save millions of pounds of coal.

The house owner has installed a heating apparatus in the home for the comfort and convenience of the occupants and, as a usual thing, has given much thought and attention to secure a modern efficient system. There are many people, however, who seem to think that having equipped the home with a modern system of heating, the apparatus will henceforth run itself, to all appearances believing that the only attention required is to put coal in the heater and remove the ashes.

While true that modern engineering science, as applied to the heating industry, has evolved many highly efficient automatic devices to lighten, in a

large measure, the care necessary to the proper operation of the heating apparatus, the great majority of the systems in use today is without such appliances. The omission of such equipment, coupled with the fact that seventy-five per cent of such apparatus are woefully mismanaged, is responsible for the larger part of the fuel waste, for the principal unfortunate result of this mismanagement or carelessness is the consumption of an excessive amount of fuel. In the endeavor to maintain the proper temperature within the home much coal is wasted by a fitful firing of the heater. In larger buildings—those of sufficient size to warrant the employment of an attendant to look after the heating apparatus—little cause for complaint arises, even though such buildings are without automatic heat control, as the fireman, in the effort to lighten his labor will invariably discover the best method of operating the apparatus in order to lessen the attention and fuel required. While regular and careful attention no doubt prevents much waste, automatic regulation would show a decided saving.

Each succeeding decade witnesses a growing scarcity of fuel and, even in normal times, a consequent corresponding increase in its cost to the consumer. The manufacturers of every kind of heating apparatus have, in recent years, given much thought and study—we may also say, effort and money—in their endeavor to increase the efficiency of their product.

This word "efficiency" has secured lately a great deal of prominence, as meaning much to the world's progress and development. Today we recognize scientific efficiency in all lines of endeavor. Temperature regulation in the shape of automatic controlling devices for regulating the drafts of the heater, according to the varying temperature of the rooms can be regarded as scientific efficiency applied to the heating apparatus, for of all the accessories to a warming system none other is so important.

Intermittent heating, that is, allowing the rooms to cool below the temperature desired, and then opening the drafts of the heater fully in order to again raise the temperature as quickly as possible, permitting the rooms to become overheated, causes the needless burning of considerable excess fuel. To maintain the rooms at an unvarying temperature of 70 degrees (or other desired standard) during the day and, say, 60 degrees during the night, requires the burning of less coal, as the heat units distributed through registers or radiators are not cooled as rapidly as would otherwise be the case.

Automatic Temperature Regulation.

The price of automatic temperature regulation is not prohibitive of its use. Regulators or thermostats, as they are frequently called, cost the consumer but from \$50 to \$85 complete, according to the kind selected, and no user of a steam, vacuum, vapor or a hot water heating apparatus can afford to operate his

plant short such an appliance. The saving in fuel consumption in warming an average size house will, as a rule, approximate two tons of coal per heating season. Considered on the basis of a business proposition, isn't it wise to secure a regulator at a cost of \$50 or \$85 with the knowledge that the investment will return from twenty-five to fifty per cent yearly? This phase presents one reason for our claim that no user of a heating apparatus can afford to be without a system of temperature regulation, and in making this statement we have not considered its value in further increasing the comfort and health of the occupants of the house.

Of healthfulness, secured by a uniform temperature, it seems necessary only to remark that all those physicians and scientists who have carefully studied the subject agree that next to proper ventilation of our homes a uniform degree of warmth is essential to good health.

The details and facts here presented form the basis of a good line of convincing selling talk for use with the house owner. They should be fixed in the mind of the heating contractor, and any other available facts, in order to the more successfully spread the gospel of fuel conservation by means of temperature regulation.

The various types of regulators for use with domestic heating apparatus may be divided into two general classes; (a) Those controlled by the temperature within the apparatus; (b) Those controlled by the temperature within the building. There are several different makes and styles of each type, those of class (b) being specially adaptable for controlling the temperature in residences, and this kind may be divided into two groups, namely, electric and non-electric, the most popular being those of the electric variety.

All electric thermostats have a positive and a negative action of the motor or other mechanism which controls the drafts. This action of the motor opens or closes the draft doors of the boiler automatically in conjunction with each other, the check damper opening as the draft door closes and vice-versa; therefore no matter what type of a thermostat is installed it should be attached in such a manner that the draft and check doors operate in unison. This is accomplished by a simple method of adjusting the guide chains which are run over pulleys in making connection between the motor, check and draft doors.

The only part of the regulating device which appears above the basement is the thermostat, a little device which is placed on the wall of the living room or a room more generally occupied. This has been called a mechanical thermometer. The thermostat is usually covered with a handsomely finished metal frame to which is attached a mercurial thermometer. A wallplate or frame is fastened to the wall and attached to this plate is a piece of metal in the form of a loop or ring. One end of the loop is made fast the other hangs free. Attached to the loop end is a

strip of metal or a blade which is very sensitive. The slightest change of temperature will expand or contract the loop and cause a side motion of the metal blade which is held between platinum tipped screws or contact points. If the temperature of the air in the room rises, the loop expands, and the blade is thrown against one set screw closing the circuit communicating with the motor in the basement, which operates to close the draft door of the boiler and open the check door. When the temperature of the room falls slightly below the degree at which the thermostat is set, the loop contracts and the blade is thrown against the pin on the opposite side of the frame, the action of the motor is reversed, and the fire is checked. This operation is entirely automatic and may occur dozens of times daily, and the changes are made so quickly and quietly that the fact that the temperature is above or below the required point has not been noticed by the occupants of the room.

Practically all of the so-called electric thermostats make use of two or more cells of dry battery—open circuit battery, the same as used for door bell work. These batteries supply the current for controlling the motor. Wires run upward through the partition to the back of the thermostats that are connected with the motor. The cells of battery are connected in series and the wiring of all thermostats or regulators is practically the same.

An attractive feature, which has in recent years been added to the best thermostats, is the time attachment. This consists of a small clock, similar in mechanism to the common type of alarm clock, which is attached to the thermostat in such a manner that it can be set to open the drafts of the heater, at any pre-determined hour. For instance, the house may be cooled to 60 degrees, or any other temperature, during the night, and at a pre-determined hour in the morning the clock will operate, opening the drafts of the heater, and place the thermostat in service and the family can later arise in rooms warmed to a comfortable temperature.

In connection with temperature regulation it is interesting to know that the development of automatic temperature regulating devices covering the entire period of experimenting with and perfecting such appliances, has occurred during the past thirty-five years. The late W. S. Johnson, of Milwaukee—a pioneer in temperature regulation—in a personal letter to the writer, written some years before his death, said that he started working with a pneumatic regulating device in 1883 and that shortly thereafter the Minneapolis Electric Regulator (for use with furnaces and small heaters) was devised. The Minneapolis Regulator, aside from certain refinements in mechanism and appearance, remains today in principle the same as when first offered to the public. In recent years many other thermostats or regulators

have been developed and placed on the market, among them being the Honeywell, Marvel, Jewell and others. A number of these have acquired a nation-wide reputation for effective service.

Pipe and Boiler Covering.

Fully as important as a means of saving fuel is the covering or insulation of exposed heater surfaces and bare piping. In many districts the number of heating plants having piping uncovered is astonishing, when it is considered that the economic value of covering steam and hot water piping has long been recognized.

It is usual to cover heater surfaces and fittings with plastic covering and the pipes with sectional covering—that is, covering moulded or manufactured into cylindrical shape and in lengths of about three feet. Each length is covered with canvas or muslin and, to facilitate application, is split lengthwise. The sections are placed over the pipe, the muslin or canvas flap pasted down, and then held in place by metal straps or bands.

The materials used vary. Hair or wool felt, asbestos or rock fibre, powdered magnesium and other materials are used. It is required of insulating material that it be fire-proof, a good non-conductor, easily moulded or applied and not attractive to vermin.

The kind of covering that should be used and the thickness to which it should be applied is determined by the service it is to perform. The common two or three-ply air cell, $\frac{1}{2}$ or $\frac{3}{4}$ -inch asbestos felt and similar coverings are intended for low pressure steam, vapor or hot water piping. These, of course, would not be of the character required for high pressure or superheated steam pipes. For this service a good grade of asbestos or moulded magnesia covering is required. Likewise, where covering $\frac{1}{2}$, $\frac{3}{4}$ or 1-inch thick is sufficient for ordinary purposes, a covering 1, $1\frac{1}{2}$ or 2-inches should be used for high pressure work.

As there is comparatively little difference in the cost of $\frac{1}{2}$ or $\frac{3}{4}$ -inch, or of two-ply or three-ply covering (the cost of the labor to apply it being the same) it is good judgment to use the thicker grade for covering domestic heating piping. The plastic covering of boiler surfaces—fire pot, dome, etc.—should be applied not less than $1\frac{1}{2}$ or 2 inches thick at the most shallow points, and it should be put on in two coats, the first a rough coat which is allowed to harden well before the second coat is applied. The second application should be troweled smooth. A small portion of cement or plaster of Paris mixed with the finishing coat will give the covering a hard exterior finish capable of withstanding ordinary knocks or abuse.

The saving in fuel made by insulating the piping and heater of a house heating apparatus has been estimated as high as thirty or forty per cent. The

majority of steam fitters and heating contractors realize that covering effects a saving but have very vague ideas as to the amount of this saving. Many tests of various kinds have been made, and the results of such tests have been recorded, but it is a peculiar circumstance that none of these results show the same percentage of saving. No pipe covering will prevent all of the waste. One conclusion arrived at is that the heat loss from a bare pipe ranges from 2 to 4 B.t.u. per hour per degree difference in temperature between the steam or hot water and the air surrounding the pipe. Supposing the air in a basement is at 50 degrees Fahr. With hot water at 180 degrees the temperature difference is 180 less 50, or 130 degrees. Assuming the heat loss to average 3 B.t.u. per square foot of surface per hour per degree difference, the result (130×3) is 390 B.t.u. for each square foot of surface in the piping. For steam at 219 degrees (2-lb. gauge pressure), estimating in like manner, the loss is 507 B.t.u. for each square foot of surface.

These results correspond closely with the statement of Prof. Carpenter, who estimates that the heat loss per square foot of surface in small uncovered pipes is from 375 to 400 B.t.u. per hour.

To realize the full meaning of this loss let us consider, for an example, the uncovered piping of a good sized residence hot water heating system. When measured this pipe approximates 20 feet $2\frac{1}{2}$ inches, 25 feet 2 inches, 20 feet $11\frac{1}{2}$ inches, 40 feet $1\frac{1}{4}$ inch and 25 feet 1 inch—about 62 square feet of surface. To this should be added the square feet of exterior surface of the boiler which on a job of this size would approximate 25 square feet, making a total of 87 square feet of uncovered surface.

To make a just and reasonable estimate of the probable loss by leaving the surface uncovered we should carefully consider what conditions might prevail during the cold weather. First, let us consider the heating year or season as being 210 days. Second, we may safely assume that the average temperature of the basement or cellar air during this period will approximate 60 degrees. Third, we must consider that the boiler will be operated to capacity only during very cold weather and, if the radiation, piping, etc., is properly proportioned, the water in the system during this time will be heated to about 180 degrees. During milder weather, and during a part of the night, the water will be allowed to cool to a temperature of 100 degrees. The mean average temperature of the water for the season then is 140 degrees, and 140 less 60 equals 80 , which is the average temperature difference between the water in the pipes and the air surrounding them.

With an average loss of 3 B.t.u. per degree differ-

ence per hour, 80 times 3 equals 240 the B.t.u. loss per square foot of surface, and 240 times 87 (the square feet of uncovered surface) gives a total hourly loss of $20,880$ B.t.u. This amounts to $501,120$ B.t.u. for a 24-hour day.

Assuming that anthracite coal containing 14,000 B.t.u. per pound is used for fuel and that it is burned at an efficiency of 60 per cent (a fair average), then $501,120$ divided by $8,400$ (60 per cent of 14,000) equals about 60 pounds of coal as a daily loss. This amounts to 8,600 pounds, or more than four net tons for the season. With coal costing \$9 per short ton the loss represents 6 per cent interest on an investment of \$600.

If these figures are correct (and we have purposefully considered a minimum of every factor contributing to the loss), is it not of vital importance that every square foot of uncovered surface in the boiler and piping of every heating apparatus be carefully and thoroughly insulated?

Survey Parties Are Needed.

The Construction Division of the Army is without doubt the most colossal organization of its kind in the history of the world. The approximate value of construction projects so far undertaken by this branch of the Government is one billion dollars. The figures representing the material used and the men employed are staggering. 250,000 workmen have been under the control of the Division at one time.

Among the Division's present urgent needs are 50 chiefs of survey party at \$2,700 to \$3,000 a year; 50 transitmen at \$2,400 a year; 25 levelmen at \$2,100 a year; 125 rodmen at \$1,800 a year; 150 chainmen at \$1,800 a year, and 50 topographic draftsmen at \$2,100 a year. These positions are open to men only, except the drafting positions, which are open to both men and women. All of the positions are in the civil, not the military, service.

Persons interested should apply to the United States Civil Service Commission, Washington, D. C., or to the secretary of the local board of civil service examiners at Boston, New York, Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle or San Francisco.

Applicants will not be required to undergo a written examination, the examination being of the "nonassembled" type; that is, the ratings will be based upon education, training, experience and physical ability as shown by the applications and corroborative evidence. These positions offer an excellent opportunity for patriotic service, and the Civil Service Commission urges qualified persons to apply without delay.

The Personal Side

Marye Now with First Army.

Major Philip Thornton Marye, prominent Atlanta architect, who is in the motor transport corps and recently arrived in France, has been assigned to the First army.

Major Marye planned the beautiful terminal in Atlanta, St. Luke's church, the Walton building and many of the other buildings which have been erected in Atlanta during the last ten years. He also drew the plans for the new terminal in Birmingham, the supreme courthouses in Tallahassee and Raleigh.

He is a veteran of the Spanish-American war, having received the rank of captain during his service in that war. His residence in Atlanta is at 31 Lafayette drive.

He is a member of both the Georgia and American Architectural institutes.

Owner Alto Brick Co. Dead.

Mr. James B. Hammond died at his home at Rome, Ga., Saturday afternoon, November 9.

He was fifty-one years of age, born at Bolivar, Pa., April 18, 1867, where he resided until August of this year when he moved with his family to Rome.

For 25 years he has been connected with the fire brick industry in Pennsylvania, Ohio and Kentucky, and during the past few years has owned brick properties in Alabama and Georgia. He has acquired the plant of the Alto Face Brick Company here and was getting it in shape for the manufacture of fire and silica brick.

Kinney Heads Portland Association.

The Portland Cement Association announces the appointment of Wm. M. Kinney as general manager to succeed H. E. Hiltz, resigned.

Mr. Kinney has been connected with the cement industry in cement and concrete promotion work for over eleven years, having occupied for the past four years the positions of engineer, promotion bureau and inspecting engineer of the Universal Portland Cement Company.

He is an associate member of the American Society of Civil Engineers and American Railway Engineering Association, a member of the American Society for Testing Materials, American Concrete Institute, Western Society of Engineers, Engineers' Club of New York, Engineers' Club of Philadelphia and Chicago Engineers' Club. He has been particularly active in the work of the American Society for Testing Materials, being vice-chairman of Com-

mittee C-1 on Cement and a member of the executive committee. He is a member of the executive committee, and secretary of the Committee on Concrete Roads and Pavements of the American Concrete Institute.

Mr. Kinney was largely instrumental in establishing the Structural Materials Research Laboratory at Lewis Institute, Chicago, under the direction of Prof. D. A. Abrams, and has been since its conception a member of the Advisory Committee.

Housing Problems Discussed at Boston Meeting.

Government war housing projects, government housing as a permanent policy and housing in the reconstruction period were the subjects of consideration at the Seventh National Conference on Housing in America, which occurred in Boston November 25, 26 and 27. The conference was held under the auspices of the National Housing Association, the city of Boston and Boston social and civic organizations, and was attended by delegates from all parts of the country.

The conference was called in recognition of the fact that housing will be as serious a peace problem as it has been a war problem. The reorganization of industry on a peace-time basis and the demobilization of the army will bring about a shifting of the labor population for which the country should be better prepared than it was for that which followed the war industry boom.

Governor Samuel W. McCall of Massachusetts welcomed the conference at the opening session. Robert W. De Forest of New York, president of the National Housing Association, responded. Governor McCall addressed the conference at the Tuesday evening session on "The State's Duty in Housing," and Mayor Andrew J. Peters of Boston, who recently appointed a commission on housing to investigate conditions in Boston and make recommendations, also spoke, his subject being "The City's Obligation."

With the prospect of the reorganization of industry and the redistribution of labor upon conclusion of peace and demobilization of the army, the discussion of "Housing and Reconstruction," by Thomas Adams, town planning adviser of the Commissioner of Conservation of Canada and a close student of English housing policies, was of especial interest.

Other speakers and their subjects were:

Joseph D. Leland, third vice-president United States Housing Corporation and assistant director Bureau of Housing and Transportation, United States Department of Labor, "What the Federal Government Has Done and Is Doing to House the Industrial Army."

Frederick L. Ackerman, supervisor of design,

United States Shipping Board, Emergency Fleet Corporation, "Government Housing—Federal, State, Municipal—Is It Desirable."

Ralph Adams Cram, chairman Boston City Planning Board, "Scrapping the Slum."

Mrs. Albion Fellows Bacon, Evansville, Ind., "Heading Off the Slum."

Charles B. Ball chief sanitary inspector, Health Department, Chicago, "Can a Health Department Cope Adequately With the Housing Problem?"

John Nolan, town and city planner, Cambridge, "The Housing Standards of the Federal Government."

Richard Henry Dana, Jr., New York city, "The Group House."

Capt. Boyd Fisher, Employment Management Director, "Reducing Labor Turnover."

Pass Resolutions on Building Stone.

The War Service Committee of the National Federation of Building Industries on Building Stone, in session at Atlantic City, December 3, passed the following resolutions:

"That the conference of American business as called under the auspices of the Chamber of Commerce of the United States declare for outright repeal of the Sherman Anti-trust Act and substitution for same of such constructive legislation as will grant American business the same privileges respecting domestic trade as it already enjoys as to foreign trade under the Webb act.

That the conference of American business as called under the auspices of the Chamber of Commerce of the United States, voice emphatic protest against the proposal to inaugurate a nationwide basis of railroad rates constructed on the theory that distance is the outstanding controlling factor and that any such scheme to disrupt rate structures which are the bulwark of commodity and locality relationships be deferred until it is finally determined whether private or public ownership of railroads shall prevail.

"That the conference of American business as called under the auspices of the Chamber of Commerce of the United States go on record as opposed to government ownership of railroads and requests that the individual lines be returned to private control promptly as possible, but under intensified regulation as respects particularly their corporate affairs.

"That the conference of American business as called under the auspices of the Chamber of Commerce of the United States insist on the immediate creation of such tariff provisions as will guard all elements of industry—soldiers returning to civil life, labor in general, employers, during the period reconstruction at least against encroachments from foreign sources which already are indicating their intention to absorb American wealth."

Atlanta Builders Predict Prosperity.

That the southeast is now on the eve of the biggest business era that has ever been known, was the consensus of opinion at the banquet that was held by the members of the Atlanta Builders' exchange, which was held at the Ansley hotel Dec. 3. The attendance was probably the largest in the history of the association.

The majority of members agreed that the markets would be stable for several years, and in view of the fact that the southeast is now more prosperous than ever before, there would be an immediate need for new buildings. They all believed that the only obstacle which they would face in the next few weeks would be the shortage of labor and materials.

A. A. Craig, the president acted as toastmaster, assisted by Dan Carey, the secretary. Probably one of the most interesting addresses delivered was by Dan Carey, who stated that after many months of "dull" business, and after facing numerous embargoes and other drastic restrictions on business, the members would now be able to resume the building business without handicaps.

An address was delivered by Charles Bernhardt, who is connected with the National Builders' exchange. According to Mr. Bernhardt, in many cities of the north and east, as soon as restrictions were placed on building materials by the government many of the building exchanges disbanded until after the war. While there was some decrease in the membership of the Atlanta organization, the local organization was not abandoned. Mr. Bernhardt stated that the meeting of the National Builders' association, which was to have been held in Milwaukee, Wis., had been postponed on account of the war, but since the armistice was signed the consent of the various building exchanges must be secured before the meeting could be held. The Atlanta builders immediately voted for the convention.

Among the splendid speeches made at the banquet were those delivered by Dan Farrell, R. S. Wessels, Frank Pittman, J. W. LaRoux and others. It was voted at the meeting that all members who have recently rented display space in the Building exchange, 72 and 74 Marietta street, be requested to fill these spaces, and thus help to revive the "old Atlanta spirit."

Remember this one fact—Anything of intrinsic merit can be successfully advertised.

Building and Construction News

Bank and Office.

St. Louis, Mo.—Pulitzer Publishing Co. has permit to alter 8th floor of Post-Dispatch Bldg. for offices of Missouri-Portland Cement Co. cost \$15,000.

Miami, Okla.—T. L. Robinson is reported to erect 10-story office building; brick and reinforced concrete.

Okmulgee, Okla.—N. M. Kimbley is reported to receive bids about Jan. 15 to erect 6-story office building; 50 x 100 feet; reinforced concrete, brick and stone; cost \$130,000; Smith, Rea & Lovitt, architects, Finance Bldg., Kansas City, Mo.

Fort Worth, Tex.—Armour & Co. (main office Chicago) will erect 2-story addition to office building; cost \$25,000.

Springfield, Ga.—Col. Jesse Usher will erect office building.

Oklahoma City, Okla.—Magnolia Petroleum Co., C. H. Converse, Mgr., will not erect 3-story building at Broadway and 7th St.

Greenville, S. C.—Ed C. Curtis and Robert Wilson will erect building to contain offices, etc.; J. C. Gresham, Archt., Greenville.

Alexandria, Va.—Mutual Ice Co. deferred erection of office building until spring; plans by W. Leon Clark, 220 S. Fairfax St., Alexandria, call for 2 stories; 32 x 40 feet; cost \$8000; construction by day labor.

Richmond, Va.—American Trust Co. is having plans prepared by Carneal & Johnston, Chamber of Commerce Bldg., Richmond, for building at 10th and Main Sts.; 1 story; 24 x 150 feet; brick; cost \$40,000; Mowbray & Uffinger, Constl. Archts., 56 Liberty St., New York.

Vicksburg, Miss.—First National Bank and City Savings & Trust Co. will construct mezzanine floor.

Sullivan, Mo.—Bank of Sullivan has plans by William Wedemeyer, Wainwright Bldg., St. Louis, for bank and office building; 2 stories; 31.5 x 90 feet; cost \$30,000; day work.

Tulsa, Okla.—Central National Bank will remodel interior of building, enlarge basement for workroom, etc.

Tulsa, Okla.—Gulf Pipe Line Co. will erect addition to building at 421 N. Cincinnati St.; cost \$4000.

Fort Worth, Tex.—Citizens' Amusement Co., H. G. Cotlar, Prest.; A. S. Mims, Mgr., will organize with capital of \$600,000 to erect 5-story theatre and office building; 50 x 200 feet.

Fort Worth, Tex.—William Capps will erect 3 additional stories to 5-story building at 5th and Throckmorton Sts. for offices; cost \$65,000 to \$75,000.

Churches.

Jefferson, Ga.—Baptist church will erect building. Address The Pastor.

Caudill's Branch, Ky.—Rockhouse Coal Co., Indian Bottom, Ky., will erect church, etc.

Regina, Ky.—Winston-Elkhorn Coal Co. will erect church building, etc.

St. Louis, Mo.—Central Baptist church, George E. Stevens, pastor, has plans by Ernest Hess, 3226 Magnolia St., St. Louis, for reconstruction of building at 2834 Washington Ave.; 1 story; stone; cost \$20,000.

St. Louis, Mo.—St. Michaels Russian church, Rev. Alexis Dankevitch, pastor, 1125 Hickory St., is having plans prepared by J. M. Dunham, Chemical Bldg., St. Louis, for church hall and parsonage; brick and stone; 1 story; 60 x 102 feet; cost \$30,000.

Durham, N. C.—Memorial Methodist church, Rev. H. M. North, pastor, will expend \$3000 for improvements to parsonage on Chapel Hill St.

Lockhart, Tex.—St. Ignatius Catholic church, Rev. Father

Zuber, pastor, will erect building to replace burned structure; brick; cost \$13,000.

Bowling Springs, Va.—Rev. W. G. Moore is interested in erection of church building.

Huntington, W. Va.—Institutional Baptist church, Rev. C. E. Wrenn, pastor, 802 Fourth Ave., will complete Sunday-school building; 3 stories; granite; bids on general contract; cost \$35,000; McMichael & Cain, Archts., Virginia Railway & Power Bldg., Richmond, Va.

Lakeland, Fla.—Presbyterian congregation, Rev. C. I. Stacy, pastor, will erect church building and manse; both structures of sandlime brick; metal roof; leaded glass windows; cost of former \$20,000; latter \$5000; plans by pastor; E. C. Angell, Supt.

Goldsboro, N. C.—Christian church will erect building on East Ash St.; 76 x 46 feet; brick veneer; composition roof; wood floor, elevated; cost \$6000; J. A. Taylor, 301 Daisy St., interested.

Wilmington, N. C.—Memorial.—City is considering erecting memorial, probably monument to cost about \$25,000. Address The Mayor.

St. George, S. C.—St. George Methodist Episcopal church receives bids until Dec. 19 to erect church and Sunday-school; 78 x 112 feet; brick; slate roof; wood joist floor construction; steam heat, direct radiation; plans and specifications at office Charles C. Wilson, Columbia, S. C. Address J. O. Horne, Secy. Building Committee, St. George.

Parkersburg, W. Va.—Memorial.—Board of Trade is considering erecting memorial to be known as Liberty Bldg.

Wheeling, W. Va.—Syrian congregation, Rev. Father Abraham, pastor, is considering erecting church building.

Tuscaloosa, Ala.—Presbyterian church, Rev. Chas. M. Boyd, pastor, plans to erect building; will inaugurate campaign for raising building funds.

Savannah, Ga.—United States Shipping Board, Washington, is arranging details for erection of dwellings, churches, school, theatre, etc., for employes of Terry Shipbuilding Corp.

Mayfield, Ky.—First Methodist church will erect building; construction of foundation progressing. Address The Pastor.

Jackson, Tenn.—Methodist church will erect parsonage; J. D. Johnson chairman of committee.

Bonham, Tex.—First Baptist church has plans by N. F. Marsh, Central Bldg., Los Angeles, Cal., for building; 2 stories; 96 x 124 feet; hollow tile; cost about \$60,000.

Paris, Tex.—First Methodist church purchased site at Lamar Ave. and Clarksville St. and will erect \$100,000 structure; construction to begin in early spring. Address The Pastor.

Antioch, Va.—Church of Brethren, J. A. Neff, Chrm. Bldg. Com., Beones Mill, Va., has plans by H. N. Miller, 2½ Campbell Ave., Roanoke, for building; 42 x 77 feet; 1 story; cost \$7000; day labor.

Richmond, Va.—Grace Methodist church, Dr. John F. Carey, pastor, will erect building at Stuart Ave. and Boulevard; probably stone; tile roof; hardwood floors; hot water heat; cost \$75,000 to \$100,000; architect and contractor not selected; construction to begin early part of 1919. Address S. E. Bishop, 721 Main St., Richmond.

Schools and Colleges.

Brooksville, Fla.—Brooksville School Dist. will call election on bonds to erect high school to replace Hernando High School lately noted damaged by fire; brick; roofing not decided; cost about \$40,000; date opening bids and other details not determined. Address W. O. Lemasten, Supt. of Schools, Brooksville.

Melbourne, Fla.—Brevard County School Board, S. J. Overstreet, Supt., Titusville, Fla., receives bids until Feb. 3, 1919, to erect school building; 2 stories; 183 x 80 feet, with auditorium extension 54 x 72 feet; reinforced concrete, frame and hollow tile; gypsum partitions; built-up asbestos and asphalt composition roof; cement floor construction except classrooms, which will be wood over concrete; steam heat; city electric lighting; cost \$60,000; plans and specifications at office A. E. Lewis, Archt., Miami, Fla.

Concordia, Mo.—St. Paul's College has plans by Chas. F. May, Merchants' Laclede Bldg., St. Louis, for living-room and gymnasium; 43 x 125 feet and 52 x 80 feet; 3 stories; brick and stone; wood and composition roof, reinforced floor construction; cost \$60,000.

Chapel Hill, N. C.—Victor S. Bryant and others of alumni and L. R. Wilson and others of faculty of University of North Carolina are interested in erection of Students' Activities Building as memorial to late Dr. Edward Kidder Graham, former president of university.

Greenville, S. C.—City School Commrs. are considering \$150,000 bond issue to erect high school, grammar school and other school buildings; P. T. Hayne, Chrmn. of committee to circulate petition.

Jackson, Tenn.—Methodist Conference and City of Jackson are having plans prepared for Woman's College buildings; estimated cost \$500,000; details not determined; construction to begin in early spring; E. R. Naylor, Prest., Woman's College.

Knoxville, Tenn.—University of Tennessee, Dr. Brown Ayres, Prest., will expend \$65,000 for erection of buildings, to include gymnasium and armory; 2 and 5 stories; 110 x 150 feet; administration building; also agricultural laboratory at experiment farm; all buildings brick and concrete; fireproof; Tennessee marble trim; Miller, Fullenwider & Dowling, Archts., 6 Michigan Ave., Chicago.

College Station, Tex.—Board of Directors, Agricultural & Mechanical College of Texas opens bids Jan. 11 to erect fireproof laboratory building for physics department and fireproof administration building for mechanical engineering department; former 65 x 130 feet; latter 60 x 90 feet; concrete frame and brick walls; composition roof and floor construction; vacuum steam heat; electric lights; combination freight and passenger elevator; appropriation available for physics building \$75,000; plans and specifications obtainable from Department of Agriculture, College Station; W. Scott Dunne, Archt., Dept. of Architecture.

Dallas, Tex.—School Board authorized William B. Ittner, Board of Education Bldg., St. Louis, to prepare plans for second unit of Oak Cliff High School.

Fort Worth, Tex.—City School Board purchased site on Forest Park Blvd., west of Frisco tracks, for erection of school building.

Covington, Va.—Industrial School & Farm for Homeless Boys, Rev. Floyd S. Rogers, Prest., will erect building; cost \$5000; Rotary Club, Petersburg, interested.

Graceville, Fla.—Trustees, Walter Williams, A. D. Burns, Horace Tindel and others, will erect school building to replace structure lately noted damaged by fire; 2 stories; brick; 7 rooms and auditorium.

Claxton, Ga.—City Board of Education plans to erect school building.

Kossuth, Miss.—Alcorn county voted \$6000 bonds to supplement funds available to erect school building to replace Agricultural High School damaged by fire. Address Secretary of Board of Public Instruction, Alcorn County, Corinth, Miss.

Laurel, Miss.—Johnson Consolidated School Dist. votes Jan. 3 on \$3000 bonds to erect, repair and equip school buildings; Glade Consolidated School Dist. votes same date on \$4000 bonds to erect, repair and equip school buildings.

Kinston, N. C.—Trustees of Caswell Training School will rebuild girls' dormitory noted damaged by fire at loss of \$35,000 to \$40,000; D. F. Wooten, Chrmn. of Committee, Kinston.

Sedalia, N. C.—Palmer Memorial Institute, Charlotte Hawkins Brown, Principal, will erect \$50,000 building to replace structure previously noted damaged by fire.

Heavener, Okla.—School Dist. No. 3 voted \$23,900 bonds for school building; S. J. Folsom, Clerk of School Board, Heavener.

Anderson, S. C.—Market.—Anderson Farmers' Market Association chartered with \$5000 capital by J. Wade Drake and B. J. Smith.

Dinwiddie, Va.—Dinwiddie County School Board, R. D. Temple, Chrmn., De Witte, Va., has plans by Carneal and Johnston, Chamber of Commerce Bldg., Richmond, for auditorium; 45 x 85 feet; frame; tin roof; wood floors; stoves; cost \$6500. Address Mr. Temple as above.

Savannah, Ga.—United States Shipping Board, Washington, is arranging details for erection of dwellings, churches, school, theatre, etc., for employes of Terry Shipbuilding Corp.

Germantown, Md.—Anne Arundel County School Board, Annapolis, Md., plans to erect 3-room school; 1 story; brick; cost \$4500; architect not selected; George Fox, Supt., Annapolis.

Natchez, Miss.—Adams County Board of Supvrs., H. B. Vaughan, Prest., consolidated school district and will erect \$4500 building.

St. Joseph, Mo.—Penn. School Township of St. Joseph County, J. L. Kennedy, 605 N. Main St., St. Joseph, will erect school building; 1 story and basement; 90 x 32 feet; cost \$22,000, including heating and plumbing; W. W. Schneider, Archt., 120 S. Main St., South Bend, Ind.

Lindsey, Okla.—Board of Education, C. L. Grimes, Secy., is having preliminary plans prepared by Tonini & Bramblet, Terminal Bldg., Oklahoma City, Okla., for school; 2 stories and basement; cost \$20,000.

Pauls Valley, Okla.—City voted \$75,000 high school bonds. Address The Mayor.

Tulsa, Okla.—Henry Kendall College Trustees plan improvement of college buildings.

Dallas, Tex.—Board of Education, C. M. Moore, Secy., is considering erecting school building on Reiger Ave.

Dwellings and Apartments.

Fort Myers, Fla.—C. A. Berry will erect bungalow in Poinciana Park.

Oldsmar, Fla.—G. C. Nally has plans by Mr. Keath for dwelling on Elton Rapids Ave.; 26 x 30 feet; frame; composition slate roof; pine floors; fireplaces; electric lights. Address owner.

Tampa, Fla.—Bruce's Tampa Highlands Syndicate, James E. Bruce, Prest., 811-15 E. 49th St., Chicago, purchased 13,000 acres of land; divide property into 10, 20 and 40-acre tracts; erect dwellings, clubhouse, etc.; will engage architect and let contracts soon after first of year; complete surveying and planning property within 2 or 3 weeks.

Quitman, Ga.—W. A. Walker will erect residence; 2 stories.

Savannah, Ga.—Spalding Construction Co. will erect bungalow; 1½ stories; also residence; 2 stories; frame.

Caudill's Branch, Ky.—Rockhouse Coal Co., Indian Bottom, Ky., will erect 40 miners' houses, church, school and hotel; contract let by Jan. 10.

Lynch, Ky.—Hubbard-Walker Co. will erect 20 miners' houses; contract let at once.

Regina, Ky.—Winston-Elkhorn Coal Co. will erect 50 miners' houses, Y. M. C. A., church and school; contract let at once.

Baltimore, Md.—Acme Building Co., Equitable Bldg., will erect 2-story dwellings on Whittier Ave.; 16 x 40 feet; brick; cost \$3000 each; bids on separate contracts.

St. Louis, Mo.—H. A. Schoknecht, 7131 Washington Ave., will erect residence; 2 stories; brick; cost \$6000; construction by owner; day labor.

St. Louis, Mo.—J. W. Kelley, 2613 E 29th St., will erect 4 dwellings on College and Benton Sts.; 1 story and basement; 22 x 24 feet; stucco; shingle roof; cost \$2500 each; construction by owner.

Tulsa, Okla.—K. M. Vaughn will erect residences at 421 N. Rosedale St. and 1165 N. Main St.; cost \$3000 each.

Tulsa, Okla.—A. S. Burrows will erect \$3000 residence.

Tulsa, Okla.—M. A. Harrison will erect dwelling; cost \$3000.

Nashville, Tenn.—James H. Yeaman, City Supervisor of Buildings, will rebuild dwelling at 916 Douglas Ave. reported damage by fire at loss of \$7000.

Houston, Tex.—Houston Land Corp. is erecting 15 dwellings; contemplates erecting about 100 during 1919; stucco on metal lath or brick veneer; tile or cypress shingle roof; subfloors of shiplap with hardwood surface; about 25 per cent to have hot-air heating plants; some heated by electric radiators; cement sidewalks; cost \$4000 to \$20,000 each.

El Paso, Tex.—Mayfield Building Co. will erect 2-story brick residence and 1-story bungalow in Manhattan Heights; cost \$4950 and \$2950, respectively.

Fort Worth, Tex.—E. L. Maxwell will erect residence; 5 rooms; cost \$2500.

Fort Worth, Tex.—O. Harrison will erect dwelling; cost \$2500.

Fort Worth, Tex.—L. B. Jackson will erect 5-room dwelling; cost \$2500.

San Antonio, J. De Puy will erect 5-room dwelling; cost \$3500.

Kelly, La.—J. H. Hanchey is reported to erect number of dwellings.

Baltimore, Md.—M. Filmore Carter, Frederick Ave. opposite Melvin Ave., purchased block of ground at Windsor Ave. and 10th St. and will erect 25 daylight dwellings; 22 x 34 feet; cost \$5000 each.

Baltimore, Md.—J. Hurst Purnell, 32 Roland Ave., will erect 7 dwellings at 1206-18 Longwood St.; ornamental brick construction; six, 21 x 33.6 feet; one 23 x 33.6 feet; cost \$17,500; George Dessel, Archt.

Washington, D. C.—Charles E. Wire, Inc., 1413 H. St., N. W., will erect residence at 212 Rittenhouse St.; 2 stories; frame; also erect building at 303 Rittenhouse St.; 2 stories and attic; frame; latter to cost \$12,000; plans and construction by owner.

New Smyrna, Fla.—Chas. H. Sams will erect bungalow.

San Antonio, Tex.—Paul O'Brien will erect 5-room dwelling.

Richmond, Va.—Thomas L. Moore will erect dwelling at "Mooneland Farm" to replace structure noted damaged by fire at loss of \$50,000; details not decided for several months.

East Gulf, W. Va.—East Gulf Coal Co. will erect 150 dwellings for employees.

Newport News, Va.—Mike Suttle, 629 Twenty-fifth St., will erect store and apartment building.

Richmond, Va.—T. B. Johnson has plans by Hallett & Pratt, Mutual Bldg., Richmond, to erect addition and alter 3-story building for apartments at 1103 Grove St.; brick; cost \$6000; architects taking bids on separate contracts.

St. Joseph, Mo.—G. E. Sampson, R. F. D. No. 4, will erect residence 4 miles from St. Joseph; 2 stories and basement; 30 x 40 feet; brick; stone trim; tile roof; cost \$10,000; construction by owner; day labor.

Bartlesville, Okla.—Empire Building & Loan Association is reported having plans prepared by Walton Everman, Bartlesville, for 50 dwellings; 1 and 2 stories; brick and stucco; composition roof; cost \$4000 each; architect receiving bids; 150 more to be erected later.

Tulsa, Okla.—A. M. Gent will erect \$4000 bungalow in Hillcrest Ridge.

Chattanooga, Tenn.—Mary E. Handman will remodel building on East 8th St.; cost \$4000.

Bristol, Tenn.—A. J. Edwards will erect about 50 dwellings in different cities of Tennessee and Virginia; 4 to 6 rooms; bungalow style; concrete construction; metal, tile or composition roof; concrete or wood floors; electric lights; cost \$1000 to \$1500 each; Archt. not selected; date opening bids not determined; construction by owner.

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Built for Year-'Round Service



11th YEAR

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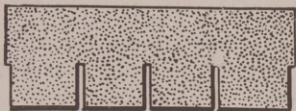
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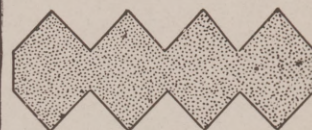
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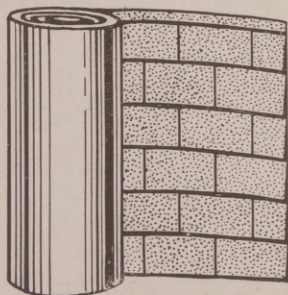


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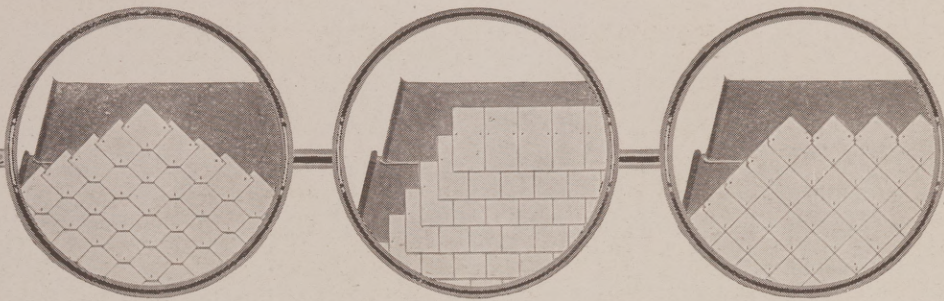


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The roof of your house is its most vital part—make it the strongest by using Ambler Asbestos Shingles.

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Keasbey & Mattison Company, Dept. S.A.B.M. 1, Ambler, Pa., U. S. A.

Manufacturers of Ambler Asbestos Shingles, Asbestos Corrugated Roofing and Siding, 85% Magnesia Pipe and Boiler Covering, and Asbestos Building Lumber.



Big Engineering Concerns Prefer the

FEDERAL

CONCERNS like the Shreveport Roofing and Metal Works, of Shreveport, Louisiana, find that the Federal best suits their needs. They appreciate the rugged stamina, the economy—the ease of operation.

A Federal will prove the solution of your haulage problem. It will do the hardest kind of work—every day in the year—and the low cost will surprise you.

Write us and we will send you the monthly magazine "Traffic News"—a publication for the truck owner and buyer.

Federal Motor Truck Company
72 Federal St. Detroit, Mich.

Another
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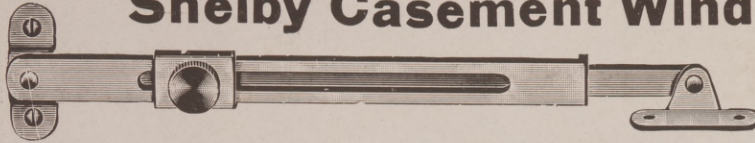
1½ ton Federal which is giving perfect service for the Shreveport Roofing and Metal Works, of Shreveport, La.

One
to
Seven
Tons



Return
Loads
will
cut
your
costs

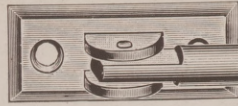
Shelby Casement Window Adjusters



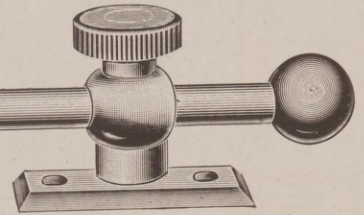
No. 1

No. 1 This Adjuster is universal for right or left hand windows opening in or out. Will hold the window positively locked in any position. Can also be used as a friction stay. It is also furnished with brackets to be used where attachment to window casing or trim board is necessary.

No. 2 This Adjuster is for right or left hand windows opening out. It is very strong and has $\frac{3}{4}$ inch wrought steel rod made in 8, 10, 12 and 15 inch lengths.



No. 2

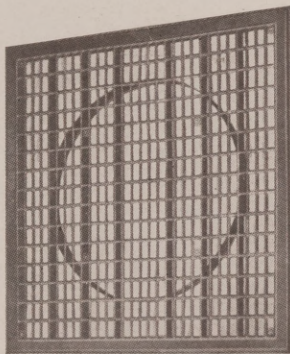


Made at Shelby, O.
Sold Everywhere.

The Shelby Spring Hinge Co.,

Shelby, Ohio

"H & C" No. 260 GRATINGS FOR PIPELESS FURNACES



FRONT VIEW
CLASS 260

Made to meet the conditions as they obtain in the installation of a one pipe furnace.

Strong, Durable.

Face is readily detached from frame.

Do you wish to learn of a line of Registers for Warm Air Heating, Ventilators and Grilles which for beauty of design, durability of finish and strength are not excelled? Then write

For Catalogue 16-S

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Specialists in Floor Construction

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**Over 11,000,000 sq. ft. Installed Under Bond and Guarantee in
Factories, Warehouses and Industrial Plants**

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Estimates Furnished Upon Request.

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MOBILE, ALABAMA

POTTRY TILE AND BRICK

Made from scrap whiskey jugs and shale

80 STOCK SHAPES IN THREE DIFFERENT TEXTURES.
Write for samples and cuts of artistic fireplaces.

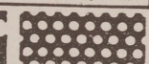
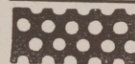
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SCREENS OF ALL KINDS

Chicago Perforating Co.

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Tel. Canal 1459 CHICAGO, ILL.



"IT TAKES THE BEST TO MAKE THE BEST"

*In the CLIMAX all the skill we combine
That is best in the shop and in the mine.*

*Such a wonderful heater; such an all around beater;
Is it any wonder everybody says they are fine?*

Testimonials from satisfied customers sent on request.

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THE TAPLIN-RICE-CLERKIN CO., Akron, Ohio

"The Furnace, Stove and Range Folks of Akron."

Sand's Aluminum Levels

Always Tell the Truth

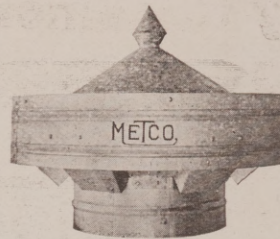
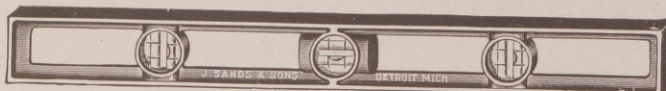
The standard of accuracy. And not only the most accurate—but easiest to read, even in the dark. Never rusts—cannot warp, split or crack—and are easily handled.

The lightest levels made—strong and durable because the greatest strength is placed where most needed. Ask your dealer to show you these levels, and also write for our circulars showing full size levels.

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Originators of
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VENTILATOR !

ARE THE RESULT OF
LONG SCIENTIFIC STUDY
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IN GENERAL USE
ARE NOW

UNIVERSALLY INDORSED BY ARCHITECTS,
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Light & Air

may be admitted at
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Venetian or Sliding Blinds

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Burlington, Vt.



FRENCH'S

Builders appreciate French

Quality First

Standard Colorings
for Interior and Ex-
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Cements.

Special Architectural
Colors to Order.

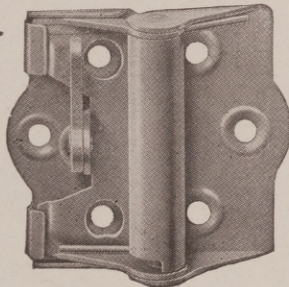
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PHILADELPHIA.

JIFFY →

Just the hinge your clients have been looking for. Once installed, the Jiffy Hinge enables the housewife to put up or take down the screen doors or windows without the use of screws or tools of any kind.



Ask Your Dealer to Show You a JIFFY HINGE

They are inexpensive, made in a variety of finishes and are sure to make a neat, satisfactory job. If your dealer cannot supply you, write for samples and prices.

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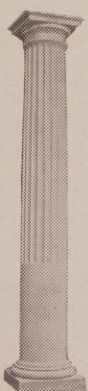
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We will buy your couplings in any quantity, large or small. Write us what you have.

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Koll's Patent Lock-Joint Stave Wood Columns.

For Exterior and Interior Use.

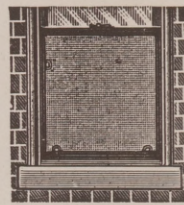
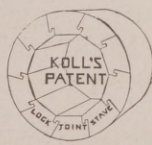
When writing enclose 10 cents and ask for
Catalog "S-40."

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Baker Improved Metal Frame Window Screen

Patented July 9, 1901.

The Very Latest and Best.

**STRONG, DURABLE, NEAT,
ABSOLUTELY PERFECT**

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MORTAR COLORS.



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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Better than wood and less expensive. Fireproof, indestructible, light and open, yet strong and stiff. Bench is movable in location, with large open bin space adaptable to requirements. Save labor and material.

Replace old wood legs with new iron ones.

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GARWOOD, N. J.

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.

Lombard Foundry, Machine and Boiler Works and Supply Store

Capacity for 300 hands.

Augusta, Ga.

This Is What He Said

"That furnace saved me \$50 in coal last winter and heated my house to perfection. Better than two stoves ever could. The best thing about it was, there was no heat given off in the cellar to spoil fruit and vegetables."

He was a farmer and the furnace an

ANDES ONE PIPE

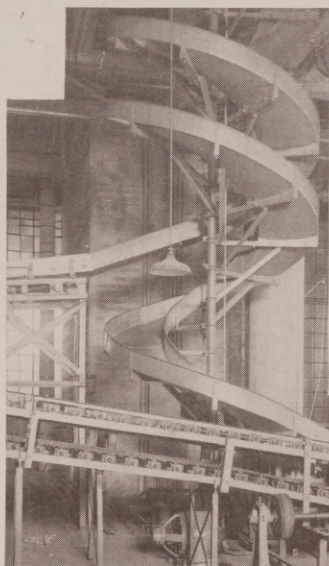
He came in to get a furnace clock in order to save more dollars and to get more comfort this winter. You see the clock will turn on the drafts so that he would have a warm house to dress in. He was tickled to death, you can bet.

This furnace burns wood or gas as well as coal, in fact anything. Thousands have been using them and feel the same way. Some feel better. One church saved half its coal bill. You can read the letters in the Andes One Pipe circular and also learn all about the furnace, how it works, the principle, construction and all. It's mighty interesting. Send for it.

Phillips & Clark Stove Co., Inc.

Established 1868.

Geneva, N. Y.



With Help Scarce
AND
Wages High
NOW
Is the Time
when the need
for our
**LABOR - SAVING
SPIRAL CHUTES
VERTICAL LIFTS
AND
MERCHANDISE
CONVEYORS**
is imperative

We are
glad to
advise with
architects or
builders or
direct with
their clients
and furnish

complete structural details and drawings to insure satisfactory results for the simplest or most elaborate requirements.

Through long experience we have learned how to combine every form of merchandise conveyor so as to obtain the most practical results.

When no standard form of conveyor is adequate, we design special machines.

When you want information on conveyors, write us. We can help you.

The Haslett Spiral Chute Co.

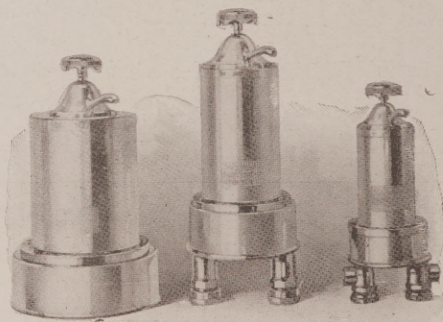
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20th and Allegheny Ave.
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Southern Office
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LEONARD Thermostatic Valves

"Leonard" valves predetermine and maintain water temperatures regardless of fluctuations in pressures or temperature supplies.

This is accomplished by a solid metal thermostat, which operates a set of balanced valves. Hot water enters valve on left-hand side, at any pressure, and may be taken from any hot water source. Cold water enters valve on right-hand side, and may be taken from the city mains, at any pressure.



They are anti-scalding and anti-chilling, and are used extensively for the control of bathing fixtures in hospitals, private homes, schools, sanitariums, and commercial uses.

"Leonard" valves are manufactured in three sizes, Models B-10, B-40 and B-120.

Architects should familiarize themselves with these valves and their many uses.

Write us for descriptive matter and price list.

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A Big Surprise Awaits You— FREE

Send for large, costly, most comprehensive and elaborate catalog of its kind ever issued. Vitally important to Architects, Contractors, Carpenters, Builders, showing correct, up-to-the-minute methods of doorway construction and proper hardware to handle any requirement. Profusely illustrated; also valuable details—request it TODAY. When building, submit your plans or an outline of your needs to us. Our engineering Service is at your disposal. No obligation whatever.

Catalog No. 85.

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For light structural building work;
such as

ANCHORS, WINDOW GUARDS, CORNICES,
SIDELIGHTS, ROOFING, ETC., ETC,

HOT DIP PROCESS GALVANIZING

GET OUR PRICES

PROMPTEST DELIVERY for EXTRA GOOD WORK

The Florida Metal Products Company

JACKSONVILLE, FLORIDA

Carthage Marble & White Lime Co.

PRODUCERS OF

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FOR INTERIOR WORK

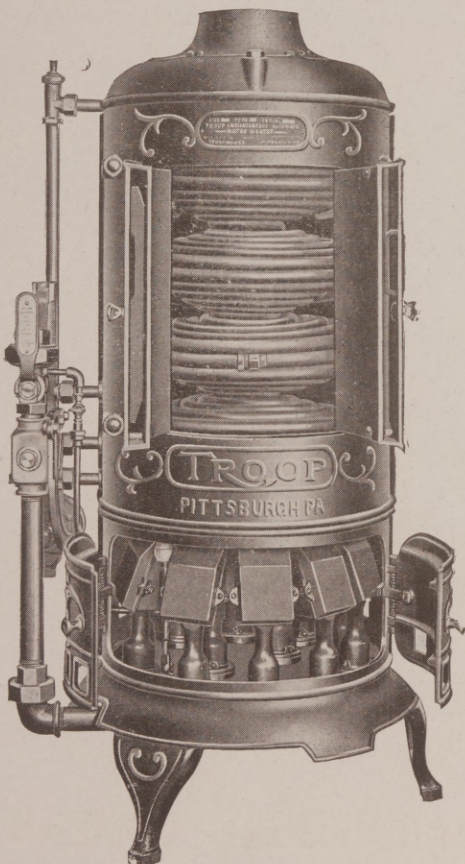
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SAWED, PLANED, TURNED and CUT STONE for
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Quarries, Mills and Finishing Plant at

CARTHAGE, MO.

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Made in all Sizes—Easy to Connect.

UNLIMITED HOT WATER NIGHT OR DAY

BY SIMPLY TURNING THE FAUCET ANYWHERE IN THE HOUSE.

No Lighting of Fires,

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No trouble of any kind if you have a

TROOP

Automatic Water Heater.

This masterpiece of automatic simplicity heats the water, regulates the temperature and shuts off the gas when you close the faucet. Write for circulars and current prices.

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Here is a Glazing Composition that will—



Adhere tightly to iron, steel, wood, glass, stone or concrete. Make an elastic joint—tight yet indefinitely flexible, preventing glass from cracking.

Guaranteed to withstand heat, cold, rain or extreme climate conditions, without chipping or peeling.

KUHLS' ELASTIC GLAZING COMPOSITIONS

is used for bedding and glazing all classes of glass construction and is unequalled for securely setting floor or wall tile. Also supplied in shades to match for pointing up stone work, terra cotta, granite, etc.

Complete literature on this exceptional product together with testimonials from such prominent architects as Cass Gilbert, also the Lackawanna and Pennsylvania Railroad, will be mailed on request.

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ELMCO Handy Rafter Markers answer your need for a small building job on your farm or anywhere. You don't need an expert to mark out your rafters. With a set of ELMCO markers your twelve year old boy can mark and cut your rafters to fit.

The ELMCO Handy Rafter Markers

(Patent Applied For)

Give you every angle and length you want for the ordinary small farm building. You only need a pencil and this set of markers to lay out your rafters the correct length—at any pitch you want. Saves your money—and no time wasted. Order a set of ELMCO Handy Rafter Markers for your Fall building job.

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SCHOOL SUPPLIES

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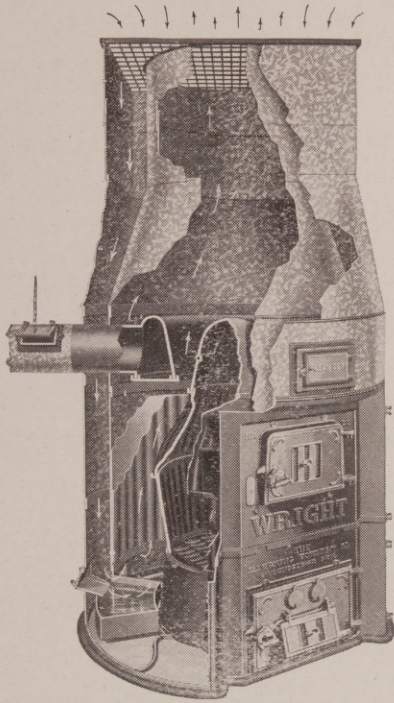
Erasers, Floor Oil



The Southern Desk Company

Box 13

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**EXTRA LARGE GRILLS
TRIPLE INNER LINING
SPECIAL HUMIDIFIER**

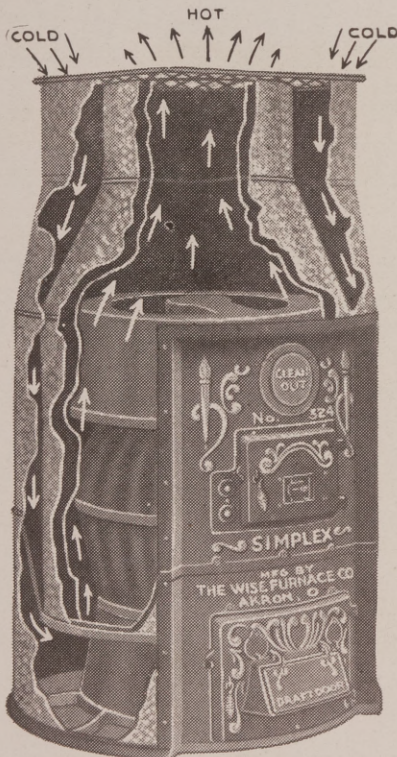
The New Way Pipeless Furnace

No walls to cut. No pipes to run. No dirt. More heat. 35% less coal. Easy to install. No heat in basement. Thousands in operation and giving satisfaction. No danger of dealer losing profits by underestimating the amount of labor and material required, as furnace is shipped complete except smoke pipe.

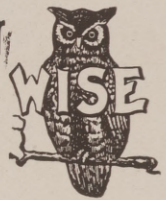
Our Agency Proposition offers unlimited possibilities and big profits. Reserve your territory now.

The Mahoning Foundry Company

Youngstown, Ohio



The Simplex Pipeless Warm Air HEATER



is a simplified heating system that combines efficiency, economy, ease of operation and installation. It is especially desirable because of its eliminating numerous warm air pipes in the basement and within the partition walls, and the special cold air duct, combining the whole system into a DUPLEX CASING AND REGISTER directly over it, that provides a cold air intake and warm air discharge, eliminating all friction and loss of heat, thus saving a considerable amount of fuel and delivering a maximum amount of heat.

SIMPLEX PIPELESS FURNACES can be installed in either old or new houses and with our directions, need no previous installation experience. PIPELESS FURNACES will increase the pleasures of life and rob the winter of its terrors.

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The Largest Exclusive Furnace Manufacturers in the United States.



"A Northwestern Ohio Finishing Hydrate"

Let's solve this Hydrate problem right now. Make certain of getting a fine, pure white, easy working and regular product by ordering

MONARCH

We guarantee every pound.

Write today for prices and information.

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ARISTOS "COPPERWELD" NAILS

for Copper, Slate, Tile

and Shingle Roofs

and wherever steel would Rust.

"Copperweld" Nails made of copper-clad steel are stronger, stiffer, better than copper nails, drive without bending, and last just as long. The price per pound is much less than for copper and there are more nails to the pound. Prompt shipment from stock.



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13



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Vegetable Glue, Etc.

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Emancipate yourself from the use of corrosive and ill-smelling ink and adhesives and adopt the Higgins Inks and Adhesives. They will be a revelation to you, they are so sweet, clean, well put up, and withal so efficient.

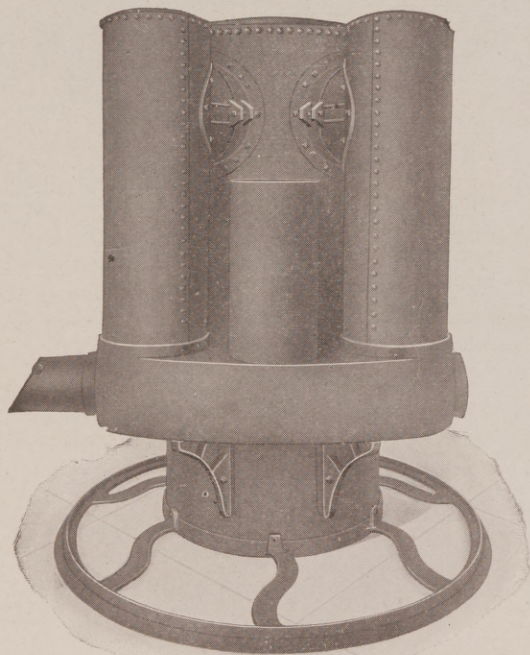
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TRADE NAME REGISTERED



Back of the **FRONT RANK** Warm Air Furnace is 29 years of integrity, fair dealing, and thorough, conscientious attention to the warm air furnace business.

The back of the **FRONT RANK** Furnace tells the story---no other furnace has a larger fire travel---the radiators are of heavy steel, securely riveted and absolutely gas tight. There are other important features that make it advisable for you to

Buy the FRONT RANK

For Residence, Church, School or Store

Our latest catalog tells all about the **FRONT RANK** Warm Air Furnaces---ask us to send you a copy. Plans furnished free.



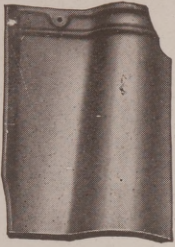
HAYNES-LANGENBERG MFG. CO.

4049 Forest Park Boulevard

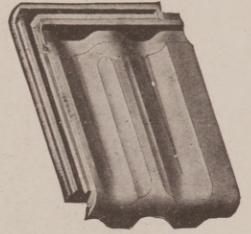
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Mound City Roofing Tile Company

St. Louis, Mo.



**Manufacturers of Modern Shapes of
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Made in all colors

Glazed and Unglazed

Send for Catalogue

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FOR

Passenger and Freight Service

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Drum Type

Push Button



Automobile

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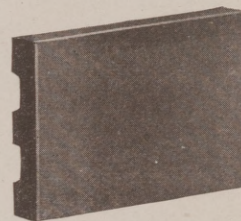
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WE MAKE ALL KINDS OF ELEVATORS

ANY SPEED AND CAPACITY DESIRED

The Warner Elevator Mfg. Co.

CINCINNATI, OHIO.

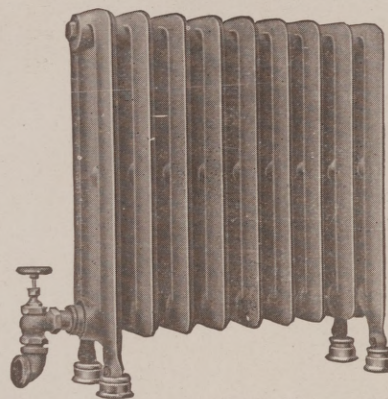


**QUARRY
TILES
For Floors**

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

**THE UNITED STATES ROOFING TILE CO.
PARKESBURG, W. VA.**

ADJUSTABLE FOOT



The Jennison Adjustable Foot jacks it up in a jiffy.

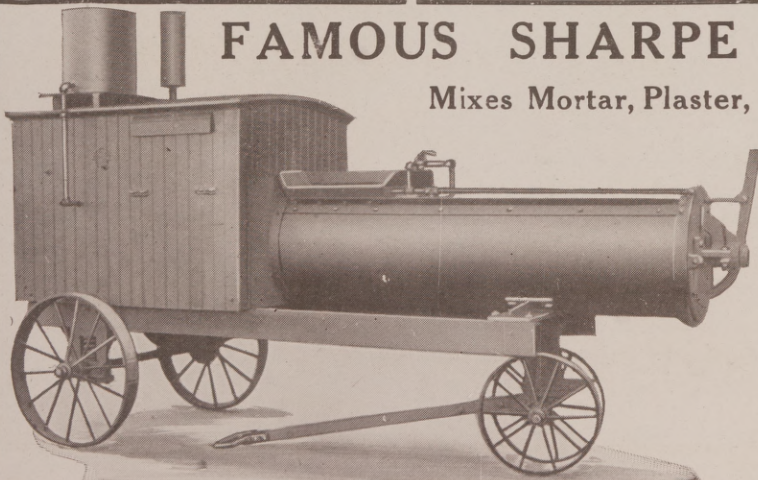
Simply the twist of your wrist unscrews it—raises it or lowers it as you desire.

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

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FAMOUS SHARPE MORTAR MIXER

Mixes Mortar, Plaster, Cement, Fire Clay or Concrete.



Will Supply 50 to 75 Bricklayers.

Belt Pulleys to Operate Other Machinery.

Run for 30 cents per day.

The Result of 20 Years Experience.

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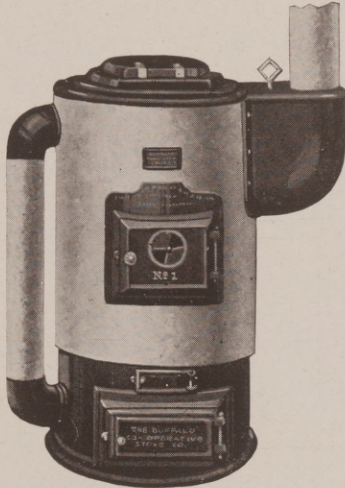
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Ready for use just as soon as placed on the ground or job. No trenches to be dug, no plumbing to be done. Sanitary—Efficient—Economical.

THE SANOTYPE TOILET INCINERATOR

Requires no fixtures. It is only necessary to make chimney or smoke pipe connection. Simple to install and operate. No chemical required.



Operates with wood, coal, or coke. All refuse and waste is reduced to clean ash.

The Sanotype is used the same as an ordinary water closet. It does not have to be fired until it is filled with refuse. No odor from accumulating waste.

Catalog giving details free.

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Department 7.

BUFFALO, N. Y.



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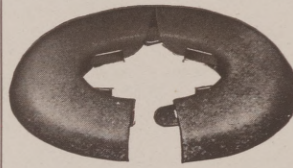
Let us send you "Concrete Highways"; it is free. Also "Concrete in the Country," devoted to the use of Portland Cement on the farm.

DIXIE PORTLAND CEMENT CO.

James Building, Chattanooga, Tenn.
CONCRETE FOR PERMANENCE

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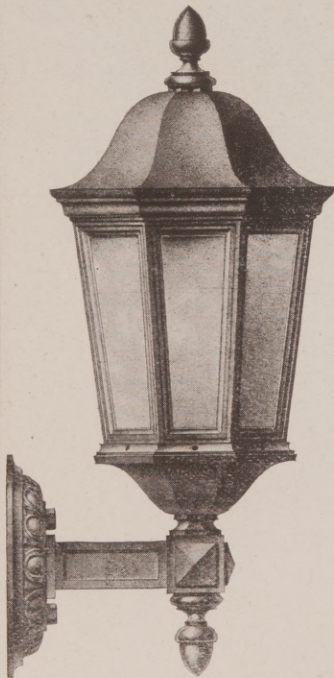
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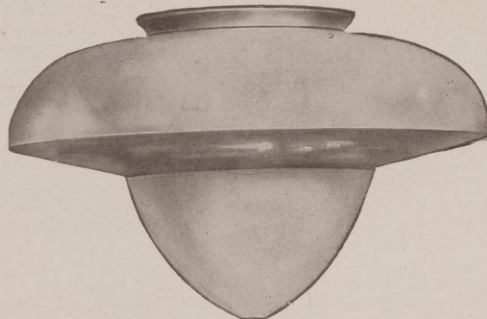
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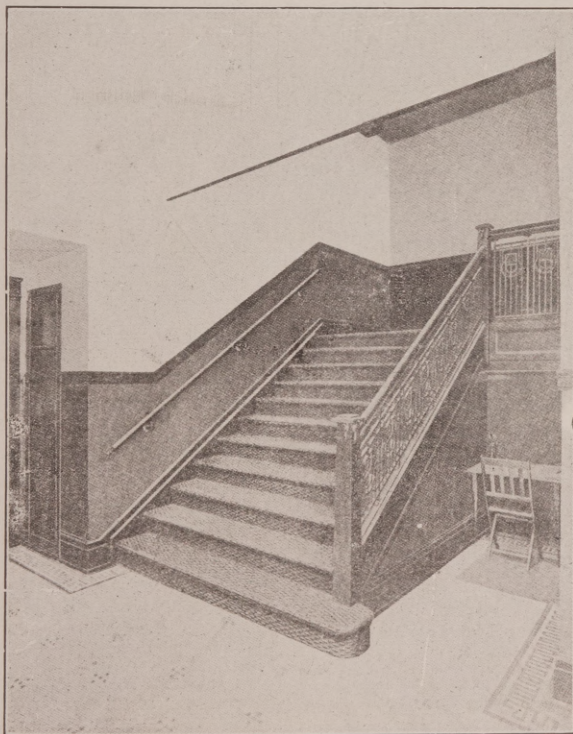
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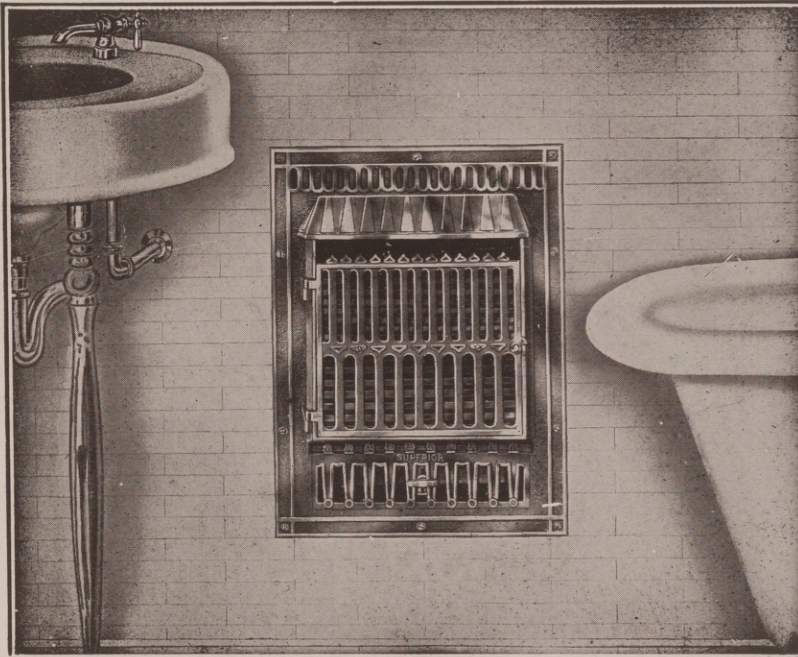
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Superior Bathroom Heater in Use with Tiled Bathroom.

from any danger whatsoever from fire, the body of the heater being lined both inside and outside with heavy asbestos, as well as having a large circulating cold air space around the inner frame which contains the burner. The inner frame also is covered with heavy asbestos. The burner, which is made of Imported Lava Tips, is fitted with an adjustable check for regulating the combustion on the different pressures of gas. No air mixer is used, as the gas comes in contact with the air through very small lava tips; it mixes and purifies itself, leaving no odor from the gas whatever. It is made so that the heat from the gas jet causes the air furnished to be drawn from the floor through the fender and pass up over the flame, discharging itself back into the room, thus creating a continuous circulation of pure air through the room at all times.

This heater is equipped with lower corrugated copper reflectors and an upper corrugated deflector, also, upper reflector and baffle plate on the cast door for directing the products of combustion back to the point where it comes in direct contact with the air drawn from the floor, which greatly purifies it. The deflector plate not only directs the heat, but hides the gas jets and reflects the light down upon the lower reflectors, giving a very luminous and pleasing effect. This method of heating a bathroom is not only convenient, but very economical and safe, doing away with the objectionable bathroom stove.

The Superior Bathroom Heater not only ornaments the bath-room handsomely but it quickly heats it to just the desired temperature at the least expense. By its use it is possible to bathe and complete the toilet in perfect comfort without firing an expensive furnace which too frequently destroys the delightful coolness so much appreciated in all other parts of the house during warm weather. In fact, it is a necessity in every up-to-date modern home.

Leading architects and designers throughout the United States and foreign countries always specify "Superior" Bathroom Heaters when the best is desired. The front is heavily plated and polished as handsomely as a watch case.

This heater is made for either outside or inside connection, and whenever neither kind is specified in the order, the kind for outside connection will invariably be sent, as that style is generally preferred when the gas line is not inside the wall. In plan for new house the pipe should be about 5 inches to the left of center of opening and come up just as high as the bottom of same, for convenience in setting.

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Be careful to specify finish and to state whether outside or inside connection is wanted when ordering.

Complete with valve and adjustable check. Bright Brass, Nickel or Japanese Bronze Finish.

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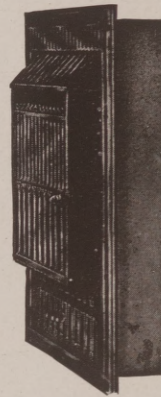
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NO DANGER FROM FIRE

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General Offices and Factory: Corner Said and Magnolia Streets, North Side.



U. S. Pat. June 28,

1910

Side View

Side of Cast

Front:

14 ins. wide

18 ins. high

Size of Body

of Heater:

12½ ins. wide

16¼ ins. high

4½ ins. deep.

For Natural and Artificial Gas

THE Superior bathroom heater differs materially from any other device for bathroom heating. The front is of Colonial design, cast iron heavily plated, which is fitted with a door for convenience in lighting without danger of being burned. It is constructed to be used in the regular wood partition, tiled or plastered wall of the bathroom and has the appearance of a hot air register, set 14 or 18 inches from the floor.

It is flueless and odorless, as the flames come in contact with nothing but air, (thereby eliminating asbestos and other artificial substances commonly used in all other types of heaters, which become soiled and unsightly.) Its construction is such as to make it entirely free inside and outside with heavy asbestos, as well as having a plate on the cast door for directing the products of combustion back to the point where it comes in direct contact with the air drawn from the floor, which greatly purifies it. The deflector plate not only directs the heat, but hides the gas jets and reflects the light down upon the lower reflectors, giving a very luminous and pleasing effect. This method of heating a bathroom is not only convenient, but very economical and safe, doing away with the objectionable bathroom stove.

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Just as practical

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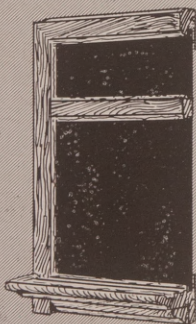
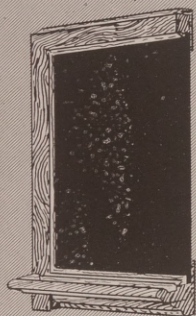


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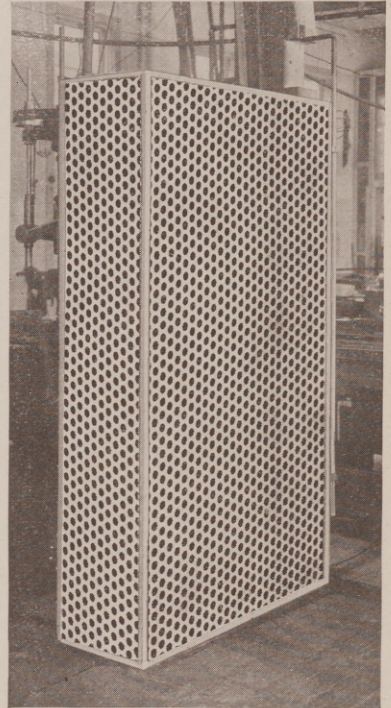
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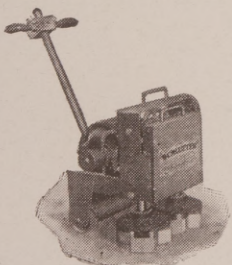
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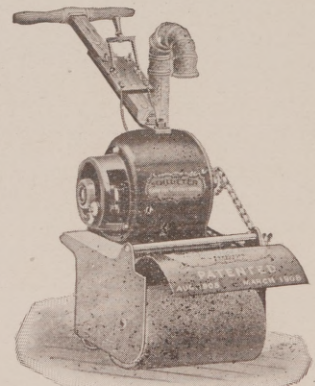
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Alphabetical Index to Advertisers

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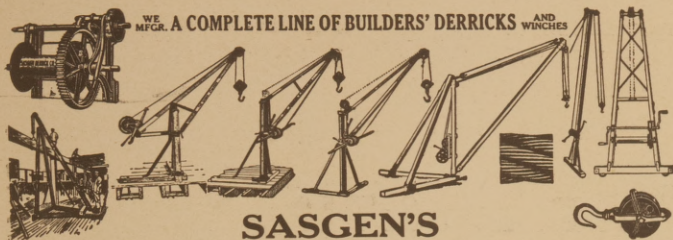
A A. & J. Mfg. Co. 63 Allith-Prouty Co. 65 Amer. Window Glass Co. 75 Aerotherm Engine Co. 19 American Ballast Co. Front Page American Elevator & Mach. Co. Front Cover Atlanta Terra Cotta Co., 58 and Front Page Augmore Mfg. Co. 2	F Federal Motor Truck Co. 60 Fishel & Marks Co. 25 Flexotile Floor Co. 2 Flint & Walling Mfg. Co. 14 Florida Metal Products Co. 65 Franklin Plumbing & Heating Co. 28 French & Co., Samuel H. 63	M Mahoning Foundry Co. 67 Majestic Co. 26 Manhattan Dial Mfg. Co. 16 Martin Rocking Fifth Wheel Co. 6 Martin Co., L. 9 Meyers, The Fred J. Mfg. Co. 79 Meyer & Bro. Co. 76 Monticello Auto Radiator Co. 74 Merchants & Evans Co. 55 Moran & Hastings Mfg. Co. 70 Moss Downer Lumber Co. 21 Moss Iron Works, J. E. The. 5 Mound City Roofing Tile Co. 69 Murray Roofing Co., The. 85	S Samson Cordage Works, Front Page Sands & Sons, J. 62 Sanitary Appliance Co. Front Cov. Sasgen Derrick Co. 79 Scaife & Sons Co., Wm. B. Front Page Schilling, Geo. O. 2 Schlueter, M. L. 77 Security Lightning Rod Co. 22 Sharon Hardware Mfg. Co. 79 Sheet Metal Mfr. Co. 62 Shelby Spring Hinge Co. 61 Sheldon Slate Co. Back Cover Silver Lake Co. 14 Simon Ventilator Co. 4 Simplex Sales Co. 79 Simplex Mfg. Co. 2 Single Faucet & Flush Valve Co. Back Cover Small Quarries Co., A. T. 10 Smyser-Royer Co. 70 Snead Architectural Iron Works 78 Southern Desk Co. 66 Southern Gypsum Co. 58 Standard Iron & Wire Works .. 9 Spangler Co., Frank 5 Standard Elec. & Elevator Co. 58 Stannard Mfg. Co. 4 Stearns Register Co. 13 Stover Mfg. & Eng. Co. 7 Structural Slate Co. 71 Superior Mfg. Co. 74
B Bacon Heater Mfg. Co. 10 Baker, W. J. 63 Bajohr Lightning Conductor Co., Carl 22 Barrett Co., The 30 Beaton & Carbin Mfg. Co. 70 Beaver Refrigerator Co. 3 Belmer, H. Co. 79 Bergen & Lindeman, Inc. 21 Boston Economy Lamp Division 21 Bowling Green & Green River Quarries Co. 4 L. B. Brass Co. 19 Brandell Co., The 3 Brecht Co. 15 Brown Company 5 Budnick Mfg. Co. 2 Buffalo Co-Operative Stove Co. 70 Builders Material Supply Co. 61 Bullock Mfg. Co. 9 Burlington Venetian Blind Co. 62	G Garwood Bronze & Iron Works. 63 Globe Plaster Co. 25 Grainger & Co. 25 Granolithic Co. 79 Gurney Heater Mfg. Co. Front Page. Griner, O. Front Page	N Nat. Cast Iron Pipe Co. 25 National Mosaic Tile Co. 19 National Lime & Stone Co. 68 Natural State Blackboard Co. 75 Newman Mfg. Co. 25 North Shore Ferneries Co. 3	T Taplin, Rice, Clerkin Co. 62 Taylor Lumber Co., The S. K. 62 Troop Mfg. Co. 65 Tuttle & Bailey Mfg. Co. 6
C Cadillac Lumber Co. 8 Cahill, Edward Front Page Cannelton Sewer Pipe Co. 9 Carthage Marble & White Lime Co. 65 Carter Electric Co. 56 Castle & Co., A. M. 73 Colonial Fire Placg Co. Front Page Chattanooga Roofing & Fdy. Co. 26 Chattanooga Paint Co. 63 Chicago Mirror & Art Glass Co. 27 Chicago Perforating Co. 62 Church, Isaac. Back Outside Cover Cincinnati Iron & Steel Co. 22 Back Cover Commonwealth Motors Co. 69 Conklin-Armstrong Terra-Cotta Co. 14 Conrad Wood Preserving Co. 24 Consolidated Stone Co. 6 Cook & Laurie Gravel Co. 70 Cortright Metal Roofing Co. 3 Co-Operative Fdy. Co. 29 Cornell Iron Works 21 Crampton-Parley Brass Co. 8 Crumb, Wallace B. 7 Cudell, F. E. 25	H Hall's Safe Co. 37 Hammond Heating Co. 9 Hartman Ingot Metal Co. 13 Hart & Cooley Co. 61 Hartmann-Sanders Co. 63 Hawley Down Draft Fur. Co. Front Page Haynes-Langenberg Co. 68 Haynes Selling Co. 14 Haslett Spiral Chute Co. 64 Heppes-Nelson Roofing Co. 57 Herrick Refrigerator Co. 15 Higgins & Co., Chas. M. 68 Hires Turner Glass Co. 15 Hoadley & Sons Co., J. 4 Hood, B. Miffin Co. 62 Hunt Co., C. W. 2 Hutchison Vapor Heating Cor. 22	O Oak Flooring Mfgs. Assn. 20	U U. S. Expansion Bolt Co. 3 United States Roofing Tile Co. 69 U. S. Cast Iron Pipe & Fdy. Co. 10
D Danzer Metal Works 4 Detroit Sanitary Supply Co. 10 Dixie Portland Cement Co. 70 Duplex Truck Co. 56	I Ideal Tool Works 14 International Steel & Iron Co. 13 Iona Ventilator Co. Front Page Ives Co., H. B. 24	P Page Steel & Wire Co. 68 Parker, A. A. 14 Penn. & Ky. Fire Brick Co. 15 Peerless Blue Print Co. 15 Phillips & Clark Stove Co. 64 Phoenix Glass Co. 71 Pipe Railing Construction Co. 74 Polk-Genung-Polk Co. 72 Pruden Co., C. D. 21	V Vendor Slate Co. 73 Victor Brass Mfg. Co. 14 Vincent, George 21
E Economy Drawing Table Co. 19 Eddy Engineering Co. 8	J Jennison Co. 69	R Randall Tramrail Co. 26 Reliance Fireproof Door Co. 9 Rising & Nelson Slate Co. Front Cover Roberts Filter Mfg. Co. 7 Rock City Mfg. Co. 63 Roper Lumber Co. Front Page Russell & Co., W. A. Back Cover	W Warner Elevator Mfg. Co. 69 Walworth Run Fdry. Co. 20 Wilkins, Geo. Lester. 15 Winkle Terra Cotta Co., The Front Cover Willis Mfg. Co. 73 Wise Furnace Co. 67 Witherow Steel Co. 27 Wolff Manufacturing Co., L. 28 Wood Mosaic Co. 27 Wright Machine Co. 7
E Economy Scaffold Co. 22 Elmsberg, E. F. 66 Ensminger, F. R. 8 Estey Wire Works Co. 8	K Kawneer Mfg. Co. Front Page K. C. Elevator Mfg. Co. 13 Keasbey & Mattison Co. 59 Keokuk Metal Window Strip Co. 74 Knickerbocker Slate Corp., Back Outside Cover Kuhl's, Fred H. B. 66		Y Yates, J. W., Inc. 7 Yeomans Bros. Co. Front Page
	L Lamprey Company 25 Lawson Mfg. Co. 16 Leonard-Rooke Co. 64 Lilger Co. 21 Lombard Foundry, Machine and Boiler Works 63		Z Zelnicker Supply Co., W. A. 54 Zieg Mfg. Co., The F. B. 8

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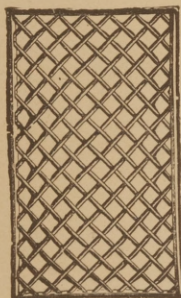
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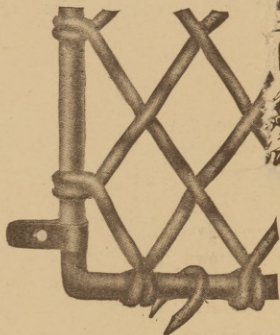
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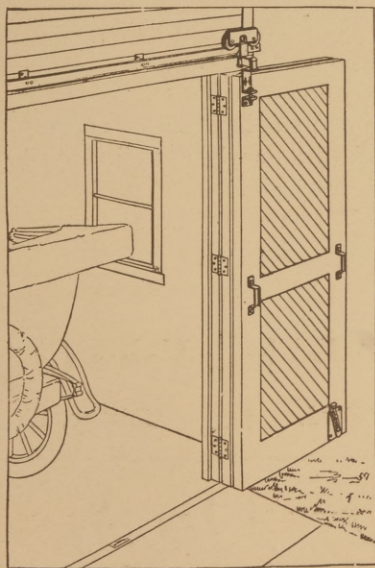
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Alphabetical Index

A. & J. Mfg. Co.	63
Allith-Prouty Co.	65
Amer. Window Glass Co.	75
Aerotruster Engine Co.	19
American Ballast Co.	Front Page
American Elevator & Mach. Co.	Front Cover
Atlanta Terra Cotta Co.	58 and Front Page
Augmore Mfg. Co.	2

B

Bacon Heater Mfg. Co.	10
Baker, W. J.	63
Bajohr Lightning Conductor Co., Carl	22
Barrett Co., The	30
Beaton & Carbin Mfg. Co.	70
Beaver Refrigerator Co.	3
Belmer, H. Co.	79
Bergen & Lindeman, Inc.	21
Boston Economy Lamp Division	21
Bowling Green & Green River Quarries Co.	4

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- Will work at three pounds pressure or over.
- Can be operated with or without oil control.
- Not affected by special rubber washers.
- Oil Control can be removed without shutting off water or interfering with operation of valve.

Single Faucet & Flush Valve Co.

625 West Jackson Blvd.

Chicago, Ill.

Murray Roofing Tile Co's. "Rough Velvet"

are made with rough textured face in distinctive shades variations from Red to Dark Brown with Flashed edges producing BEAUTIFUL MOTTLED EFFECT.

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