

Southern Architect and Building News

OL. XXXVII. PRICE \$2.00 PER YEAR DALTON, GA., and ATLANTA, GA., JUNE 1916 NO. 2
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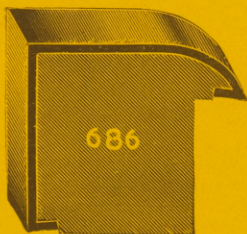
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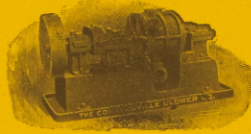
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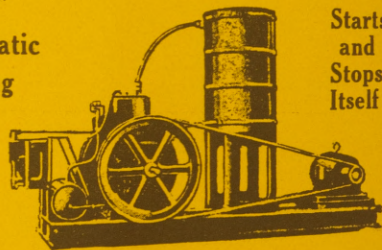
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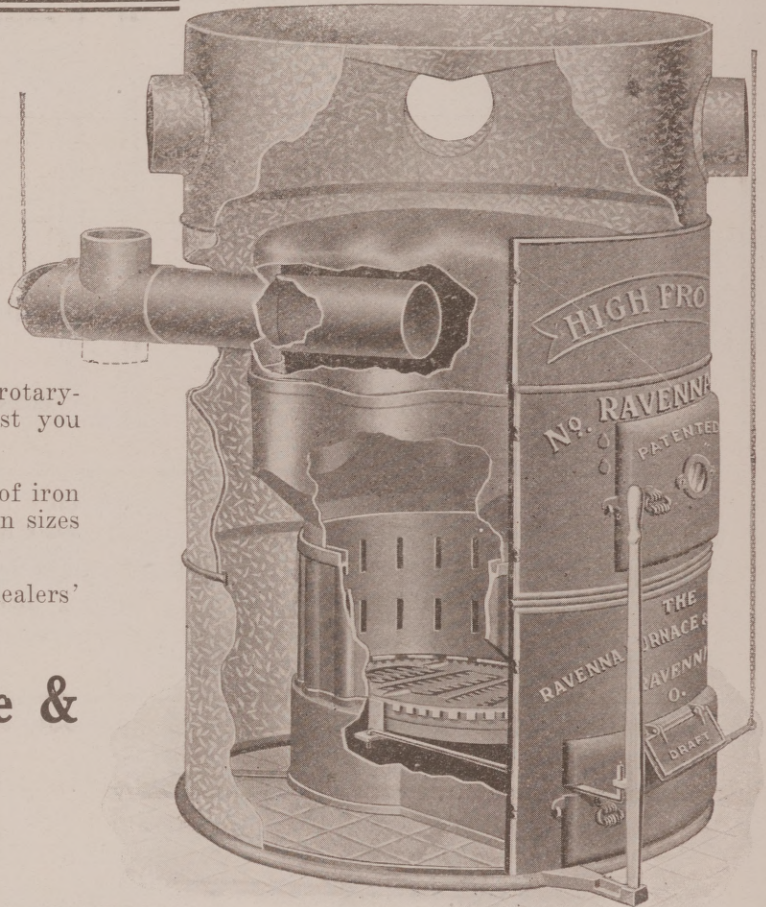
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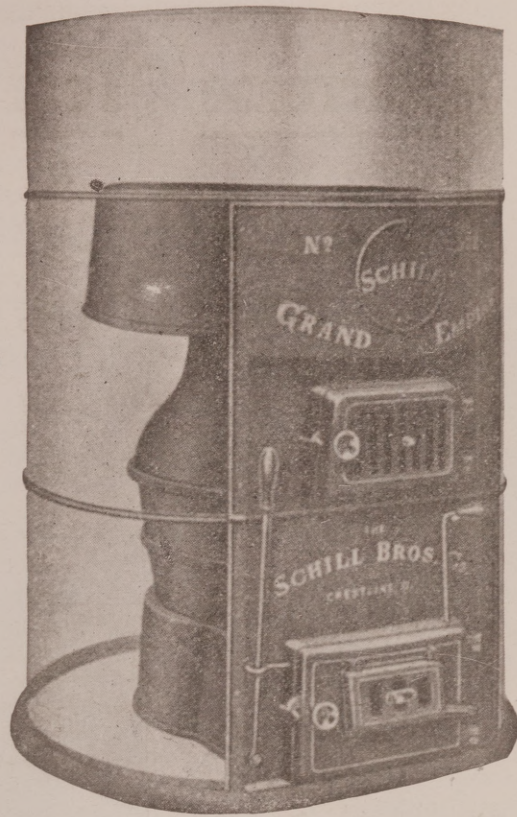


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are using more and more brass letters and figures, both the reversed letters for imprinting and also plain letters for imbedding in concrete. We make a complete line of brass letters and figures as well as solid name stamps.

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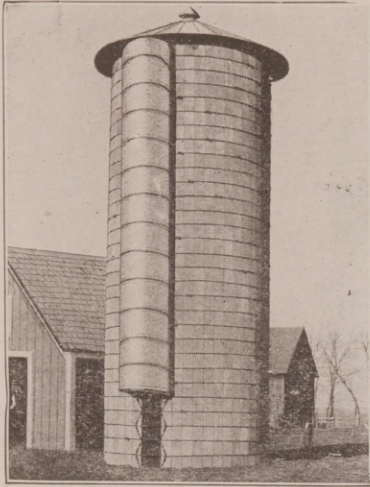
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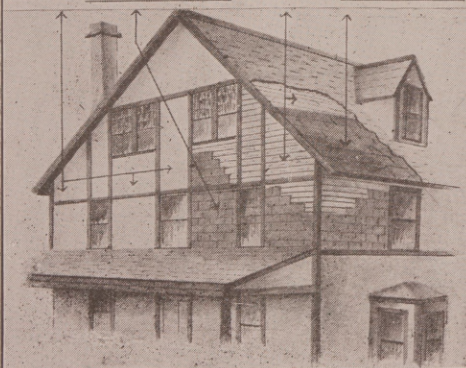
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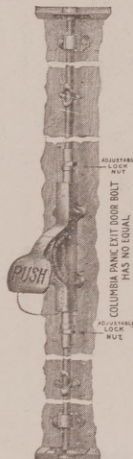
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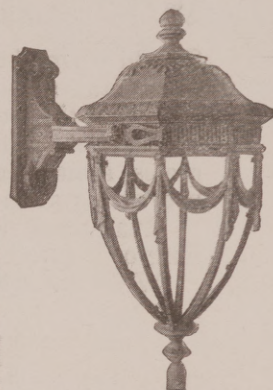
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**Crown Iron
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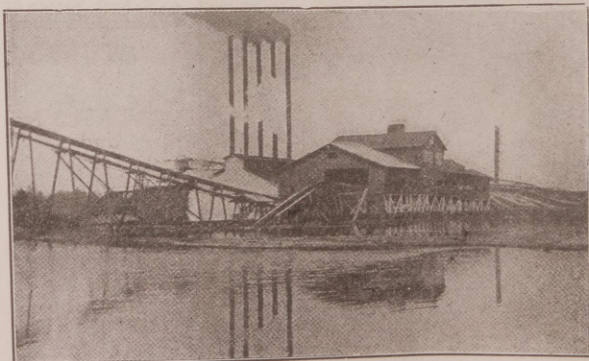
CALCASIEU VALLEY LONG LEAF VIRGIN PINE

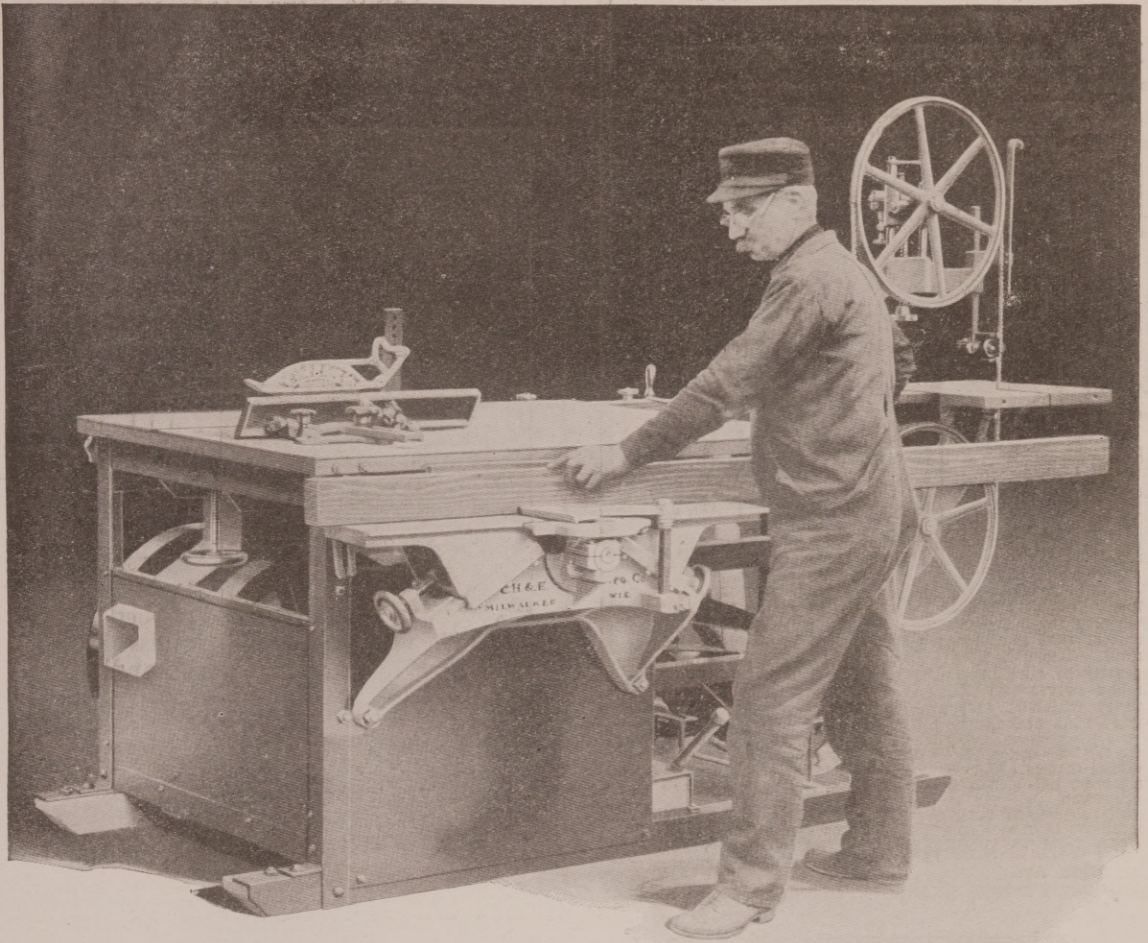
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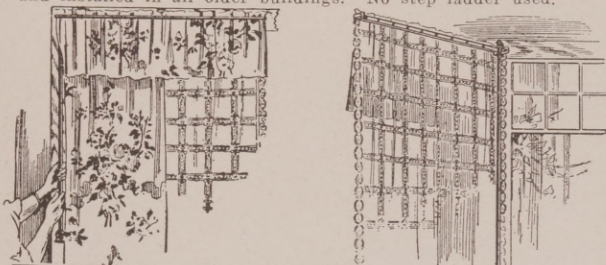
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This cut shows how, without step ladder or chair, just with thumb and finger, the fixture with draperies attached can be made to swing back against the side wall or away from window at any desired angle. This advantage alone appeals to every woman.

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For sample fixture send width of window frame with remittance of \$2.50. Comprehensive illustrated pamphlet mailed on request—Write today.

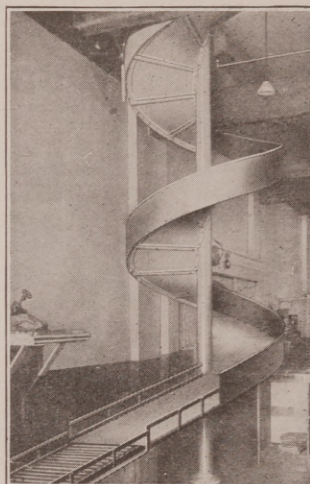
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Follow this economical method of handling your boxes, cases and general merchandise. It will save you time and money.

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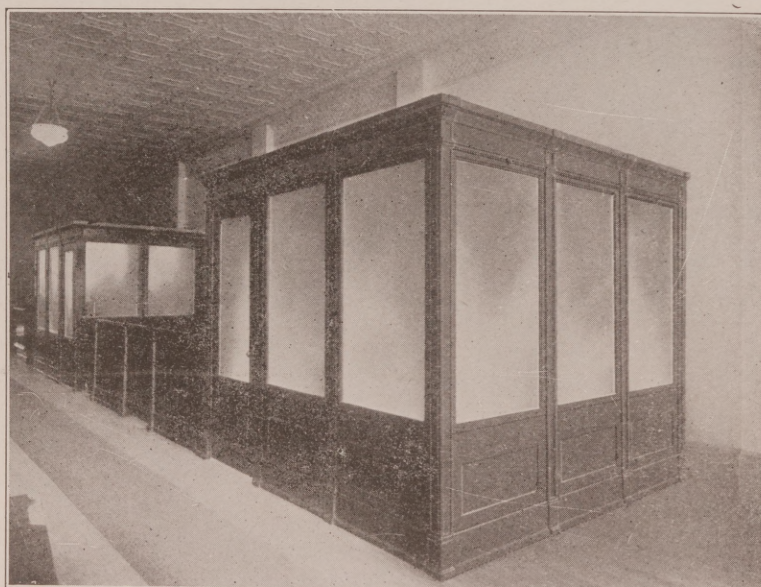
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Southern Architect and Building News

VOL. XXXVII.

DALTON and ATLANTA, GA., JUNE, 1916.

No. 2

The Southern Architect And Building News

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

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

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

Price \$2.00 Per Year.

TO OUR ADVERTISERS

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

*We cannot be responsible for changes not
made, when copy and cuts are received later, or sub-
mit proof.*

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The Painted Roof.

One of the prime topics discussed at the recent
session of the Texas Lumbermen's Association at
Dallas was the menace of the shingle roof, against
which the Fire Protective Association has waged a
vigorous campaign the last few years.

From a thorough discussion of the topic it was
shown that a series of tests had proven conclusively
that a painted roof does not take fire from the fire-
brands and cinders, a fact that is not generally
known. One of the direct benefits of the discussion

is to be manifested in an appeal to lumber dealers
to impress upon their patrons the protection from
fire that may be obtained from the painting of roofs.

This is an interesting fact which it might be prof-
itable for the citizens of the South to keep in mind
when they contemplate building operations or re-
roofing present structures.

Office Buildings in the South.

Continuing our series of special numbers planned
for the year, we are presenting in this the June issue
of The Southern Architect & Building News some
handsome half-tone cuts showing what manner of
progress has been made in the South in recent years
in the fine office buildings that have been erected in
the principal Southern cities, and, as will be seen,
these are taking on metropolitan airs.

The South is giving a very good account of her-
self these days. Advanced architecture is much in
evidence, and immense sums are being invested to
take care of the demands made for office space on
account of the South being headquarters for big
business.

So, the building improvement is in full swing in
our cities, large and small, and in this, as well as in
many other respects, our section is not surpassed
by any in the United States.

Attend the Summer Meetings.

The annual and semi-annual conventions of the
architects, many of whom have in very recent years
formed state organizations, will soon be held, and the
times and places for these meetings will be made
known through the channels of publicity.

All summer, mountain and seaside resorts are
chosen for rest, pleasure and social intercourse, so
that these places are ideal for conventions of artists
and architects.

The Southern Architect and Building News
hopes to see these meetings largely attended by the
profession and thereby increase the interest always
manifested at such gatherings, for there the experi-
enced and the inexperienced men of the craft
gather to exchange ideas and help one another in
the problems of construction which come up in all
offices.

Reader, if you are not a member of your state or
local association, write the secretary for full par-
ticulars and enlist with the men who are working
for the interests of the brotherhood. Perhaps you
are not a member; then it will help you in your pro-

fession to attend the meetings and later join. If you are an apprentice, your mingling with the men higher up in the profession will mean much to your future, and if you can possibly spare the time it would be wise for you to spend your summer outing in this manner.

There are a few states, we believe, who have no organization of this kind, but located therein are individuals who are members of the American Institute of Architects. The Southern Architect and Building News is sure these members of the national organization would lend their hearty co-operation and influence to any effort to promulgate the organization of the profession, locally.

The Employment of an Architect.

The Dallas, Texas, Society of Architects are pushing with vim the right sort of an educational campaign, with which the Southern Architect and Building News is in hearty accord. Recently they caused to be published in the Dallas News an advertisement which we believe will help others to a better understanding of the profession. So we give here a text of that preachment:

The first step to be taken in building a home should be the selection of an architect. Select one who practices architecture exclusively as a profession and one who is properly trained to serve you and free to advise you in the planning and erecting of your home.

Having selected your lot, the next step is to determine as closely as possible the amount you wish to expend on your premises. Then give the architect this information, together with your ideas as to your general requirements in a home. It is not necessary for you to determine exactly what you wish in the plan and design of your home before you consult the architect, as in this work the architect will so assist you as to save you much worry and trouble.

When the architect has sufficient data as to your requirements, he then prepares your preliminary sketches, in which he shows you his idea of the home you should have, taking into account the amount you wish to expend and the topography and environment of your lot. You are permitted to take these sketches and study them carefully and offer any criticism or suggestion you choose regarding them. The architect will make the necessary changes until the sketches are perfectly satisfactory, after which he proceeds with the working drawings and specifications.

If you contemplate building a home, be sure that you select a professional architect direct. Consult with him about your lot as well as in regard to the plan and design of your home. His knowledge about modern homes and good taste as to the plan and design which would best meet your requirements will be invaluable.

Exchange Information.

The Engineering News says that Exchange Information is more valuable than "trade secrets." Continuing, it says that the advertising of the construction companies has unquestionably had a considerable educational effect on the whole building trade. It has emphasized and made plain the qualities that lead to success, has discussed the details of organization and has made more nearly universal the standards of quality and of performance.

One pleasant feature of the publicity work has come from the willingness of various construction companies to discuss frankly, giving costs and full description of methods, the details of their work. Because of the advertising value to themselves they have given freely the information which the old-line builder held as a trade secret. In discussing their costs they have gone on the theory that, to make those costs, other builders must be as clever as they are. They realize that costs are measures of performance, not trade secrets—an idea which seems to have been hazily in the minds of the older line of builders. I know today of builders who will not tell you how much a thousand they estimate for brickwork, nor how much a thousand it costs them, even though the methods of determining a thousand of brick are nearly as numerous as the firms using the methods.

Delays in Awarding Contracts.

Delay in formally awarding a contract after the bids are opened often causes serious inconvenience and loss to the successful bidder. In these days of rapidly advancing material prices, the holding up of the award for even a short time may work considerable hardship on the contractor. The change in material costs and even in labor costs in the period between the preparation of the bidding estimates and the signing of the contract may be great enough to make no small difference in the contractor's profits. In former years delay in the execution of contract was not so serious a matter for the contractor as it is at present. It was bad enough then, to be sure, but now with abnormal increases of prices the rule a small delay may make a big difference in the cost to the man doing the work, comments the Western Contractor.

Government Orders Georgia Granite.

The Navy Department of the United States Government has awarded to the Stone Mountain Granite Corporation a contract for \$85,000 worth of granite to be used in the construction of the marine barracks at Norfolk, Va.

There seems to have been a prejudice against the Georgia product by the engineer in charge, but it was shown by bureau standard tests that the Georgia granite is superior to the competing stone, as a matter of fact, that mica is more evenly distributed and the granite much stronger in resisting power.



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Set to Your
Address

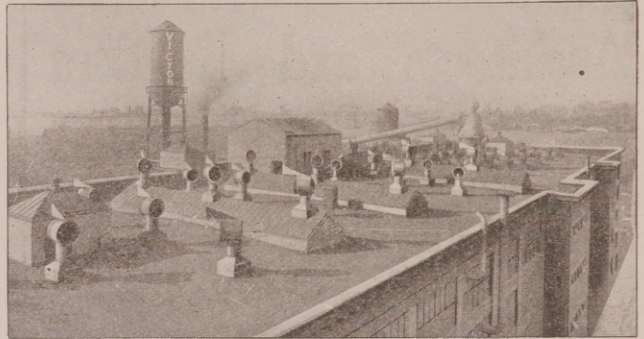
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Send Money
Order for a
**MECHANICS'
BEST
HELPER**

Gets in where
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Wrenches are
Helpless.

Patented Adjustable Handle Socket Ratchet and Wrench.
For use wherever wrenches are required.

C-M-B WRENCH CO., Garwood, N. J.



View of Victor Talking Machine Co.'s new building at Camden, N. J., equipped with 35 BICALKY ROOF FAN VENTILATORS. Some time ago the Victor people purchased several types of ventilators to be tested out and the most efficient ventilator was to be installed in their new building.

The above view shows result of the test. Write for catalog and prices.
BICALKY FAN CO. - - - - - BUFFALO, N. Y.

SPECIFY "CHICAGO"



Multi-stage Turbine House pumps.
Single and Duplex Electric Sewage
Ejectors
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A complete and well designed line.

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Expert Mechanics in Every Line

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**MONOTILE COMPOSITION AND
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**AMERICAN
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Wire Work, Window Guards, Ore Screens

DEPARTMENT S. ——— THE H. BELMER COMPANY ——— CINCINNATI, OHIO.

PERRETTE'S AMERICAN "Rubbing Stone"

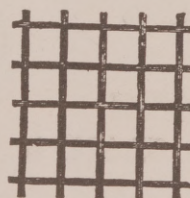
We own the only Satisfactory Genuine Natural Rubbing Stone Quarry in the World. Our Rubbing Stones are all quarried from the famous Perrette Quarry, "the Quarry that has made the reputation for all brands of American Rubbing Stone." Samples Free for Test."

AMERICAN STONE CO.

FLOYDS KNOBS, IND.

"If it's made of Wire we make it."

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Manufacturers of

Bank Railings and Enclosures, Wire
Cloth, Wire Work, Wire
Goods, Etc.

Estimates Promptly Made. Send for our Wire Cloth Catalog
No. 20, Wire Work Catalog No. 19.

Architects and Builders Investigate the Reversible Mirror on Bath Room Cabinets

A REFLECTOR THAT REFLECTS

You don't have to break your neck trying to get proper reflection for stray hairs in shaving or making toilet.

A sanitary receptacle for medicines and toilet articles.

Snow white steel enameled cabinet meets all requirements for sanitation and fireproof accessories.

Cabinet and mirror
in use at same time.



Give your clients something better at no extra cost.

Save your trouble of extra drawings by specifying in all plans the

**Ideal Reversible
Hinge Cabinet Co.**

3668 Park Avenue
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Office and Mill
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BRASS RAILS

of every description for Theatres, Churches, Offices, etc.

Write for Catalog

HAND RAILS,
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BRASS GRILLES.
BRASS FRAMES.
BRASS EASELS
FOR THEATRE LOBBIES

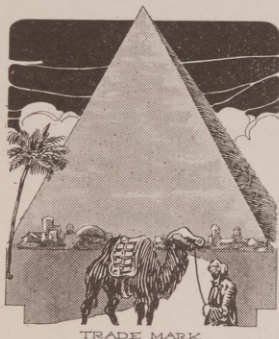
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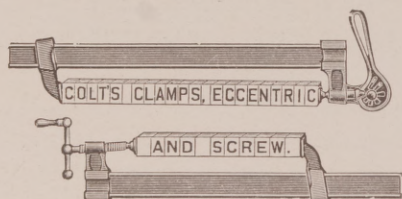
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52 Vanderbilt Ave., New York, N. Y.

Spaulding System of Metal Forms

for Constructing Partitions and Walls of Concrete. This system combines Economy, Simplicity and Efficiency. Provides a Hollow or Solid wall. Forms are adjustable, and can be set so true that only a finish coat of plaster is required. Forms are separately removable.



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Eccentric or Screw

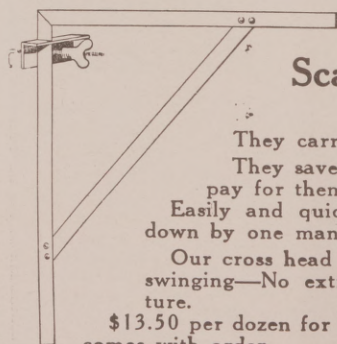
50 styles for workers in concrete and wood.
Especially adapted for forms and curbing.

Ask for catalog No. 270.

BATAVIA CLAMP CO.,

205 Center St.

BATAVIA, N. Y.



Courtney Scaffold Brackets are Safe

They carry a ton: last a lifetime
They save enough on two jobs to
pay for themselves.

Easily and quickly put up and taken
down by one man.

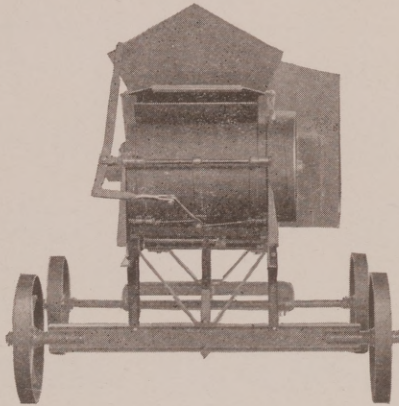
Our cross head keeps the scaffold from
swinging—No extra charge for this fea-
ture.

\$13.50 per dozen for 3-foot brackets—if cash
comes with order.

To save money, order while this ad is in your mind.
American Steel Scaffold Company, Dept. 4, Detroit, Mich

A GOOD MIXER

*Get a Mixer
You Can Afford
to Use on
Every Job.*



\$150.00

*Complete with
3 H. P. Engine*

The Minster Batch Concrete Mixer is Ideal for Carpenters and Builders, small Contractors and Block Plants as it is efficiently operated by one man or a gang.

Equipped with a 3 H. P. engine, the complete outfit weighs about 1000 lbs. or 700 lbs. less than any other machine of equal capacity.

Its normal capacity is up to 30 cu. yds. per day, we have done more with it.

Readily moved around on the job without the aid of horses.

A "find" for doing work where the contractor cannot afford the expense of moving the larger machines on the job. Get a "Minster" and do the small jobs at a profit.

Write for catalog giving full information.

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The Latest Word in Kitchen Convenience

Wall Ironing Board

Simple in Operation

Perfectly Rigid

No Springs to Break

Adjustable to Three Heights

Complete, Board, Sleeve Board
and Iron Holder

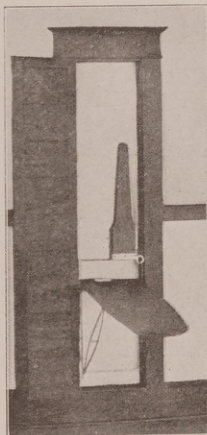
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Kitchen Fixture Co.

Box 503

Everett, Wash.



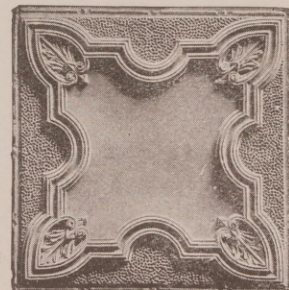
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You can add a notch or two to your reputation
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METAL CEILINGS, TILE and SHINGLE ROOFS

Nothing
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in
Quality
Newer
in
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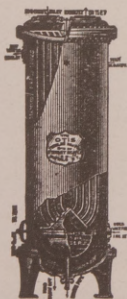
Satisfy
Yourself
Now
Don't Put
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Catalogs, Samples and Prices Free. Send Name.

The Canton Metal Ceiling Company

1949 Harrison Ave., Canton, Ohio.

THE OTIS METHOD FOR KEEPING BOILERS CLEAN.



Ask us what we can do for you in the way of saving your fuel and your boilers. Clean boilers make steam easy and with much less fuel than dirty ones. If no dirt is put into the boilers with the feed water no scale can accumulate, therefore no cleaning is necessary.

Write for particulars. Address

Stewart Heater Company,

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We Can Prove It--and so may you

★A plumber's blow torch flame generating 2160 degrees of heat may be held against an ordinary cedar or cypress shingle for thirty minutes, or more, and it will not burn or flame, because **PYROLIN Shingle Stain** makes

★ *Mr. W. C. Howe of the American Lumberman, has personally seen its test, and can testify to the truth of our statement.*

wood shingles absolutely proof against the spread of fire.

—Send for a **PYROLIN Treated Shingle** and make the test yourself.

Pyrolin is Manufactured Only by **PYROLIN PRODUCTS CO., Inc.** Fort Dodge, Ia., U. S. A.

Diamond Flexible Metal Weather Strips

are easier to sell than the old style rigid strip because they are so much better in use—and it doesn't take much argument to convince owners why they're so much better. Carpenters and Builders can develop a big business selling these. \$3,000 to \$5,000 a year is quite possible, because every purchaser of Diamond Strips will be so satisfied that he will gladly boost them to other owners and tenants.

Diamond Weather Strips mean so much more added comfort that no prospective purchaser will begrudge their small price.

Where Diamond Strips are used the windows don't stick or bind, and the sash can be removed when necessary without displacing the Flexible

Weather Strip. Another thing is that all openings are made air tight and wind, dust, moisture and noise haven't a chance to get in. They have been known to effect an economy of from 20% to 40% in fuel alone, because less heat is required in rooms protected by Diamond Weather Strips.

And it's not only residences that use them. Large public buildings—schools, churches, hospitals, etc., are always in the market for these products. We make all kinds, suitable for all style of windows and doors.

Being made of zinc and highest grade spring bronze, they never rust, and last for years. Can be put in old buildings as well as new ones.

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FOR CONCRETE
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THERE'S A REASON WHY No. 60 Cement Waterproofing and Bonding, Des Moines Elaterite

Is superior to every other waterproofing and bonding material.



It's the natural characteristics of the rubbery pigment—intensely adhesive, bonding quality, resistance to all acids, absolutely waterproof character, permanent elasticity.

Tests made at Houston, Texas, showed adhesive, bonding strength equal to 160 lbs. per square inch, giving a permanency and a resistance to water pressure not found in any other waterproofing material.

Plaster coats are applied directly over it, the adhesive, bonding strength holding them firmly and permanently. (See cut.)

Catalogue "8N" with full information on request.

Agencies and stocks at principal Southern points.

THE ELATERITE PAINT & MFG. CO., DES MOINES IOWA.

Others Discuss Some Timely Topics

Florida Building Activity.

"There is a general revival in building activities all over Florida," says the Metropolis of Jacksonville.

"There is a greater demand for hotel accommodations in most parts of the state, and there are many contracts for winter homes under way, and being let. From every section of the state, and especially at the coast towns, there is a general demand for more accommodations. Many people who have spent their first season in Florida are preparing to come back next season, and are arranging for hotel accommodations, renting houses or apartments, or are building, or preparing to build."

Quantities in America.

The following comment and query appeared in a recent number of the London Builder. The quantity system has been in use so long in England that it is not surprising that our friends over there find it hard to realize how our contractors and architects manage to get along without it. The Builder remarks:

We have before us an American circular entitled "A Word to the Advocates of the Quantity System," to which is pinned a copy of a circular addressed to the Fellows and Members of the American Institute of Architects by Mr. G. Alexander Wright of San Francisco. The two documents read somewhat quaintly, and from them we gather that the recent attempt to introduce the quantity surveyor to the Western world is somewhat hampered by ignorance of the nature of his task, otherwise such clauses as the following would hardly be required:

"These quantities, and improperly so, force the bidder to refer back to the drawings and specifications before he can determine his itemized cost values. All information necessary to determine items of cost and quantity should appear in the quantities. To give this is clearly the duty of the quantity surveyor. His fee covers this service.

The suggested protection against incorrect quantities by a surety company bond, becomes a doubtful issue if the quantities contain covering clauses capable of being so construed in a court of law as to protect the parties who prepared to quantities, and necessarily their bidding company also. Architects who have had experience following a loss, with the attorneys for a bondsman, will realize what they might expect, when the language of the quantities makes it obligatory upon the bidder, before bidding, to examine all the drawings and specifica-

tions (with a view, of course, to his including every cost in his bid). There is a condition, a loophole here, which should not be."

Although it is difficult to imagine what architects here would do without quantities, it seems certain that, if American architects require the information which Mr. Wright gives, they can have little idea of the real object of the use of quantities and of their nature. It seems an anomaly that in America where the processes of life are speeded up, the builder should have time to take out his own quantities from the architect's drawings as was the case here years ago, when pupils and assistants labored over the production of numberless tracings to enable competing builders to take out their quantities from. We should like to know whether the American contractor has special methods of estimating.

The Business Situation.

Is the present improvement in business real, or are we only experiencing a business spasm that will pass away soon as the abnormal conditions that produce it pass? Hard-headed merchants and manufacturers are asking themselves the question. They prefer to think real business is here to stay, but are not certain, comments an exchange.

The iron and steel trade is considered a reliable business barometer. When iron and steel mills are busy, business is good. The United States Steel Corporation recently announced that it will spend \$53,000,000 at Gary, Ind., on the construction of two new steel plants, or rather on a large plant in two complete units, construction of these plants to proceed at once, the first one to be completed in fourteen months.

Evidently the shrewd men who manage this great concern believe business will be good fourteen months hence, otherwise they would hardly vote to spend \$53,000,000 on new equipment. To say present better business has no solid foundation is to say these people are making a mighty big mistake. They are, however, practically betting \$53,000,000 that they will need this new equipment more than a year hence.

Architect's Fee and a Comparison.

The official organ of the American Institute of Architects, The Journal, says that the recent discussion in Congress over the extra appropriation for the Lincoln Memorial served to bring out a great deal of comment which again illustrates the unbusinesslike policy of appropriating lump sums for public buildings and memorials. Here, again, the

Congressional point of view is further illustrated in the remarks of Representative Fitzgerald of New York, chairman of the House Committee on Appropriations, who opposed the grant, and who said:

"What does this appropriation of \$594,000 mean? The Architects' trust has had its hand in it. For years we have been paying for outside architectural services 5 per cent, and then the Architects' Trust, which recently was busy on another matter, arbitrarily raised the prise to 6 per cent, so that the architect on this structure, under the present limit of cost, receives 6 per cent on \$2,000,000, or \$120,000. There is no incentive upon these men to design buildings within the limit of cost, because if this particular provision be adopted the architect receives out of it \$30,000 additional as his percentage on the \$594,000 to be provided."

The Public Building commission appointed by the last Congress for the purpose of making a study and report on the public building question, advised Congress that the cost of preparing plans and placing work in the Supervising Architect's office is approximately 4 per cent additional, making a total of 7 per cent in comparison with the proper minimum fee advocated by the institute.

Favoritism Charged to Richmond Board.

W. Duncan Lee, in behalf of himself and other architects of Richmond, Va., he says, in a letter to the City School Board of Richmond, charges that two local architects have been given a monopoly of all work in the city under control of the School Board, and asks if the "board will continue to practice such discrimination, or whether the architects of Richmond may in the future expect a fair and more equitable distribution of the city's school work."

Mr. Lee, in his letter, claims that during the past four years the board has erected or authorized fifteen buildings at a cost of more than \$1,032,000. All of these buildings, he asserts, were planned by two firms of local architects, and over \$47,000 in fees have been, or will be, paid to these two firms.

"To the best of my knowledge," he writes, "there are not less than twenty architects or firms of architects licensed in the city of Richmond. As far as I have been able to learn from the other eighteen firms, none of them has ever been asked to prepare plans for these buildings or advised that they would be erected that they might compete."

Ferdinand Ebel, chairman of the School Board, said that the assertions made by Mr. Lee were correct, but that it was the policy of the board to select its own architect, just as the average business man chooses his physician or surgeon.

"When we have a building to erect," said Mr. Ebel, "we employ a consulting architect, and he goes over the ground with the board and prepares plans

and specifications. In many instances these plans are changed several times, and if the architects were competing they would object to changing their plans so many times. In the past four years the architects we employed have been doing this, and have changed their plans until they were satisfactory to us. The board considers that it has been acting for the best interests of the city."

Nashville Now Uses Standard Contract.

Through the efforts of Lee Parrish, secretary of the Nashville, Tenn., Builders' exchange, practically every architect in Nashville is now making use of the "Standard Documents of the American Institute of Architects." These documents include a form of agreement and general conditions of contract, bond of suretyship, form of subcontract, and letter of acceptance of subcontractor's proposal. These documents, which have been issued by the foremost architectural society in the United States, have been approved by the National Association of Builders' Exchanges, the National Associations of Master Plumbers, Master Steam and Hot Water Fitters, Sheet Metal Contractors and Electrical Contractors.

Previous to the adoption of the standard documents, it was customary for architects to prepare their own documents. In some cases they were of an arbitrary nature, leaving the contractor powerless in the face of any condemnation or change in work the architect might desire. The new documents are not materially different from those used by many architects, but include one provision that is designed to give a "square deal" to both parties. This is the arbitration clause, under which the contractor may make an appeal from the architect's decision. An arbitrator is selected, or, if desired, an arbitrator for each side, the two selecting a third. The arbitrators decide the cases and also assess such costs as may result. The knowledge that an appeal may be taken is considered a deterrent to arbitrary demands by the architects, while it also enforces compliance with the contract on the part of the builder.

All of the contracts made recently in Nashville for schools and other buildings have been made in the form of these documents, and this is expected to remove any friction between architects and builders.

Leeds Plumbers Increased Wages.

Consul Homer M. Byington reports from Leeds, England, under date of March 31 that the demand of the plumbers of that city for an increase in wages of 2d. (4 cents) per hour has been settled by the employers granting an increase of 1d. (2 cents) per hour, thus bringing the present rate of pay up to 11d. (22 cents) per hour. A great shortage of labor is reported in this trade.

"Bristol" Metal Shingles

Made of
Galvanized and Painted
Tin.



BRISTOL METAL MFG. CO.
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SOUTHERN OHIO SANDSTONE

SAWED — PLANED — ROUGH — TURNED

QUARRIES and MILLS

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GENERAL OFFICES

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A Live Proposition for Live Plumbers

Supply your trade with

Kloset-Klean

for keeping closet bowls clean and sanitary.
Will not injure bowl, pipes or connections.
Good profits. Write today for details.
Use Disolvo for clearing clogged or frozen pipes.

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Impervious "Cravenette" and "Ratine"

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IMPERMEABLE WALL COPING

Standard Brick Company

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*South's Greatest
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Galvanized Corrugated and Flat Sheets

And All Forms of

METAL ROOFING

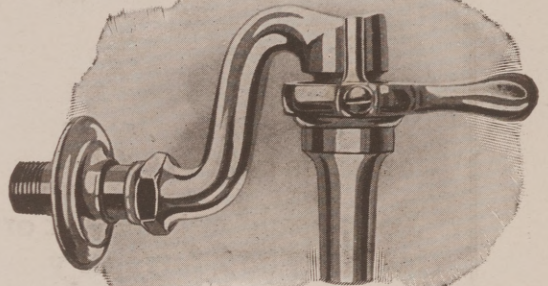
All sizes and gauges. Prompt
delivery from the largest and
most complete stock in Florida

The Florida Metal Products Co.

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JACKSONVILLE, FLA.

"THE SAVILL"
Reg. U. S. Pat. Off.



"SWAN'S NECK"

Patented June 18, 1912

The Savill Swan-Neck Faucet

Stays on the Job

Because it is everything that can be desired in a faucet—

Quality—Service—Durability

The SAVILL not only outlasts the ordinary faucet, but gives better and more satisfactory service.

Opens to full steady stream, and closes on half turn of handle.

Made of best quality red metal.

Has one special tough fibre washer incased in brass shell to prevent swelling. Insures smooth even wear—cannot leak.

Our new Catalog tells all about SAVILL products. Clip coupon and send for it today.

Kindly send me copy of your new Catalog.

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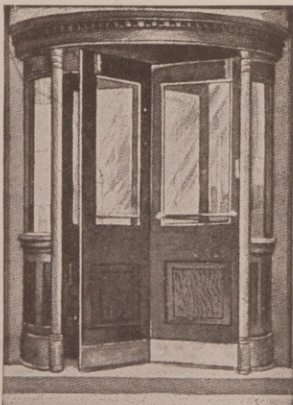
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Philadelphia, Pa.

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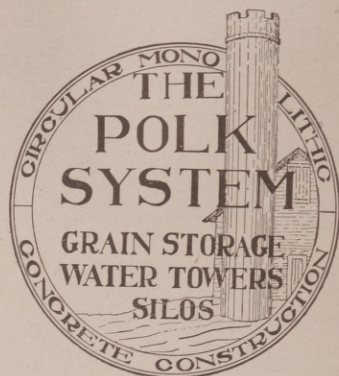
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ARE you facing a season of odd jobs, scattered here and there over a wide territory? Are you sure of work six days a week during the concrete contractor's busy season? Do you know just what your profits are going to be on the jobs that you have already contracted for, or are there a lot of uncertainties entering in that make your profit a mere guess?

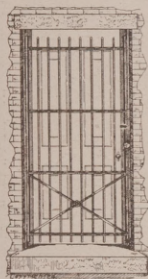
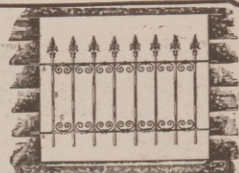
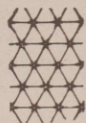
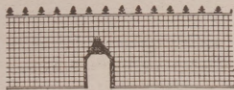
If you are one of the many contractors who are facing such an unsatisfactory outlook, we suggest that you look into the opportunities which are offering themselves in the concrete silo building field. Every farm on which stock is raised is in need of a good monolithic concrete silo. Every farmer, wise and otherwise, will be wanting one within the next five years. The demand is enormous. Competition is, as yet, negligible—provided you are equipped with a POLK SYSTEM machine. Profits are BIG and SURE. You can tell just what you are going to make, and how long it is going to take you to make it.

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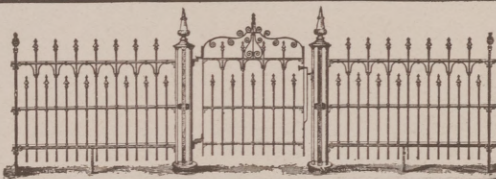
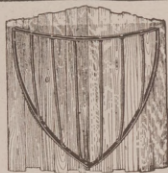
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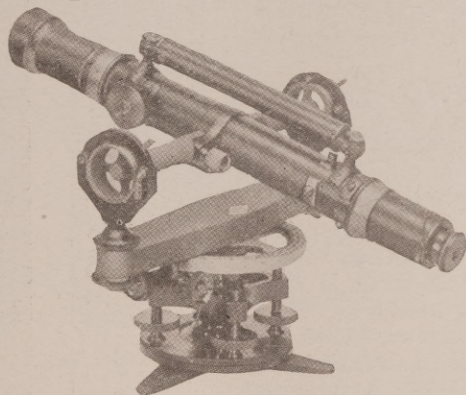
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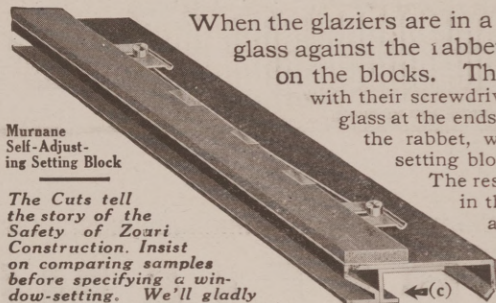
22 East 41 St., N. Y.

Where Lies the Danger in Setting a Big Pane of Glass?

YOUR Client—a haberdasher, say—has a big plate of window-glass, say, 10 x 15 feet or over, for his new store window. The glaziers lift it, by means of straps, onto two blocks, in position for setting. These blocks, are placed about fourteen inches from either end of the plate of glass.

The glass, when set on the blocks, must be kept away from the rabbet far enough to allow withdrawal of the straps.

The glaziers then use chisels to pry the heavy glass into contact with the rabbet, at the point where it sets on the blocks.



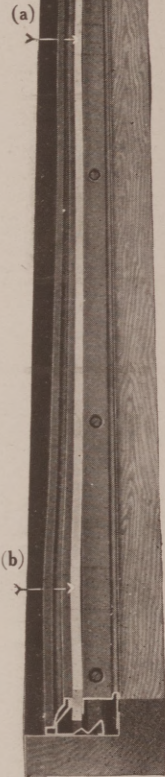
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The Cuts tell the story of the Safety of Zouri Construction. Insist on comparing samples before specifying a window-setting. We'll gladly send them to architects and builders on request.

When the glaziers are in a hurry, they neglect to pry the glass against the rabbet at the points where it sets on the blocks. Then, when the men get busy with their screwdrivers in the outside molding, the glass at the ends and middle is forced home against the rabbet, while the part immediately above setting blocks is not. It sticks to the blocks.

The result is the kind of distortion shown in the vertical cut to the right—see (a) and (b). Though this distortion may not crack the glass at the time, it puts it under a dangerous tension which may start a crack whenever a little added stress occurs, such as wind-pressure or vibration

stress occurs, such as wind-pressure or vibration



This dangerous distortion

is unavoidable when glass rests on stationary setting blocks.

The Murnane Self-Adjusting Setting Block prevents all such trouble and risk.

The Murnane Self-Adjusting Block Does Away With Danger of Distortion

Zouri Drawn Metals
Company
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Chicago Heights, Ill.

Please send me sample of Zouri Key-Set Safety Sash.

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The Murnane Self-Adjusting Setting Block does away this danger. The glaziers set the plate of glass on the Murnane Blocks in the usual way, and withdraw their straps. This Setting Block consists of two members. The main support (c) is a rigid piece of metal. Resting on this is a sheet of metal, so constructed as to form an anti-friction bearing, which will move inwardly with the slightest pressure. On top of this bronze sheet is riveted a leather cushion. The glass rests on this cushion. This construction makes it so easy to slide the heaviest plate of glass against the rabbet that perfect, uniform contact is secured the entire length of the glass.

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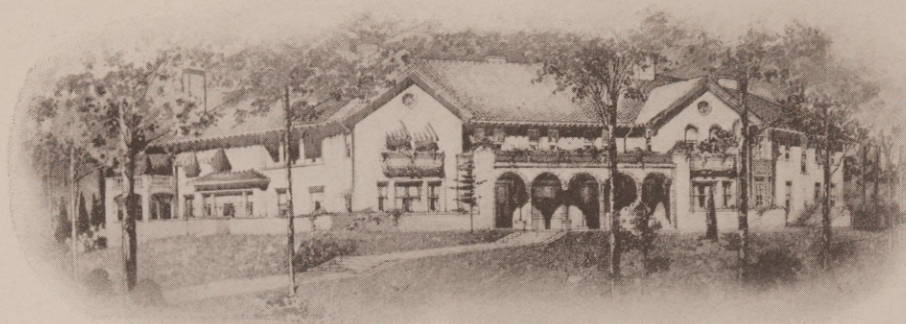
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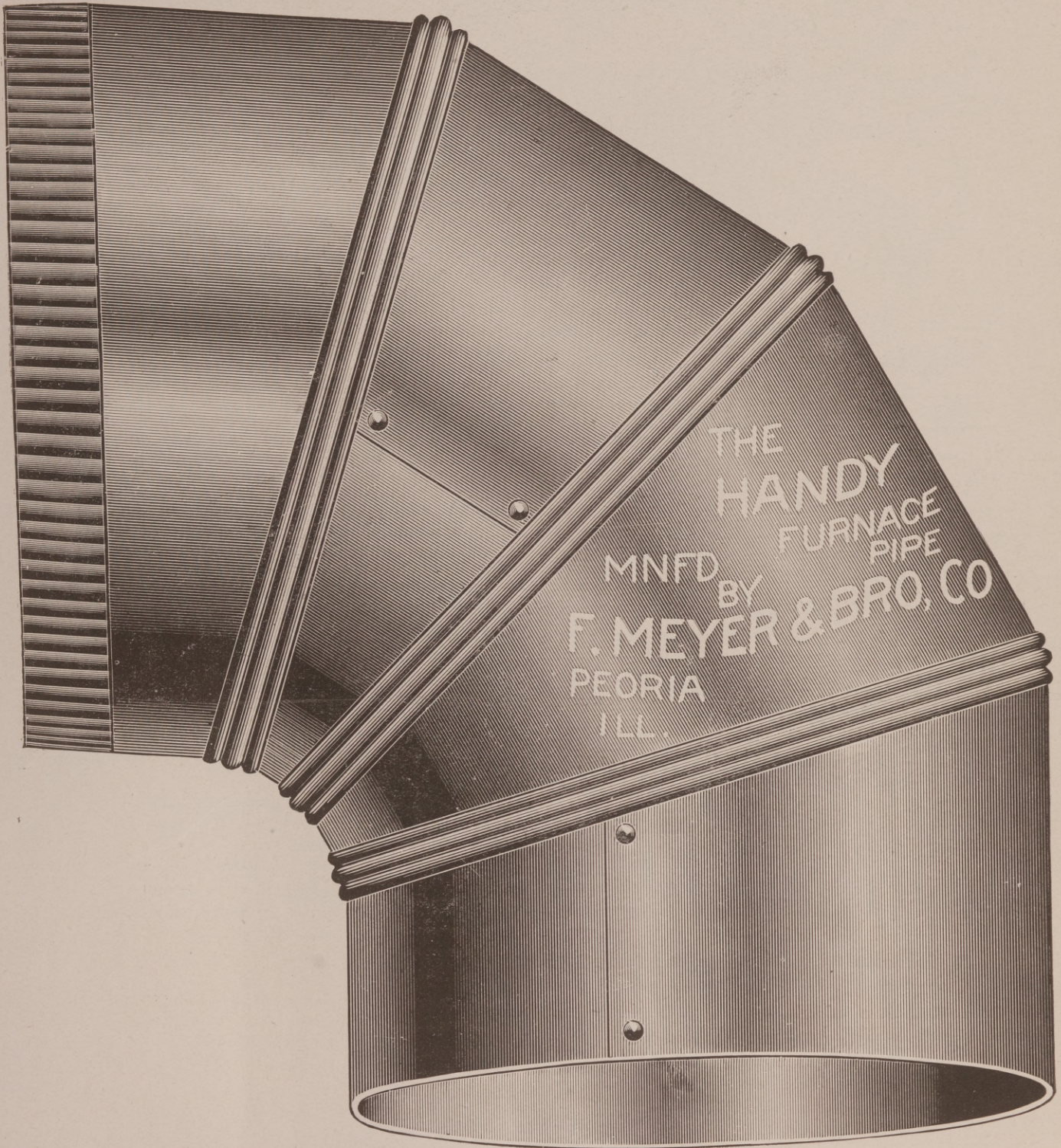
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Facts about our new 20 Year Guaranty Bond

WE are now prepared to give a twenty year Surety Bond Guaranty on every Barrett Specification Roof of fifty squares and over in all towns in the United States and Canada of 25,000 population and more, and in smaller places where our inspection is available.

This Surety Bond will be issued by the United States Fidelity and Guaranty Company of Baltimore and will be furnished by us *without charge*.

Our only requirements are that the roofing contractor shall be approved by us, and that The Barrett Specification, dated May 1, 1916, shall be strictly followed.

We know that if this is done the roof will surely last twenty years and probably much longer.

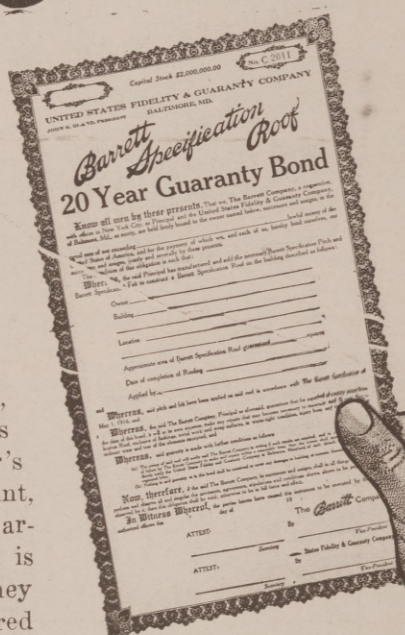
Obviously, our inspectors will insist upon the proper quantity and quality of materials and the best workmanship being used because, if the roof for any reason goes wrong, *we alone are responsible*.

A copy of The Barrett Specification, with roofing diagrams, free on request.

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From the architect's, engineer's and buyer's standpoint, such an arrangement is ideal. They are assured of having an inspector on

the roof whose only motive is to make it as good as possible.

We are notifying architects, engineers, roofing contractors and owners throughout the country of this important addition to **Barrett Service**.

All you have to do to secure the Guaranty Bond is to have The Barrett Specification, dated May 1, 1916, included in the building specifications and have the roofing contractors figure on that basis. The Specification of that date includes the twenty year Surety Bond provision.

If you wish any further information regarding this Guaranty, write to our nearest office and the matter will be given prompt attention.

Southern Architect and Building News

WITH WHICH IS CONSOLIDATED "SOUTHERN BUILDING RECORD"

VOL. XXXVII.

DALTON and ATLANTA, GA., JUNE, 1916.

No. 2

The Management of Big Buildings

WHEN should a building manager take charge of a building? Ordinarily a building manager is employed after the building is erected and ready for occupancy; but in the minds of those who have had the largest experience there is no doubt as to the answer: **before the foundations are laid.** He should begin with the plans, and "grow up" with the building as it were. In this way he not only becomes familiar with its every advantage, but can bring to the architect and builder a vast fund of information, gained through his practical experience, which is invaluable at that time. Many of the problems which arise in the rental of the finished structure, when there is lack of expert knowledge beforehand, are solved with the building manager's help, before they exist. He is not only aiding in the planning and becoming familiar with the details of the structure, but he is beginning his campaign for securing tenants, so that by the time the building is completed the majority of offices are leased, writes W. J. Hoggson, of New York.

The scientific management of buildings is practically a new profession, but one that is growing in favor with those who look upon a building proposition from the standpoint of a sound and safe investment.

The average owner, or the tenant of the building for that matter, little realizes what it means to operate a building. Between the thousands of tenants in our large office buildings on the one hand, and the owners on the other, stands the man in charge of the building.

It is this determined individual who has been developing himself during the past few years, and who must act as arbitrator or referee between the owner and the tenant, and be able to satisfy both, that has come to be known as the "Building Manager."

The proper management of business properties involves a great deal more work than merely renting the building and collecting the rents. The agent is usually expected to perform many other services for the owner, such as looking after the water rates, tax bills, fire liabilities and plate glass insurance; the hiring of employes, such as elevator

men, firemen and engineers. He must also pay their wages regularly. He must get estimates for necessary repairs to the property and keep a close watch on the work while it is in progress. There are also other bills to be attended to, besides all the endless orders that come from the Board of Health, Bureau of Factory Inspection, Bureau of Buildings, and other state and city departments.

The manager of a building is mayor, police, health and street cleaning commissioner, and department of public works, to a community of several thousand people under a single roof. So vast has this real estate field become that no man can possibly know it all, and the higher the building specialist develops, the greater success will be the building from an investment standpoint.

He must be competent to select the most capable men for the heads of the different departments, men who know their work, when and how it should be done, and will see that it is done when it should be, and as it should be. To do this in such a way as will produce the best results, he must be a good student of human nature. He must be sure that every employe carries out the spirit of the management.

It is not necessary for the building manager to be a plumber, but he should know where the different valves are located, and what they are for, so that if it becomes necessary for him to shut the water or steam off, from any part of the building he could do so without calling the engineer.

He should be enough of an electrician to know where the different switches are located, what machines they control, and should be able to throw them off in case of an emergency.

He must be familiar with and able to select the best grades of soaps, powders, polishes, mops, brooms, brushes, and the various supplies which it is necessary for the janitor to have on hand at all times.

The tenant who comes down to his office in the morning has an idea that the office building owner is getting wealthy at a tremendous rate.

The books of an office building are seldom opened to the public gaze, and the expense of keeping up a

building is hidden from the tenant's view, because the engine room, coal pile, etc., are out of sight, and the cleaning is all done by night.

The thousands of people who have offices in the modern skyscraper or have occasion to visit one on business, seldom have a glimpse behind the scenes to see the smooth and orderly running machinery. They only know that the elevators are always ready to whisk them up to the particular floor to which they wish to go; that the floors and windows are always clean, that the lights are always in good condition, and that in the winter the offices are always comfortably warm. The tenants leave the offices at night littered with papers and in confusion; they come down in the morning to find all the litter cleared away and everything in spick and span order. If it is not, they growl, and then someone has to get busy.

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.

Lumber, No. 20797.—The commercial attache of the Department of Commerce in Chile reports that a firm in that country desires to establish commercial relations with American exporters of Oregon pine, white pine, clear pine, oak and ash lumber. In quoting prices, the names of the steamship lines over which exports could be forwarded to Chile should be stated.

Machinery, structural supplies, etc., No. 20799.—A commercial agent of the Bureau writes that a firm of exporters in the United States desires to communicate with American manufacturers of machinery, structural steel, and machinery supplies, etc.

Machinery, steel, and structural material, etc., No. 20808.—A commercial agent of the Bureau writes that a firm in the Netherlands, with branches in the Far East, desires to establish commercial relations with American manufacturers of machinery, steel, and structural material, and other kindred technical articles. It is stated that cash will be paid for all purchases. References are given. Copies of correspondence and catalogs may be sent to the agents of the firm in the United States.

Hardware, Plumbing supplies, etc., No. 20852.—An American consular officer in New Zealand reports that a firm in his district desires to represent American manufacturers of builders' hardware, bathtubs, and plumbing supplies, gas and electric fixtures and supplies, household enamel ware, etc. Quotations

are desired f. o. b. steamer. Cash will be paid against documents at port of shipment.

Roofing, barbed wire, etc., No. 20892.—A man in the United States writes that a firm in Cuba desires to represent American manufacturers of galvanized iron goods, such as tubing, roofing, and barbed wire; metallic roofing, fencing, wire goods, paints, borax; and cement.

Materials for patent door closers, No. 20877.—A manufacturer of brass door knobs and lighting fixtures in Spain informs an American consular officer that he desires to import wholesale quantities of brass hinges and screws and other materials for making patent door closers. Reference is given. Correspondence should be in Spanish.

Marble, No. 20873.—A commercial agent of the Bureau transmits an inquiry from a man in Italy who desires to communicate with American importers of marble.

Cement, No. 21045.—An American consular officer in West Africa reports that a banker and commission agent in his district desires to receive quotations c. i. f. destination, and full information from American manufacturers of cement.

Window sashes, doors, etc., No. 21089.—An American consular officer in South Africa writes that a firm of manufacturers' agents in his district desires to represent American manufacturers of window sashes, ready-made doors, and fancy casements. Catalogs, price lists, and full information should be sent. Correspondence may be in English.

Ask Modification Building Regulations.

Architects of Augusta, Ga., will ask the city council to modify in several particulars the building code adopted recently. Meetings of architects have been held to consider the matter, and it is stated that while they are of the opinion that the building code would be suitable in some cities, they would not be proper under the conditions existing in Augusta.

The new building code was patterned after the code of the National Board of Underwriters.

The architects who are preparing to protest against the new code are particularly opposed to its requirements in the erection of residences. They claim that to comply with the terms of the code will mean an additional cost of from 15 to 20 per cent to the builder, and they are planning to submit to council a modification of the code which, they claim, will eliminate the excessive cost without increasing the fire hazard.

The gentlemen opposed to the new building code do not deny that it is a timely measure, but they do hold that there is no necessity for so stringent a regulation as to residence construction in a city the size of Augusta.

Need of Ventilation in Office Buildings.

IN view of the fact that a statement made by Harry L. Van Zile, C. E., on ventilation has created some favorable and unfavorable comment, it seems that it might be of interest to present certain facts and figures dealing with the value of office ventilation to the owners and tenants of office buildings. The statement referred to was as follows:

"The time will come, however, when owners of buildings will have to seriously consider the matter of furnishing fresh air for their tenants and it is important for them to know that they will be able to do so without appreciable added cost to their buildings and without increasing their upkeep and operating charges."

Since the advent of the modern office building improvements in general design, safety, convenience and luxurious appointments have been rapid and continuous; these improvements, adding to comfort and efficiency, have served to draw tenants from the old-fashioned offices, notwithstanding the increased rental necessarily demanded per square foot of floor space.

With the increase in the number of new office buildings has come the competition for tenants. Renting agencies do not fail to point out every possible advantage of the buildings in their charge and the public, recently educated in such matters, demands the utmost for the rental it is willing to pay. We now expect to find a prosperous concern located in a building with a spacious and attractive entrance, convenient and rapid elevator service and with office rooms light, comfortable, and provided with all modern conveniences.

On entering these offices in cool weather, however, we almost invariably find that the atmosphere is close and we wonder how the occupants can exist in such manifestly vitiated air. If, in some offices, the occupants attempt to remedy the conditions, draughts are created which blow the papers from the desks or produce an uncomfortable and dangerous impingement of cold air on those who are seated in the neighborhood of the windows. Such phenomena are evidence that no advance has been made in the matter of ventilating individual offices, notwithstanding every attempt has been made to provide as comfortable and attractive quarters as possible. It cannot be doubted that owners of new office buildings would be willing to eliminate this last discomfort providing they knew of some practical method of doing so, especially, if the tenants insisted on having a supply of fresh air as easily controlled as the supply of heat.

It seems as though one of the hardest things for a human being to appreciate is the fact that his

health and comfort would be immeasurably benefited if he were continually breathing fresh air at a proper temperature. We find when entering offices that we immediately notice the bad air, but it seems to be a surprise to the occupants if we mention the fact that it is too warm or too close. With, however, the propaganda for the prevention of tuberculosis, which insists that fresh air is imperative, and with a large and increasing number of articles on ventilation appearing in the daily papers and periodicals of all kinds, we are being educated in this matter so that eventually we will insist on a supply of fresh air in our homes, our transportation vehicles, our offices and factories. When this time comes, which cannot be far away, buildings where this need has been met will be the ones completely and continuously rented.

The writer, with his associates, has had occasion to survey some thousands of office rooms in large cities and presents some simple calculations which will illustrate the importance of this matter of ventilation to both the tenants and the landlord.

While there is much divergence in the design of office buildings and the layout of office rooms with regard to window space, certain general proportions are noted. The old styles have fewer windows for the rentable floor space than the more recent structures. Many measurements have shown that the floor space per window varies from 250 square feet in the older buildings to 150 square feet in the newer ones. We will take, therefore, in our calculations 200 square feet of office space per window. In rooms occupied by a large number of office employes, bookkeepers, stenographers and clerks we find that from fifty to sixty square feet of floor space are allotted to one person, or say four people to 200 square feet of floor space, lighted by one window.

Assuming that this floor space is leased for \$2.00 per square foot and that the average wages of such employes are \$625.00 per year, we find that the rental value per window is \$400.000 and the wages paid to the employes receiving light from such window amounts to \$2,500.000 per year. The writer is able to state that the average window can be so equipped that sufficient fresh air for four people will be introduced into the room without draught or discomfort to the occupants and that such equipment will cost about \$10.00 per window for the ordinary double hung type. With these figures in view, it will be seen that the expenditure is small compared with the rental and wage values of the space benefited.

Statistics made by one large concern show that every cold suffered by an employe costs the em-

ployer \$24.00. This cost is due to lost time under pay and decrease of efficiency during the preliminary and convalescent stages and due to the disarrangement of the working force of the office. If the proper regulation of the temperature and fresh air in such offices should save one cold per year per employe, the saving due to the \$10.00 expenditure above mentioned would be \$96.00. If the offices were under lease for a term of three years, the saving for this time would be \$288.00, which is surely an amount worth considering as a return on such a small investment. While the above mentioned cost of a cold may be excessive in some businesses still there is always a wide margin indicated as to the value of such an outlay for proper ventilation.

There are, however, other returns from the investment that are recognized as of much value by the managers of large office forces. The personal exhaustion and the sleepy feeling that is prevalent in office workers, from the middle of the afternoon until closing time, results in decreased activity, and it is during this time that such errors as are made creep into the work. This condition is so well recognized that many large concerns have recesses of short duration in the latter part of the afternoon, during which time the employes stop work and the rooms are thoroughly aired. This is of course a direct loss of time, which amounts to rather startling figures when calculated on the basis of the yearly wages of the employes that are idle during this ventilating time. If these rooms were continually supplied with fresh air, the actual physical let down would not occur and the office force would have a greater capacity as well as a greater efficiency. These arguments appeal to tenants with the result that many concerns are providing the equipment for proper ventilation at their own expense, and it is fair to assume that if such tenants move to new quarters they will be very much interested in learning whether or not proper ventilation is provided as well as heat and light.

Anything that appears to tenants as desirable must have consideration from owners or renting agents. Whether or not the prospective tenant has given much thought to the ventilation of offices, it seems certain that an argument by the renting agent showing that his building is provided with everything furnished at another building and in addition that the offices are properly ventilated, would give him an advantage in his negotiations. The success of a new building is determined by the rapidity with which it is rented up to or near its capacity, and anything which increases the speed of such renting or the number of tenants secured must be of great value.

In an office building having 10,000 square feet of renting space to a floor and lighted by 50 windows, the rental value at \$2.00 per square foot will be

\$20,000, and the cost of equipment for the windows \$500.00. Two and one-half per cent of the rental value for the first year or five-sixths of one per cent of the rental value for three years for ventilation would disappear very quickly if the office building could be more rapidly filled with tenants.

We feel that this matter is of great importance to the owners and managers of new buildings which will shortly be seeking tenants and it is developing that owners of some of the present office buildings are already considering a complete ventilating equipment for them, as the struggle has come when every inducement has to be made to keep tenants from moving into other quarters in the new building.

Arkansas Plumbers' Convention.

The Arkansas State Plumbers' Association recently held their annual convention at Texarkana, closing with an enjoyable banquet at the Sargeant Hotel.

The program included election of officers for 1916-17, and selection of delegates to the national convention of master plumbers to take place at Atlantic City June 20 and 25. This delegation included O. W. Field, Little Rock; J. J. Spidell, Texarkana, and M. D. Sanders, Little Rock.

The new officers of the association are: B. J. Dunn, Fort Smith, president; James Cuckler, Texarkana, vice-president; C. H. Ledgerwood, Hot Springs, national state vice-president; E. H. Bruce, Fort Smith, secretary; August Reichehr, Fort Smith, treasurer, and George Almeter, Texarkana, sergeant-at-arms.

Louis Heilbron was invited to preside at the banquet by the local plumbers, and his introduction of visiting and local members, as well as outsiders who were present, added cheer to the occasion.

President Sanders said in reply to a call for an address that he would be negligent indeed if he failed to thank the local organization for their rare entertainment. He commented upon the city's growth, stating that 25 years ago was the last time he had been in Texarkana, and remarked upon the changes now evident. One thing he depreciated, that Texarkana, with all her natural advantages, presented such a poor appearance as compared with other cities of her size, because of the condition of her streets.

The speaker took occasion also to speak of the legislative enactment which required cities of the first and second class to adopt certain municipal ordinances regulating the inspection of plumbing, and said Texarkana was behind other cities in this particular, and that he hoped upon the occasion of the next annual convention in Fort Smith, the delegates from Texarkana would bear word that a plumbing inspection ordinance prevails in Texarkana.

Co-Operation is Necessary

THIS paper was read by Thomas R. Kimball before the Eighth Convention of the National Association of Building Owners and Managers at Atlanta, Georgia, in September.

There is much in connection with the building and managing of buildings that concerns the owners and managers and the architect that could be bettered. As an architect I would suggest that there might be a better understanding between the owners and managers of our great buildings and our own not too well understood profession, possibly to the great enhancement of the usefulness of that profession, and possibly with the result that energy, enfeebled by contention, might be strengthened and made irresistible by co-operation. If I am not mistaken no two entities in the useful world of today can be of greater help and use to each other than can the architect and manager.

In Europe it has long been the custom to put an architect in charge of each important building, and to give him extraordinary powers, specially in the veto line. The result has been to develop the practical common sense that has long characterized our profession abroad. The existence of the building manager will probably prevent such a custom becoming established in this country, wherefore, it is only fair and the part of wisdom to cultivate in the new building manager the practice of consulting with his architect friend, and the practice is good for the architect friend, too, and the benefit of such consultation will certainly be felt in the manageability of the next building that the architect friend plans. Indeed, too much cannot be said in favor of this habit of consultation even almost to the point of actual collaboration. An interesting experiment in this line is even now on trial in the new World-Herald building, soon to be erected in Omaha.

As an officer and director of the American Institute of Architects, I find the common lines of effort, as shown by the committee lists of your parent organization and our national body surprisingly congenial, and again I enter my plea for co-operation and collaboration rather than the friction too often met with. If out of an effort at mutual understanding and help should come better planned, more economically operated and better paying buildings and at the same time a more dignified and worthier architecture, surely no amount of such effort would have been thrown away.

At the moment the importance of these civic matters of building owners comes home very forcefully in the proposed compulsory giving over of all below-sidewalk space to the distribution of city utilities, which threatens building owners of Chicago with an investment of some eleven millions to

go wholly onto the bad side of the ledger. There is another item of city government to which building owners and managers and architects might give their joint attention, and that is the city building ordinances. It should be the aim of every one of us to encourage in all proper ways the erection of new buildings, and where hardship is put upon an owner by an unintelligent law, that law should give place to an intelligent one. It should no longer be necessary to provide elevator service according to requirements of cities of ten times our population. Neither should it be necessary to follow structural rules made to fit a local fight between steel and concrete, such as decided the patronage in these branches in many important centers. We should help compile a set of building ordinances that while conserving our public safety, should offer every encouragement to building investment. In other words, to a law that should be intelligent.

In this day of overorganization and superspecialism, it is with great pleasure that I seem to see in your young organization the promise of relief to the architect. In your steadily increasing knowledge of detail lies my own relief from the strain of what has always been a too great responsibility in that regard. If through your careful study of the minutiae of building operation and management there should come to the emancipated architect a greater opportunity to treat his work with greater breadth, I am sure his architecture will promptly show a corresponding and much needed improvement.

There is to my mind no greater danger to the architect and his work than the temptation to drift into specialism, and for that reason I welcome every kind of help that promises to encourage architects to sticking to a general practice handled in a broad way.

While on this subject of detail there is one little suggestion I want to make to the building owner and manager—and that is to look into the present condition of the first high steel buildings that were built. When the skyscraper was an innovation I can well remember hearing of the dangers of electrolysis, vibratory crystallization and corrosion by condensation. We don't hear very much about them now—but that is not because they do not exist—they are all at work and have been from the beginning, and I for one think it high time to inquire into, not how much they have destroyed, but rather how much of the framework of our early high buildings is still intact. And while we have this in mind—why not get together in a protest against the extreme type of skyscraper, and especially so in our Western cities, where God knows

it is neither good sense, nor good taste, nor good business.

Right here it seems proper to say that I find your interests and my interests, and by that I mean our clients' interests, almost identical. We are both important to the great building interests of the country, if not absolutely essential. Is it not, then, our manifest duty to each understand the other, and each become the best possible exponent of the usefulness of the other? It is surely up to the architect to confess his inability to master and keep abreast with the everchanging requirements of building owners and users without help, and it is his duty to point surely and firmly to the fountain-head of such knowledge and experience. In an equal degree it seems to be up to your association to understand architects and be ready to see that you and your clients know how to choose, use and make the most of the architect. To this end, let me set forth a few principles that are infallible:

The architect for important work should always be appointed by direct selection—never by competition. His past performance and record should outweigh all other considerations. He must have knowledge, ability, experience, common sense and integrity. He must have all these and still be easy to work without losing firmness in his convictions. He must be well equipped, too, for his calling today is so ramified that his office must be able to handle intelligently a great number of widely differing sciences.

Therefore, it seems to me that the building manager should guard his client against being influenced by such considerations as "good nature," "help to the needy," "reciprocal patronage," "diplomacy," etc., and equally he must show the best work is done by the architect who, while sufficiently successful to enable him to maintain a good office force, does not operate one of the great plan factories where the soul of the work is regularly strangled by commercialized standardization.

Every building has a right to individuality and every new building should lift the general artistic standard of its city. Be awake to the men who are best fitted to handle your work in the best way, and remember that those very men are often hard put to it, especially in the West, to keep body and soul together without letting the effectiveness of their organizations decline.

North Carolina Builders' Exchange.

The executive committee of the Builders' Exchange of North Carolina in a very busy and interesting meeting has already begun making plans for the semi-annual convention of the Exchange. The dates set for the convention are July 19-20, and the place for convention is Wrightsville Beach.

It has been the custom of the Builders' Exchange for years past to hold its summer meeting at some attractive resore. Last year it was held at Asheville in the mountains. This year it will be held on the seacoast and already much interest is being manifested in the coming convention. While the summer meetings of the Exchange are more of an outing for the members and their families than are the winter meetings, yet it is expected that the convention this summer will be called upon to consider many matters of serious importance to the building business in this state.

Perhaps the most important of these will be the organization of a general contractors' association, a sub-contractors' association and a material men's association. These three associations will be organizations within the Exchange. Each association will meet separately on the first day of the convention and will have its own officers. By this means the work of the Exchange can be handled more speedily and more effectively.

The officers appointed for the first meeting of the associations are as follows: General Contractors' Association, N. Underwood of Durham, chairman; C. V. York of Raleigh, secretary; Sub-Contractors' Association, W. P. Budd of Durham, chairman, John V. Dermott of Durham, secretary; Material Men's Association, V. J. McDaniells of Charlotte, chairman, Luke Sewell, Charlotte, secretary.

The following committees of the Exchange have been appointed: Arbitration committee—J. N. Longest of Greensboro, chairman; E. G. West, Greensboro, and L. B. Brickenstein, Winston-Salem. Membership committee—T. G. Redden of Greensboro, chairman; members of the committee to be selected by the chairman. Finance committee—J. D. Wilkins of Greensboro, chairman; O. P. Makepeace of Sanford; W. L. Harbin, of Lexington. Legislative committee—H. A. Pfohl, of Winston-Salem, chairman; B. MacKenzie, of Greensboro, and W. B. Barrow, of Raleigh. Architects' plans and contracts committee—J. N. Longest, of Greensboro, chairman; H. A. Pfohl, of Winston-Salem, and J. Marvin Hunt, of Greensboro. Entertainment committee—W. P. Budd, of Durham, chairman; C. T. Parish, of Raleigh; John F. Rhodes, of Newbern, and J. A. Underwood, of Wilmington.

All builders in North Carolina who are not now members of the Exchange are urged to attend the next convention of the Exchange and are invited to send their applications for membership to the secretary, Philip Williams, of Winston-Salem. With the support of the builders throughout the state, the proposed associations of the Exchange can be organized so that they can accomplish much good for the members and for the building industry in general.

Pipe for Modern Office Buildings

A LARGE St. Louis building, built less than 10 years ago, equipped with pipe not genuine wrought iron, has a redecorating expense of five thousand dollars a year due to pipe failures. The manager states that hardly a month passes without a pipe failure occurring in some part of the building, to the great inconvenience of the tenants and expense of the owners, writes N. Bowland in "Building Management."

In the Y. M. C. A. Railroad Branch, St. Louis, built in 1907 as a memorial to Jay Gould, at a cost of \$350,000, the piping, not genuine wrought iron, after seven years' service, gave constant trouble and was found to be so badly rusted out throughout that the entire plumbing system (excepting only the cold water lines) had to be torn out and replaced with genuine wrought iron pipe, at a cost of thousands of dollars.

Genuine wrought iron pipe was used in the Hamburg-American Building, New York City, 29 years ago, and has never caused any trouble. Other pipe used on extensions made seven years ago, in the same building, began to develop leaks in two years and has given trouble ever since.

The Tacoma Building, Chicago's first steel skyscraper, was erected in 1888 and genuine wrought iron pipe used throughout in the heating system. After 27 years' service, the great mass of pipe in this building is still in satisfactory condition, while small quantities of other pipe used for repairs during the past ten years has never lasted over five years—much of it only one or two years.

Experience ever following experience thus shows that the importance to the engineer, architect, builder and owner of selecting the right kind of pipe cannot be exaggerated, and the purpose of this article is to show something about the processes and raw materials involved in the making of iron and steel pipe, together with other facts which may serve as a guide in the selection of pipe for water, gas, steam and air lines in buildings of every kind, including private residences.

There are three kinds of ferrous pipe on the market, as follows:

1. Genuine Wrought Iron Pipe.
2. Pipe sold as Genuine Wrought Iron but actually containing a greater or smaller amount of steel scrap.
3. Steel Pipe.

Steel pipe was introduced in 1887 but very little of it was sold until after 1890. Almost simultaneously, pipe made from wrought iron mixed with steel scrap came in the market. A great amount of this kind of pipe is still sold.

Genuine wrought iron is refined from pig iron, by the hand-puddling process. It takes nearly two hours and the expert attention of an expert puddler and his helper to refine a small charge of 560 lbs. of pig iron.

Steel for pipe manufacture is usually refined in the Bessemer Converter, producing from 10 to 15 tons of metal in less than 20 minutes. This explains why there is a difference of from 15 to 30 per cent between the price of wrought iron and steel pipe.

In puddling process, the iron is refined at a relatively low temperature, reducing the iron to a plastic state, whereby a certain amount of desirable slag is retained. In the steel process, the metal is reduced to a liquid state, causing all the slag to be burned out.

Wrought iron pipe therefore contains about 6 per cent of slag by volume, while steel contains none. Herein lies the main reason for the difference between the physical structure of wrought iron and steel, for the slag causes the former, when rolled, to become fibrous, while steel is crystalline. Herein also is to be found the fundamental reason for the greater resistance to corrosion possessed by genuine wrought iron, as will be shown in the next paragraph.

It is unnecessary here to comment on the finer points of difference as interpreted by a study of chemical analysis of the two metals. Suffice it to say that wrought iron has a better welding quality, the factor of safety being 67 per cent as against only 65 per cent for mild steel; wrought iron pipe has, therefore, less tendency to open up in the weld. Further, the fibrous structure of wrought iron enables it most successfully to withstand for decades the shocks and vibration stresses inseparable from service conditions in buildings of every description.

Slag is a glassy substance consisting mainly of silicates and is well known as non-corrodible, electrically inert material.

Slag does not combine with the iron in a chemical sense, but exists therein as a separate and distinct substance, evenly distributed; during the rolling process it becomes elongated into long, fine streaks of bands. A little calculation will demonstrate that there are over 10,000 streaks of slag to a square inch, which means a spacing so close as to defy imagination.

The most advanced research work on corrosion problems undertaken by the U. S. government and other disinterested authorities more and more clearly indicates that the chemical composition of iron and steel is of little consequence in accelerating or retarding corrosion. Thus even the purest steel will, in the presence of water and oxygen, soon be at-

tacked and corrosion progress rapidly through the metal unless checked by some agent like the slag in wrought iron or the graphite flakes in cast iron.

As corrosion progresses in wrought iron pipe, the resistance to it will increase, for more and more inert slag becomes exposed to obstruct its attacks, and the length of the path through the thickness of the pipe is increased by zigzag nature of the obstructed course between the slag streaks.

Wrought iron will, therefore, rust more evenly all over with only slight indication of pitting, while a pit once started in steel pipe will soon deepen and cause leakage, as there is nothing to stop its progress.

In the case of iron pipe containing steel scrap corrosion will advance unchecked through the local areas in the pipe where the steel is present; further, the mixture itself is one which readily produces electrolytic action, due to the difference of electrical potential between iron and steel. It is therefore doubtful that the durability of wrought iron pipe containing steel scrap is any greater than that of steel pipe of any kind.

Galvanized pipe has come into use extensively for plumbing purposes and certainly is well worth the extra price paid therefor. One fact must not be overlooked, however, namely, that the galvanizing is merely a protective coating which may, in a comparatively few years, become abraded or corroded in spots, exposing the metal to corrosion. Ultimately the quality of the base metal will determine

the life of the pipe, and it is therefore just as important to buy the best grade of galvanized pipe as it is to buy the best grade of black pipe.

In recent years a very noticeable reaction has set in in favor of genuine wrought iron pipe. This reaction naturally has not as yet to any degree influenced the sale of cheaper grades of pipe to the public at large who give the matter no thought. But it is very noticeable in skyscraper construction as well as in all other large buildings planned and constructed with expertness and care. Thus probably 85 per cent of all the large buildings in the heart of Pittsburgh, the Steel City, is equipped with genuine wrought iron pipe. In New York City, according to the sales statistics of one of the most prominent pipe jobbers, the local sales for building operations a few years ago were about 40 per cent of genuine wrought iron as against 60 per cent of steel; these proportions have steadily changed in favor of wrought iron, so that an equal quantity of each is now sold in that city for building purposes. Probably over 75 per cent of all the pipe specified in New York City for large, permanent buildings is genuine wrought iron. Steel pipe, nevertheless, will always be able to make a good showing quantitatively, simply because of the necessarily large proportion of people who merely ask for "pipe" and purchase it without a thought to anything beyond size and price. Tremendous tonnages of steel pipe are also used in the oil and gas fields, where durability is usually only a secondary consideration.

What to Consider in Building Design

IN a modern office building there are so many different elements which enter into the construction that each part of the building must be considered with particular care. Each element of construction is represented in the market by different types of material and manufacture, and unless such element is wisely selected, a project which figures well before construction may afford a poor return on the investment in the completed building.

In making up preliminary figures for a prospective building, real estate operators as a rule include maintenance, repairs and depreciation charges as well as interest, promotion charges and operating expenses. The three later items are fixed in proportion to the total expense of the building. Maintenance, repairs and depreciation charges vary materially with different types of construction.

Real estate operators, in considering the construction of a new office or commercial building, have in mind certain points which to them indicate the probable success or failure of such an operation.

In the first place the proportion of rentable space to lot area is one feature which determines the success of the venture. If the rentable area is too small in proportion to the size of the lot, the income of the building will be so seriously curtailed that it will not pay the proper dividends on the investment. The amount of space consumed by corridors, elevators, public rooms, etc., is, of course, the important factor in determining the relation of rentable area to lot size.

Questions of construction or of materials entering into the building, and all general details, are usually left to the architect, but it is also advisable for the owners and real estate operators to be sufficiently conversant with the various types of materials so as to recognize the relative value of the different types of construction.

It is not the first cost in a building that counts in its ultimate success so much as the continual expense of maintenance and repair. For example, in a cer-

tain large office building certain plumbing fixtures were used which were considerably more expensive than any of the competitive fixtures proposed. The owners have justified the extra expense by the fact that not one cent has been spent for plumbing repairs for a period extending over a number of years. In another building belonging to the same owners where plumbing fixtures of a less expensive type were installed there is a continual open account of plumbing repairs. It is not just to assume that in every case it is necessary to secure the most expensive article nor that the highest price is an insurance against defects, but the above illustration will serve to indicate that after careful examination and comparison of expenses in other buildings the owners did exercise good judgment in selecting the fixtures they had installed.

So it is with the heating installation. A battery of boilers—that is, two or three boilers set up side by side—while consuming more space in the lower part of the building, is more efficient in operation, presents a flexible heating unit, and provides insurance against failure of the entire plant in extreme weather. For example, where one boiler could easily accomplish the work desired, it is more advisable to take two boilers of a smaller size with an aggregate heating capacity as may be required, these two boilers being arranged so that in mild weather one may be operated. The life of the boilers in such an installation is longer than is the life of the single boiler previously referred to.

This statement, of course, is true within certain limits. Where boilers are installed of a heating capacity, say, less than 4,000 feet, it would be absurd to put too small boilers in place of one, but from this point upward it may be assumed with reasonable accuracy that a battery of two or more boilers is well worth considering.

The first cost of some of the special vacuum heating or vapor systems seems to the average investor as being prohibitive in a commercial enterprise. Investigation into the relative merits of a gravity system, vacuum system or a vapor system, however, might readily show that the saving in coal consumption and the saving in operating expense of the boiler plant would be sufficiently great to represent good interest on the additional investment.

An analysis of the various kinds of structural elements, such as concrete, terra cotta, plaster blocks, metal partition, etc., is of sufficient importance to be well worth while in the case of a proposed building. The principal consideration, however, by which the relative value of types of construction should be judged is stability and in this connection the quality of permanence would also enter.

Wins Architectural Prizes.

By winning two prizes and three honorable mentions, the department of architecture at the Georgia School of Technology again carried off all the honors in the Southern Intercollegiate Architectural competition. The first prize went to T. H. Henderson, of Savannah, second to E. M. Jackson, of Augusta, and honorable mention to F. D. Burge and M. C. Kollock, of Atlanta; J. W. Wolcott, of Griffin, and C. E. Woodward, of Tulane university.

All but the last named are members of the senior class at Tech. The contest is an annual event open to the senior students in architecture in the various institutions of the South.

The program, written by Mr. Irving K. Pond, an eminent architect of Chicago, called for the design of a "Settlement House and Playgrounds" in a crowded tenement district. This problem was decidedly practical in its nature and more than usually difficult.

Some fifteen or twenty sets of drawings were submitted by the four colleges entering the competition and these were sent to Prof. Everett V. Meeks, of Cornell university, who has been selected to judge and criticise all the designs. In his criticism, Prof. Meeks gave the highest praise to the work of Messrs. Henderson and Jackson, as having answered the program in a most simple and skillful manner. He characterized the work of the other prize winners as being excellent designs with some very slight objections which kept them from being rated with the best.

The two prizes offered are in the form of architectural books to the value of \$25 and \$15 respectively. Each of the competing colleges contributes equally to this amount, the share of the Georgia School of Technology being given by the Georgia Chapter of the American Institute of Architects as evidence of the interest in the department of architecture.

The winning of this competition is not the first prize of the kind which has come to Tech. Two years ago in a similar competition an equally sweeping victory was won, and last year the national competition for the Roman prize was won by a recent graduate of the school, Mr. P. T. Shutze. The prize winning designs were exhibited in New Orleans and Atlanta.

Fire-Resisting Properties of Materials.

An investigation of fire resistance is being undertaken by the United States Bureau of Standards to determine the effect of fire on the full-size wall members commonly used in present building construction. The panel furnace in which the tests will be made is practically finished, and the furnace has been given several workouts on a large test panel of fire brick.

The Personal Side

Write Us a Letter.

We want our readers to feel that The Southern Architect and Building News is their paper, and that what interests them interests its publishers and subscribers. We will therefore appreciate most highly any communications, experiences or suggestions, or marked copies of local papers containing items of news pertaining to the interests of the fraternity.

Lectures on Architecture.

Prof. W. W. Watkin, instructor in architecture at the Rice Institute, Houston, Texas, read a lecture on "The Later Italian Influence in Color and Detail," which was the last of the series of three lectures on "Some Phases of Historic Architecture Expressed in the Buildings of the Institute."

Building Inspector at Paris, Tex.

W. W. Whipkey of the class of 1911 at the Texas A. and M. College, will have charge of the rebuilding of Paris, Texas, having been recently appointed Building Inspector by the mayor of that city.

Whipkey specialized in architectural engineering at the college and later went to Cuero, Texas, where he became a practicing architect.

Change of Name.

The Park A. Dallas Co., architect and engineer, Atlanta, Ga., a partnership composed of Park A. Dallis and L. W. Roberts, Jr., changes its name to the Dallis-Robert Co., under which name all business which is now in progress and all future business will be conducted, according to the arrangements under the former partnership. The members of this firm have engaged in architectural work for a number of years and have paid especial attention to textile mills and water power developments, having designed much of this class of work throughout the Central South.

New Partnership at August, Ga.

Mr. Charles G. Benson, architect, announces that he has taken into partnership with him Miss Martha Wall Andrews, architect. They will practice their profession under the firm name of Benson & Andrews, with offices at 840 Broad street, Augusta, Ga.

Opens Office at Augusta, Ga.

Mr. Philander P. Scroggs, architect, announces the opening of offices at 852 Broad street, Augusta, Ga., for the practice of his profession. Manufacturers' samples and catalogues are desired.

In New Office.

Architect Horace B. Hammond, Atlanta, Ga., has moved to new quarters at 1102 Candler building.

New Officers Atlanta Builders.

The Atlanta Builders' Exchange held a banquet and election on the night of May 3.

About 150 members of the exchange attended the banquet. Just before the speech making began Secretary Carey announced the following had been elected officers for this year:

Charles William Bernhardt, president; P. C. Gilham, vice president; R. M. Walker, treasurer, and Fair Dodd, T. T. Flagler, Hill R. Hoffman, L. T. Whitfield and A. C. Doby, directors.

President Bernhardt urged the members to build in Atlanta a "Builders' Exchange" building which would be typical of the profession.

A resolution was introduced to have a committee visit P. Thornton Marye, a local architect, and get him to change his recent specification of Mt. Airy (N. C.) granite and substitute Georgia or Stone Mountain granite in the building of the northside exchange of the Southern Bell Telephone Exchange.

Some of the members of the exchange, led by T. T. Flagler, bitterly opposed any step that would appear to be dictating to an architect what sort of granite he should specify.

However, despite opposition, a committee was named to visit Architect Marye and officials of the telephone company to urge them to patronize home products.

Jacksonville, Fla., Local Plumbers.

At a well attended meeting of the Jacksonville Chamber of Commerce, the Jacksonville Master Plumbers' Association was organized. David Mayfield was named president, G. O. Langston, vice-president, and Joseph W. Fowler, secretary.

The Jacksonville body will be the hosts of the Florida Plumbers' Association here during May. The state organization met in the summer of 1913, at which time there were many trade representatives present as well as delegates. C. G. Belote, of Jacksonville, is president and Joseph W. Fowler secretary of the state organization.

The object of the local organization is to promote the best interests of the trade in every way possible.

Following the organization plans were immediately set in motion to royally entertain the state association during the approaching convention.

Some Latest Types of Office Buildings



The Busch Building, Type of Dallas Skyscraper Office Building.



Southeastern Life Insurance Building at Dallas.



National Bank of Commerce Building, Norfolk, Va.



Paul Gale Greenwood Bldg. and Fairfax Hotel, Norfolk, Va.



Tennessee Trust Building in Foreground and Central Bank and Trust Co. Building, Memphis, Tenn.



Citizens National Bank Building, Macon, Ga.
W. L. Stoddart, New York, Architect.

Oak Flooring and Floor Laying Troubles

By W. L. Claffey.*

OAK flooring troubles originate from many causes. Oak flooring is made in a scientific way, and the different processes from the rough oak lumber to the finished flooring are subjected to the most careful inspection and scientific tests. The object of this article is to cite actual cases that have come under our observation through an expert inspector whose sole duty is to investigate complaints on oak flooring. This inspector is employed by manufacturers, and has qualified as an expert on oak flooring.

In Detroit not long ago he was called upon to examine an oak floor that had bad crevices every eight inches. He went to the cellar and found that the sub-floor ran parallel to the oak flooring. The boards in the sub-floor were eight inches in width. The sub-floor shrank, as most sub-floors do, with the result that it made the crevices appear in the oak flooring. The floor layer that laid the floors remarked that he never laid oak floors before and thought that he was laying them the proper way. The contractor was forced to take up the oak floors at quite an expense and new floors were laid the proper way, or at right angles to the sub-floor.

In Chicago recently oak floors were laid in a large apartment building while the doors and windows were not yet in place. The flooring was in bundles for about two weeks spread about in different rooms, and rain and snow drifted in on the bundles. The result was that many pieces absorbed moisture near the ends, and when the floors were laid bad looking crevices appeared. No attempt was made on the part of the contractors or owners to heat the building. The time was in December. The owner claimed that he was unable to get the heating system installed and did not know that it made much difference whether a building should be heated or not for oak floor laying. The superintendent of the job representing the architect made no report to the architect on this condition. Some of the floors had to be torn up and replaced with new floors at quite an expense to the owner.

A case in Toledo, brought to light where a floor layer used a heavy sledge hammer in driving up pieces. He drove the pieces up so tight that the floor had the appearance of waves. The superintendent of the job informed the floor layer that he was driving it too tight, at the time, but the warning was not heeded. The result was that the whole floor had to be torn up and replaced.

At Cleveland a few months ago a beautiful oak

floor was badly damaged by improper nailing. The nails were driven at an angle of about 90 degrees, which made it almost impossible to drive the piece up snug. Many bad crevices appeared. When the owner was advised that nails should be driven at an angle of about 50 degrees and when it was demonstrated to him in some of the rooms that had not been laid how the strips drove up after nailing at this angle, he compelled the contractor to tear up the floors in three rooms. They were replaced at the expense of the contractor. The contractor, we found out later, was a novice at the floor laying game; in fact, it was his first venture.

In Evanston, Ill., a few years ago, oak floors were being laid, and the floor layer complained to the owner that pieces would not fit up snug. Our inspector went to the job and found that the flooring layer was not driving the nails below the tongue. Most of these nails extended one-fourth of an inch above the tongue, and the result was that it held the next piece out. As soon as the nails were countersunk or driven down further the pieces fitted up perfectly. The case brought out the fact that this was about the second job the floor layer ever had. The owner now is suing the contractor for new floors.

At St. Louis, Mo., about six months ago, a ball-room was laid with oak flooring amid the worst possible conditions. The owner issued instructions that the floor should be finished by Christmas in order to have a ball that was widely advertised. The contractor was an experienced flooring man and informed the owner that he would not, under any circumstances lay the flooring, owing to the plaster being green and damp, together with the sub-floor being covered with wet cement. The owner then took the matter into his own hands and cancelled the flooring contract with this contractor and engaged another one and had the floors laid, with the result that in two weeks time the floor started to buckle up making it unfit for a dance floor. The owner then went back to the first contractor and gave him full authority to go ahead and make a good job, regardless of the time of opening up. The entire floor had to be torn up and replaced at an enormous expense to the owner.

Another case in Springfield, Ill., brought out the fact that oak flooring was laid even before the plaster work was started. Thin building paper was placed over the oak floors, and the plaster work was finished. In a very short time the oak flooring started to bulge up in revolt, caused by the moisture absorbed from the wet plaster. The eight floors in

*Editor's Note:—Mr. Claffey is Secretary of the Oak Flooring Manufacturers Association and the cases that he cites should prove valuable to the manufacturer, to the lumber dealer, to the architect, and the builder.

the house had to be torn up and replaced. In this particular case the architect was entirely to blame, as he issued instructions to the contractors to have the oak floors laid first and plaster work afterwards.

At Kansas City this winter a beautiful oak floor was badly damaged in a large, expensive residence, chiefly caused by the dealer who stored the oak flooring in an open shed exposed to the elements. All the ends absorbed moisture fully one-sixteenth of an inch. When this flooring was taken to the jobs it naturally left large crevices starting at the ends down to about twelve inches. When all the facts of the case were presented to the architect, the architect placed the blame upon the dealer for the improper housing of oak flooring.

Floor layers, before they start on an oak flooring laying job, should invariably make a rule to do some examining work before proceeding. First to examine the condition of the plaster, and the sub-floor to ascertain if thoroughly dry. Second, to examine the oak flooring to find out if it has absorbed any moisture at the lumber yard, or in transit. Third, if in winter, to see that the temperature of the rooms is about 70 degrees and that they have been that warm for a week or ten days with the oak flooring in bundles in the different rooms. If this is done it certainly would eliminate a great many of the flooring troubles and save unnecessary expenses.

To Specialize in School Architecture.

The St. Louis Board of Education has accepted the resignation of William B. Ittner as architect. Mr. Ittner held the position of commissioner of buildings and architect for nearly 18 years previous to 1910, and since that time as architect only. Mr. Ittner resigned to engage in private practice.

Credit is given Mr. Ittner for the modern type of school buildings which St. Louis has. These are noted nationally as examples of compact economic planning, refined, dignified design and substantial construction. In his work for St. Louis he developed several entirely new types of school plans that standardize construction and equipment.

In his practice Mr. Ittner proposes to specialize in school work. He has been connected (as supervising architect) with the design of large schools in Dallas, Tex., high school buildings in Nashville, Tenn., and school buildings of Jacksonville, Fla., the latter involving an expenditure of \$1,000,000. His office will be in St. Louis, Mo.

South Carolina Plumbers Met.

Columbia was selected by the Master Plumbers' Association of South Carolina as the permanent meeting place for the annual conventions of the organization. This action was taken when master plumbers from all sections of the State gathered for their annual conference. Forty visitors were in at-

tendance in addition to the 14 members of the Columbia local.

Though much business was transacted, the chief features of the day were of a social nature. At 2 o'clock a complimentary luncheon was served at the Jefferson Hotel by Lorick Brothers and the Columbia Supply Company. A barbecue was given by the Southern States Supply Company at Irwin Park at 6 o'clock in the afternoon. In the evening the Columbia local entertained the visitors at a theater party when the Shakespearean masque was presented at the Columbia theater.

During the business session all officers were re-elected. These are: A. D. Palmer, Columbia, president; C. P. Cary, Charleston, vice-president; R. R. Woods, Columbia, secretary, and Julius E. Smith, Charleston, treasurer.

Two delegates were elected to represent the South Carolina group at the annual national convention in Atlantic City June 21, 22 and 23. R. R. Wood of Columbia and E. F. Daggett of Georgetown will attend the national meet.

The South Carolina Association was organized in Columbia in 1913. The convention of the following year was held in Charleston. The association met in Greenwood one year ago.

Fla. Architecture Board Resolutions.

The following was adopted by the State Board of Architecture of Florida:

"The board holds that all plans and specifications prepared by an architect, for use in the state, shall be at a standard sufficient to guarantee the public against misinterpretation of the plans on account of plans and specifications not being clear or not showing essential parts of the construction which is essential to secure safety in the construction of buildings.

"The board holds that it is dishonest for an architect to prepare incomprehensible plans or plans that are not substantially complete or plans that are not accurate or that do not show the construction of the structural parts or members of the building. The act provides that all who desire to practice in this state shall pass an examination and the board has it in its power to insist that all who practice in this state shall prepare plans and specifications which plans and specifications shall meet a standard set by this board.

"In other words all plans and specifications furnished to the public by architects should meet a certain standard not necessarily the standard set by the class examinations, but by the general practice of architects in the state; and the board holds that this board can revoke the architect's certificate if he or she makes a practice of selling plans to the public that are below the standard."

Competitions.

The process of holding a competition in order to determine who shall be the architect of a building has not received very enthusiastic encouragement of late years. It is thought that competitions, unless they are very strictly conducted, do not produce the best results. The American Institute of Architects has studied this subject very carefully and has drawn up definite set of regulations governing the conduct of competitions, which if they are followed in good faith, will give results which are entirely satisfactory both to promotor and competitor. The opinion has been growing, however, that a competition is seldom necessary, and that it is much better and far simpler to employ a capable architect outright and trust to his known skill and good judgment, says Building Review.

However much may be said against competitions, we believe that they do good in advancing the standards of architectural design; this much may certainly be affirmed in their favor. When competitions were in vogue the architectural magazines were much more interesting than they are today. The publication of the designs submitted by prominent and talented architects to which the presumption is they had given their best thought toward the working out of a plan for some important building or group of buildings, gave an opportunity to compare and contrast the respective merits of their solutions, and from an educational standpoint, there is no more profitable exercise than this. Here was an opportunity for designers to work out new ideas and for students to learn, not only what their new ideas were, but also gain new points about rendering and presentation.

The indifference that architects show toward competitions is based very largely on past experiences. Many of them have thrown away an appalling amount of time on competitions which were proven to be unfair, unjust and without intent to the part of their promoters. The intent of the rules drawn up by the A. I. A. is to give assurance that the real object of the competition is to select a design, and that the author of the design will be the architect selected to do the work. No promotor who is acting in good faith could have any objection to the institute's regulations, since his own interests are entirely safeguarded, and the competitors on their part would also be satisfied to enter their services.

We repeat that the educational advantages of competitions are very great. They help to advance the standards of design as a whole, they spur on the architect himself to greater efforts in his profession, they often bring to the front obscure men of genius, and last, but not least, they add immeasurably to the interest of the current architectural magazines.

Fireproof Roofs for Atlanta Buildings.

An ordinance by Councilman Fred Woodall providing for fireproof roofing on all buildings erected within the city limits of Atlanta excepting dwellings and similar buildings, has been introduced at a meeting of the general council and referred to the fire committee for further consideration.

The ordinance sets forth that all buildings in the city limits except dwellings, frame buildings, buildings not exceeding two stories in height or thirty feet and twenty-five hundred square feet in area, providing the same are not used for factories, warehouses or mercantile purposes, shall have roofs of tile, brick, slate, tin, iron, asbestos or built up felt roofing with gravel or slag surface, which shall rank as class A or class B under the test specifications of the national board of fire underwriters.

The roofing shall be of such material as not to rank lower than class F under the test specifications of the underwriters.

It further provides that a layer of felt at least 1/16 of an inch thick shall be placed between the metal roofing and the supporting woodwork. The wooden plank and sheathing of roofs shall not, in any case, be extended across side or party walls.

The ordinance does not prohibit the repair of wooden shingle roofs now existing, providing the building is not increased in height and provided further that repairing shall not be so extensive as to amount to a renewal of the roof.

The ordinance is to become effective January 1, 1917.

Netherlands Trade in Portland Cement.

The Dutch State and city governments, as well as the railroad companies and other big concerns, seldom purchase cement themselves, but leave the buying to the contractors, subject, however to their approval. The Government has no testing laboratories of its own, such work being done for it by private concerns. The German specification of 1909 is a generally accepted standard of quality for ordinary construction.

Cement is delivered almost exclusively in cloth bags containing 50 kilos (110) pounds gross weight. The bags are charged to the buyer, subject to full credit upon their return to the cement manufacturer. There is no import duty on cement.

The cement trade of Holland is in the hands of a large syndicate consisting of Dutch, German, Belgian, English, and Norwegian firms, but I learned the other day that a Dutch company is about to be formed with the object of importing American goods in general and Portland cement in particular. The name of the chief promotor of this new concern may be had upon application to the Bureau of Foreign and Domestic Commerce or its district offices. Refer to file No. 73994.

Beautifying a Memphis Street.

Memphis, Tenn., is another Southern city which has caught the "City Beautiful" spirit, according to the Memphis Commercial-Appeal. That newspaper tells this story of the work being done in that city to help the good work:

The vision of the city beautiful enthusiasts of a Broadway free from advertising signs with bare spots planted in shrubbery, and the high, ugly mud banks covered with honeysuckle vines, is already beginning to be realized.

The cleanup committee of the building trades committee of the B. M. C. made a tour over Broadway and found that the railway avenue from Fourth street to Neptune street is now being beautified and all ugly spots either removed entirely or else shrubs planted around them so that eventually they will be hidden. The Southern Railway made the improvements.

A superintendents' committee has been appointed by all the railway officials, and this committee has entered heartily into the city beautiful idea. On the committee are E. L. Magers of the Frisco, F. T. Proctor of the Southern, and W. C. Rapp of the Union Railway.

J. J. Weatherford, the city engineer, is preparing a blue print map of all Broadway, which will show the owners of the abutting property and the occupants. With this map the committee will be able to go about its work efficiently and intelligently, and also will be sure to approach the proper parties in asking that improvements be made.

In beginning the city beautiful campaign, Mrs. A. B. DeLoach, chairman of the department of civics of the Nineteenth Century Club, who began the work of beautifying Memphis the past year with a large flower market in Court Square, will be assisted by some of Memphis' most popular young society girls and members of the younger married set.

These young women will have booths in some of the leading stores, from which they will distribute pamphlets explaining the city beautiful campaign and urging the help of the public.

Complain of Cement and Asbestos Rates.

A complaint has been filed with the Interstate Commerce Commission by the Baltimore Roofing and Asbestos Company against the Western Maryland and fifteen other carriers in the East and Middle West, involving shipments of cement and asbestos material from Maryland points to New England, New York, New Jersey and Pennsylvania points. The complaint is that through routes and joint rates have not been made upon these articles, and that the refusal of the carriers to make such routes and rates has subjected the shippers to excessive and discriminating rates.

Structural Steel Column Tests.

An important investigation now in progress at the Bureau of Standards, which is of value to the engineering and architectural professions, consists of a series of column tests which the bureau is making in co-operation with the steel-column committee of the American Society of Civil Engineers and the steel-column committee of the American Railway Engineering Association.

In addition to these column investigations, a large number of steel bridge columns have been tested in co-operation with prominent engineers. The columns are facsimiles of members from long-span bridges which are being erected or soon will be erected in America. The reports on the data and results of these tests, when completed, will be very valuable to bridge designers, as such data on large size columns have not been available before.

The purpose of these tests is to determine the best forms of cross-section of columns and also to correct or confirm the formulas used by engineers and architects for calculating the strength of columns. Not alone are such formulas valuable for determining the loads which can safely be carried by the columns used in various structures, but they also enable the designer of columns to make the most economical use of the steel employed in their construction.

Although the testing of these columns consumes much time, since it must be done very carefully in order to secure reliable results, this investigation has made good progress. More than three-fourths of the two series of columns have now been tested. The results show that, with one exception, the columns made of the heavier structural shapes fail at loads per square inch of cross-section that are about 10 per cent less than those producing failure of columns of the same type but of lighter section. The work has not progressed far enough to admit of drawing any definite conclusions from the tests, and it may be necessary to again extend the present program of the investigation before arriving at a final interpretation of the results.

Electric Refrigeration.

Electric refrigeration as well as electric heat and electric light can now be supplied the model house. Two white enameled electric refrigerators exhibited at the Grand Central Palace, New York, were somewhat larger than the average household ice box, and, without aid from the iceman, could be cooled much below freezing point, while any temperature desired could be automatically maintained for weeks or months. The apparatus is put into action by connecting to an electric light socket. On the top is a small electric motor and an inverted bowl-like tank containing compressed air and ethyl chloride, and the chamber usually given up to ice is fitted with a

series of vacuum tubes. The liquid ethyl chloride, passed at a high pressure through a minute aperture into the vacuum tubes, vaporizes, with great expansion and absorption of heat, thus cooling the surrounding air. A thermostat control includes a strip of metal that on expanding with rising temperature makes electrical connection at the degree for which it is set, and thus starts the motor, which is stopped when the cooling and contraction of the metal breaks the circuit. This form of refrigerator, weighing about 150 pounds, is said to use about two and one-half kilowatts of current to give the effects of 100 pounds of ice.

Blue Prints and Paper Going Up.

The war threatens to strike the United States in a new place. The price of blue print paper and blue prints is expected soon to advance sharply. It will affect the manufacturer, railroad engineer, architect and builder, and many others. The situation is due to the increase in the price of all chemicals employed in the blue process, and also to the big advance in paper.

Blue print paper is coated with an emulsion of iron and potash salts, which are combined by the action of light, and upon immersion of the paper in water the coating is precipitated on the surface of the paper in the form of Prussian blue.

Red prussiate of potash, which is the form of potash used in the blue process, has been made exclusively in Germany. Before the war it sold for 19 cents a pound; today it is practically unobtainable at \$7 a pound, or an advance of 3,500 per cent. Citric acid, from which the citrates of iron and ammonium are made, has advanced 150 per cent, and oxalic acid from which the oxalates of iron are also made has advanced 1,000 per cent in the same time.

The rise in the price of the cheaper grades of paper in which wood pulp is used is due to the pulp shortage caused by the scarcity of all paper-making chemicals, and to the Swedish embargo, prohibiting the exportation of chemical wood pulp. The better grades of paper, made of all rag stock, have likewise advanced sharply, due also to the price of paper-making chemicals and to the shortage of supplies of rags.

Lumber Decision in July.

Information was received in Memphis by J. H. Townshend, secretary-manager of the Southern Hardwood Traffic Association, that the Interstate Commerce Commission will decide, probably in July, the case involving proposed advanced freight rates on hardwoods from southern producing points to northern markets.

It had been expected that the commerce commission would begin its summer recess as usual, about

July 1. The commission, however, rejected the offer of the carriers voluntarily to resuspend its tariffs from Sept. 1 until Jan. 1, 1917, and announced it would proceed with its business without summer recess.

Lumber Rates Suspended.

Interstate Commerce Commission has resuspended until Sept. 30, 1916, all tariffs involving advanced rates on hardwoods from Memphis, Arkansas and Mississippi points to Central Freight Association and western trunk line territories, now under investigation at Memphis.

Ordinance Not Repealed.

The city commissioners of Montgomery, Ala., at a special meeting declined to repeal, as they had been urged, the anti-shingle ordinance that they adopted about a month ago, and the measure has become effective.

The ordinance prohibits the use of wooden shingles in certain sections of the city in and close to the business districts and was adopted after a long controversy.

The advocates of the ordinance declare it will save the property owners hundreds of dollars in fire prevention and may eventually mean the reduction of fire insurance rates, especially in the business section of Montgomery.

Reduce Hardwood Rates.

New tariffs which will provide substantial reductions in rates on hardwoods from Memphis to Seattle, Portland and other points taking the same rate, soon are to be issued by the carriers.

The rates will be reduced from 75 cents to 60 cents, minimum of 60,000, and to 70 cents, minimum 40,000 pounds. The differential observed in fixing present rates will be used in making the new tariff.

Efforts have been made for some time to bring about these rate reductions, which will enable southern hardwoods to compete with Japanese oak in the northwest.

On Building Conditions in Georgia.

An inspection into the building conditions of all leading Georgia cities will be made by Atlanta's assistant building inspector, Louis P. Marquardt.

Mr. Marquardt is preparing a lengthy report on building and labor conditions throughout the state of Georgia. He will get reports from each city of importance, reviewing the entire building situation and discussing at length local labor conditions.

When all the data is gathered Mr. Marquardt will write an essay on the building industry in Georgia and labor conditions.

Trade Notes of Interest

New Faces This Month.

The attention of our readers is directed to these new advertisements appearing this month, all representative in their several lines and worthy the patronage of those interested:

John F. Byers Machine Co., Ravenna, Ohio, make Byers Universal Hoist suitable for all manner of contracting work, either for steam or electric power. Ask for their catalog.

Appalachian Marble Co., Knoxville, Tenn., quarry all grades of Tennessee marble. Estimates cheerfully furnished. Samples on request. Ask for them.

Standard Thermometer Co., Boston, Mass., are makers of indicating and recording thermometers. Catalog and prices gladly furnished upon request.

A. A. Jackson Machine Co., 1766 Broadway, Denver, Colorado, are manufacturers of a floor dressing machine which combines a plane, a cabinet scraper and a polishing device all in one and for the price of one. Ask for further particulars.

F. Edw. Snyder, Massillon, Ohio, makes the Anti-Sag Screen Door Brace which can be applied in a minute at a trifling cost.

Hamlin Impervia Co., 451 West 40th St., New York City are manufacturers of Impervia, the well-known waterproof product. Waterproofs any gritty surface. Ask for booklet and further particulars.

John Faragher, 809 Brooks St., Madison, Wis., make "Safety First" steel scaffold brackets. Prices and circulars sent on request.

Wright & Alexander Co., Rochester, N. Y., make "Wrialco," a patented concrete insert. Descriptive matter and prices on request.

Self-Clinching Nail Co., 46 North 4th Street, Philadelphia, Pa., make nails for attaching grounds to hollow tile and walls.

Chas. F. Lorenzen & Co., 140 Reaper Block, Chicago, make Lorenzen tiles and mosaics. Write for folder No. 54, using coupon, which is attached to the ad.

Standard Portland Cement Co., Birmingham, Ala., manufacture "Standard" brand of cement for modern highways and other purposes. Write for booklet "Concrete Highways" which is sent free upon request.

Bristol Metal Mfg. Co., Bristol, Tenn.-Va., manufacture the "Bristol" brand of metal shingles. Ask for their catalogue.

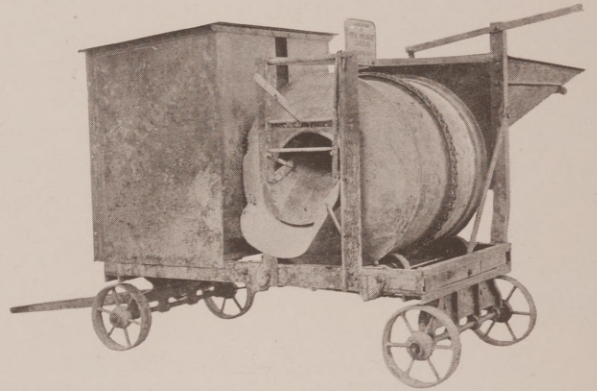
An Unusual Test.

The South Bend Watch which runs frozen in a cake of ice has nothing on the IDEAL Cincinnati Mixer, manufactured by the Ideal Concrete Machinery Co., Cincinnati, O., illustrated herewith, which is in excellent condition and in constant use

after laying at the bottom of the Ohio River for 93 days.

Last Fall, Mr. B. A. Leonard, a contractor, was using this mixer on culvert work on the Ohio River at the mouth of Rapid Run Creek. When the river rose over night after a heavy rain and washed the mixer along with all other tools down the river, turned it over several times, until finally striking a projection, it was tightly wedged in and lay in 15 feet of water for 93 days.

This Spring the mixer was brought into the factory, cleaned up and painted, and at a cost of less than \$50.00 for the whole job was returned to Mr.



Leonard in practically as good shape as the day it was first delivered to him from our factory.

The illustration shows the mixer after being cleaned up, but before it was painted. After getting a coat of paint it looked like a new machine.

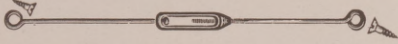
In a letter referring to this incident, Mr. Leonard says "I was putting a concrete lining under the limestone masonry arch in a culvert at Rapid Run, this city, and had been working about four weeks. Everything had been running smoothly until one afternoon (Dec. 18) it started to rain. When I arrived on the job the next morning all the tools were washed down the Ohio River and the mixer was also carried down the river about 25 feet, struck a projection in the culvert and turned over and was wedged in such a manner that it could not be moved one way or the other.

"It had been in the water for 93 days before we could get it out and I thought it would be a total wreck and beyond repair. I was agreeably surprised, to say the least, to learn what the expense was for repairing the mixer, as I figured that your bill would be twice as much. I received the mixer today from your factory and it looks and acts like a brand-new machine."

A concrete mixer is undoubtedly subjected to more severe use than any other machine, but it is doubtful if many concrete mixers could be used after undergoing the severe treatment that this one has.

Anti-Sag Screen Door Brace.

The Anti-Sag Screen Door Brace, manufactured by F. Edw. Snyder, Massillon, Ohio, and illustrated herewith, is extra long (42 inches) and straightens up any door; can be applied in a minute. It does the work easily and can be applied to all kinds and



sizes of doors. It is made of steel, finished in black enamel and can be attached to either upper or lower panel of the door. It is for sale by all hardware and screen door dealers. The cost is trifling.

Users of Savill's Faucets.

Thomas Savill's Sons, dealers in Plumbers' Supplies, 1310 Wallace street, Philadelphia, for the month of April made these installations of "Savill's Faucets."

One hundred for Glen Mills School, Chester county, Pa.; 28 for Thommens' Restaurant, Philadelphia; 6 for Burlington County Hospital, New Jersey; 48 for Philadelphia County Prison; 24 for Leland Stanford University, California; 2 for the "Flower Observatory," University of Pa.; 18 for Fry residence, Pa.; 250 for Victor Magan Operation, Philadelphia; 180 for the McClatchey houses, Milborne, Pa. And in addition, plumbers' supplies for four other large buildings in Delaware county, Pennsylvania.

Cincinnati Mixers Catalogue.

Catalogue No. 27 covering Ideal Cincinnati concrete mixers, made by the Ideal Concrete Machinery Co., Cincinnati, Ohio, has just been published. It also covers their complete line of mixers. The publishers will be glad to send same upon request to anyone interested.

Slate the Best Known Article for Roofing.

Facts should be known by all architects, contractors and owners of buildings as to the true statements made concerning the coverings used for buildings.

Slate is a natural product taken from Mother Earth. No mixtures of any kind, but simply taken out from its bed like coal, granite or marble, other than it has the particular nature to be split in thin sheets, and then with dressed edges made ready for roofing.

In this country of ours, slate lasts longer than any other roofing. Many roofs are to be now seen where the slate is in good condition after being on the roof for over a hundred years.

The Genuine Bangor Roofing Slate has been manufactured for over sixty years and today the first slate manufactured in the oldest quarry is in good condition, having covered the buildings for

sixty years, standing against all storms, tempests and hurricanes that have come in that time.

Where can any of the so called composition roofing measure up to this? However, many are the articles written and statements made concerning the vast cost of slate roofs by the competitors of roofing slate, none of which are true. The slate manufacturers stand ready to prove them false, and every owner of a building who has a good slate roof on their building will back the statement that slate is the best roofing material when properly put on.

Disappointment is found in every business, and roofers have deceived the owners by doing their work improperly, which has in some instances condemned slate; but if roofing slate is put on properly, nothing can beat it for cheapness, permanency, beauty, cleanliness, everlastingness and no repairs, and to know that you own a building that is safe from fire when there is fire all around you. Unlike buildings that have shingle roofs, slate resents the fire and you feel safe. Therefore, be prepared by applying roofing slate to your buildings and feel that you are perfectly safe.

Newman's New Sign Catalog.

The Newman Manufacturing Company, 717-721 Sycamore street, Cincinnati, Ohio, with branch plants located at 108 W. Lake street, Chicago, Ill., and 101 Fourth avenue, New York, N. Y., have just issued a new catalog describing a complete and varied line of brass and bronze tablets, signs, name plates (both in raised and sunken letter) also interchangeable letter signs, building directories, etc. Copy of this catalog will be gladly furnished to any interested party upon request.

The Newman Manufacturing Company has been established since 1882, more than 32 years, in the production of brass and bronze goods, signs, tablets,



display fixtures, etc. This company was originally started by Samuel Newman in 1882. With the acquisition of his three sons, Sidney J., Walter J., and Emil C., into the business, the result was that the volume of their business has grown to such an extent that they were obliged to open up a New York factory, located at 101 4th avenue, and another at Chicago, located at 108 W. Lake street. This firm's products are shipped all over the world, and are in

demand because of the high quality of work they turn out.

They also manufacture brass poster frames and easels, brass and bronze railings, metal band grilles, adjustable light fixtures for factories, mechanical window display devices, changeable show windows operated in elevator fashion, metal display stands, and any of these catalogs can be had upon request.

S. J. Newman advises that their representatives on the road are turning in many orders, and that they report excellent prospects for winter business.

The Powell "White Star" Double-Disc Gate Valve.

Credit for developing the Double-Disc Gate Valve which for years has given the most satisfactory service, is universally conceded to the Wm. Powell Company, Cincinnati, O.

The Powell "White Star" Double-Disc Gate Valves are made with and without inserted renewable seat rings in two styles with rising and non-rising stems.

These Valves are well proportioned, the metal is distributed to give uniform strength throughout, and are cast of the best steam bronze composition, however, they are also cast in iron body from 2" to 12" inclusive with bronze trimmings.

As manufacturers of high grade valves, the perfect service of which depends upon the construction of the Discs as you will notice in the sectional cut of this valve shown here, they are counter-balanced and constructed with a ball and socket back, making them smooth working and self adjusting.

It is but natural that this firm has ever been on the alert to obtain the highest state of perfection for their product. Neither time, labor nor talent have been spared to produce the best double-disc gate valve on the market.

The progressive policy of the Wm. Powell Co., coupled with the fact that as pioneers

in valve construction, have acquired a thorough knowledge of necessary requirements to produce this high grade valve.

Actual results obtained from years of experience has enabled them to combine the features embodied in this double-disc gate valve.

Heretofore it has never been expected that a double-disc gate valve could compare with a globe valve in seating or wearing qualities.

But with the Powell "White Star" Double-disc gate valve we can assure our engineering friends

that it is fully equal, if not superior' as a tight seating proposition, to the very best construction of globe valves on the market. (Excepting the Powell "White Star" Globe Valve.)

The improvements in the above double-disc gate valve will be readily appreciated by every intelligent and up-to-date progressive engineer.

As in all articles bearing the Powell trade-mark they are sold under an absolute guarantee as to their mechanical perfection, and superior workmanship.

The Gate Valve booklet recently issued to the trade may be had from the company by any engineer upon request.

New Location.

Smith & Hemenway Co., the tool manufacturers, are now located at their new address, 99 Chambers street, New York City.

Barber's Wall Ironing Board.

A necessity in the workshop or the home is Barber's Wall Ironing Board made by Kitchen Fixture Company, Everett, Washington. It is architecturally an ornament and is built in the wall, many architects specifying it for residence and apartment houses. It is complete in every detail. The sleeve board is ready for instant use, and as quickly removed out of the way. The metal iron holder is attached to the board and even with the top, thus allowing iron to slip on to holder without raising from the board. This feature alone means much to some women.

Change of Name of Sandusky Portland Cement Co.

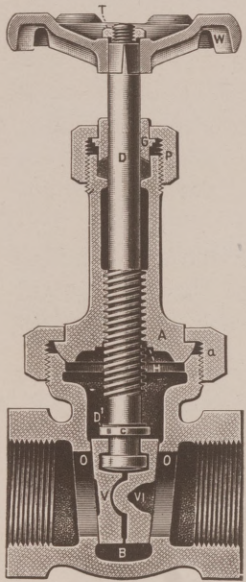
The corporate title of The Sandusky Portland Cement Company, Cleveland, Ohio, has recently been changed to that of "The Sandusky Cement Company," the officers and directions in the new company being the same as those of the old concern. There will be no other changes of any kind whatever, the business of the company being carried on as formerly, but the trade is requested to make special note of the new title and make use of the same in all correspondence.

Catalogues Requested.

W. D. Cook, Jr., Landscape Architect, Los Angeles, Calif., is preparing plans for a two-story residence to be built at Daytona, Fla., of stucco exterior, shingle roof, blue-gum trim, gas radiators and tile mantels. He asks catalogues be sent him.

Factory to Chicago Heights.

The Zouri Drawn Metals Company announce the removal of their factory and general offices to Chicago Heights, Ill., and their Chicago sales office to room 927 First National Bank Building, Chicago.



Building and Construction Department

Bank and Office Buildings.

Bunnell, Fla.—I. Moody will erect bank and office building at Main and Moody Blvd.; 50x80 ft.; 2 stories; fireproof; tile floors; electric lights; cost \$10,000 to \$12,000; construction begins July 1.

New Smyrna, Fla.—State Bank of New Smyrna has plans by A. E. Lewis, 24-26 Real Estate Bldg., Miami, Fla., for bank and store building; pressed brick and terra cotta; 2 stories; banking quarters to have 2 vaults, tile floors, compo interior decorations; upper floor offices; store occupied by Herrick Jewelry Co.; plans ready about June 15. Address Archt.

Newnan, Ga.—Newnan Cotton Mills has plans by Horace B. Hammond, 1102 Candler Bldg., Atlanta, for office building; 40x70 ft.; brick veneer; mill construction; tile roof; 2-pipe vapor Warren Webster system of heating; city lighting; contract let about May 25. Address Archt.

Covington, Ky.—German Mutual Fire Insurance Co. is having plans prepared by Saml. Hanaford & Sons, Hulbert Block, Cincinnati, for office building; 3 stories; cost \$125,000.

New Orleans, La.—DeSoto Realty Co. will erect store, office and theater building.

Fayetteville, N. C.—Stein Bros. are having plans prepared for store and office building. (See Stores.)

Winston-Salem, N. C.—P. H. Hanes Knitting Co. is reported to erect office building at Hanes Station.

Snyder, Tex.—Snyder National Bank will erect building; 2 stories; 40x100 ft.

Business and Store Buildings.

Athens, Ga.—J. E. Stewart and Dave F. Paddock have plans by Warren C. Powell, Candler Bldg., Atlanta, to remodel store building; 2 stories; terra-cotta front; tile roof and floors; steam heat; semi-indirect electric lights; cost \$3000; bids opened about June 15. Address Archt.

Eatonton, Ga.—T. G. Green will erect storehouse after plans prepared by Architect P. E. Denis, American National Bank Bldg., Macon, Ga.; one story; brick; face brick; metal roof; cement floor; skylights; cost, \$3,000. Owner has plans and is taking bids.

Fort Pierce, Fla.—C. L. Faber will erect one-story building to contain two stores; 36x50 feet; Dennison interlocking tile and concrete.

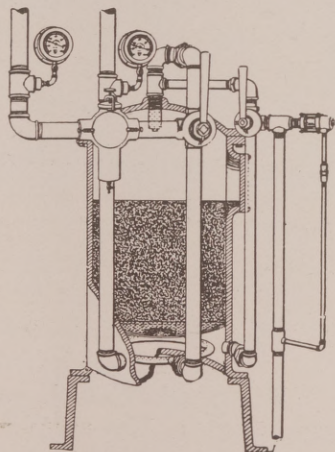
Greenville, Miss.—Morris Goldstein will erect brick building for tailoring business.

Jacksonville, Fla.—Frank Richardson has permit to remodel seven-story concrete building at cost of \$4,000.

PURE WATER

For Industrial Buildings
and Residences.

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Montgomery, Ala.—L. W. Weil has permit to remodel seven-story concrete building at cost of \$4,000.

Roanoke, Ala.—Store buildings will be erected for occupancy by wholesale grocery business. Roanoke Banking Co.; brick.

Birmingham, Ala.—J. P. Walker will erect business building; 50x140 ft.; 3 stories; face brick; stone trim; composition roof; steam heat; electric elevators; automatic sprinkler system; cost \$30,000; Miller & Martin, Archts., 910-12 Title Guarantee Bldg., Birmingham.

Corona, Ala.—Connor Bros. will erect store building; 2 stories; 100x100 ft.; brick and concrete; stone trimmings; Barrett specification roof; tile floors; cost \$16,000 to \$18,000; H. D. Breeding, Archt., Birmingham.

Ensley, Ala.—D. T. Webster has plans by Joy & Gallup, 1918 Jefferson County Bank Bldg., Birmingham, for store building; 26x90 ft.; common construction; composition roof; cement floors; electric lights; bids opened June 1.

Asheville, N. C.—J. D. Earle will erect business building; brick; 42x92 ft.; cost \$7000.

J. D. Nelson will erect business building; 12x82 ft.; cost \$4000.

Fayetteville, N. C.—Stein Bros. are having plans prepared by Benton & Benton, Wilson, N. C., for

store and office building; 5 stories; brick and stone; 52x42 ft.; roof garden; cost \$25,000; plans ready May 29.

Raleigh, N. C.—J. J. Thomas has plans by James A. Salter, Commercial Bldg., Raleigh, to remodel store; brick; 2 stories; Kawneer front; electric elevator; cost \$5000.

Warsaw, N. C.—Mrs. Alice Brown will erect drug store to be occupied by Brown Drug Co.; 22½x60 ft.; brick; tin roof; tile and wood floors over cement; cost \$3000; construction begins June 1.

Schools and Colleges.

Atlanta, Ga.—Atlanta Medical College (medical school of Emory University) will invite bids for constructing building to serve as clinic; four stories. Plans have been prepared by Architects Hentz & Reid, Candler Bldg.

Bowling Green, Fla.—Bids will be received until June 12 by board of public instruction of DeSoto county, Jas. O. Bickley, superintendent and secretary, Arcadia, for construction of brick school building.

Daytona, Fla.—Bids will be received until June 5 by board of public instruction of Volusia county, C. R. M. Sheppard, superintendent and secretary, DeLand, for construction of three school buildings; one of brick construction; plans by Architects Mark & Sheftall, Jacksonville, Fla.

DeLand, Fla.—Plans are being prepared by Architect Francis M. Miller, this city, for school building to be erected by board of public instruction of Volusia county, C. R. M. Sheppard, superintendent and secretary, DeLand; stone and brick, with terra cotta trim; flat roof; \$50,000; steam heating; \$2,500; plans will be ready on July 1 or before.

Fort Payne, Ala.—Mayor Charles M. T. Sawyer has donated block as site for municipal school building; bonds of \$10,000 for erection of building were voted.

Fort Lawn, S. C.—School Board, M. W. Roddy, secretary, will receive bids until June 5 for constructing school building; three class rooms; auditorium on second floor; information furnished on application.

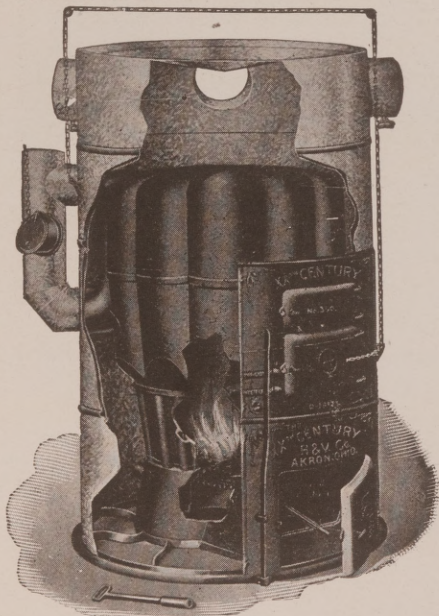
Greenville, Miss.—Issuance of \$50,000 additional of school building bonds by Greenville school district was voted; high school building and two or three buildings for graded schools will be erected. P. T. Haynes, chairman board of trustees.

Jacksonville, Fla.—Bids will be received until June 17 by board of public instruction of Duval county, F. A. Hathaway, secretary, for erection of addition to school building in West Riverside, Jacksonville; brick; plans by Architect H. J. Klutho, this city.

Jacksonville, Fla.—Bids are wanted until June 17 by board of public instruction of Duval county

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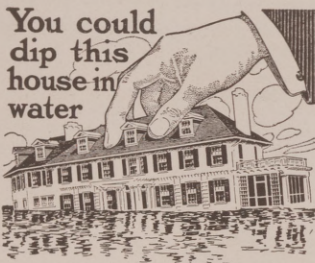
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for erection of school building in South Jacksonville; brick; 16 rooms; plumbing and heating not to be included; contract for these will be awarded later. F. A. Hathaway, superintendent and secretary of board.

New Smyrna, Fla.—Bids will be received until June 9 by board of public instruction of Volusia county for erection of brick school building, for which plans were prepared by Architect A. E. Lewis, Miami, Fla. C. R. M. Sheppard, secretary of board, DeLand, Fla.

Marianna, Fla.—Jackson County High school trustees are considering erecting another high school building. Prof. Henderson, principal.

Reynolds, Ga.—Architects Nisbet, Brown & Dunwoody will prepare plans for \$20,000 school building; brick; probably tin roof; heating system; 12 class rooms; auditorium with seating capacity of 1,000; stage, with curtain, drops and other paraphernalia; domestic science and manual training equipment.

Savannah, Ga.—Contract will be awarded for school building to be erected by Society of African Missions for use of negroes; three stories; brick; plans by Architect Henry Urban, this city.

West Palm Beach, Fla.—Election will be held June 17 upon issuance of \$20,000 of bonds by District 6 for erection of school building at Delray. Secretary board of public instruction of Palm Beach county, West Palm Beach.

Churches.

Birmingham, Ala.—Methodist Episcopal church South has plans by W. T. Warren and E. B. La Roche, 1607-11 Empire Bldg., Birmingham, for chapel at Roebuck Springs; frame and rough stone; fire-resisting roof.

Birmingham, Ala.—Baptist church, Rev. J. H. Little, pastor, has plans by H. D. Breeding, Watts Bldg., Birmingham, for building; stone; slate roof; furnace heat; main auditorium to seat 250; Sunday school rooms in basement; construction begins June 1.

Lisman, Ala.—Methodist church is having plans

prepared by John Gaisford, Memphis, Tenn., for building.

McCrory, Ark.—Methodist church has plans by John P. Almond, Little Rock, and opens bids June 15 to erect building; 75x105 ft.; brick veneer; tropical roof; wood joist floor construction; cost \$10,000; hot air heat \$500.

Stuttgart, Ark.—Holy Rosary Catholic Church receives bids to erect parsonage; 8 rooms. Address The Pastor.

Fort Pierce, Fla.—Methodist church will erect building. Address The Pastor.

Atlanta, Ga.—Methodist Episcopal church South, Rev. Chas. Edw. Choate, Pastor, receives bids June 1 to 6, to erect building; concrete and stucco exterior; art glass; warm-air heat; pipe organ.

Fort Valley, Ga.—Methodist church will erect Sunday-school building; 50x55 ft.; brick; slate roof; wood floors; steam heat; electric lights. Address W. C. Wright.

Friar Point, Miss.—Methodist Church is having plans prepared by Hubert T. McGee, Memphis, Tenn., for building; solid brick walls; stone trimmings; concrete foundation; tile roof; cost \$20,000.

Clinton, N. C.—First Baptist Church is having plans prepared by Benton & Benton, Wilson, N. C., for alterations and additions to building; plans ready May 23; cost \$7000.

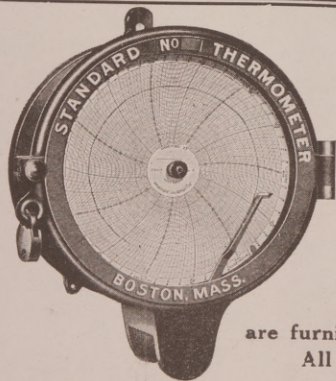
Scotland Neck, N. C.—First Baptist Church lets contract June 2 to erect bldg.; 75x110 ft.; brick and terra cotta; slate or tile roof; steam heat; electric lights; C. Gadsden Sayre, Archt., Anderson, S. C.

Tarboro, N. C.—St. James M. E. Church, Rev. H. I. Glass, Pastor, has plans by Benton & Benton, Wilson, N. C., for building; brick; metal tile roof; steam heat; 65x85 ft.; cost \$18,000; construction by day labor, begun.

Brownville, Tenn.—Presbyterian Church is having plans prepared by Mahan & Broadwell, Memphis, Tenn., for building; brick and stone; colonial style; 65x110 ft.; cost \$20,000.

Gallatin, Tenn.—Methodist Episcopal church South plans to erect addition to building; cost \$8000 to \$10,000. Address The Pastor.

Milan, Tenn.—Baptist church will erect building;

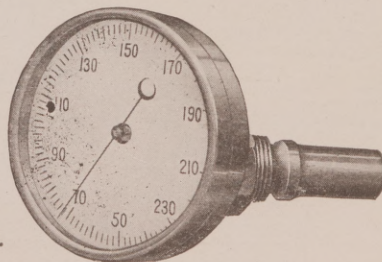


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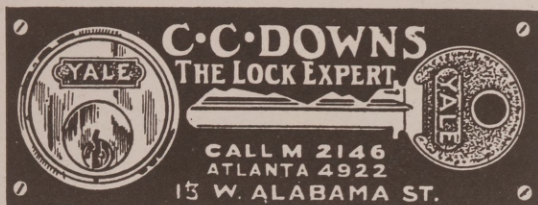
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16 classrooms; brick; metal roof; auditorium to seat 225; cost \$10,000; construction under supervision of Wm. McElroy, Biloxi, Miss.; J. E. Greene, Archt., 508 American Trust Bldg., Birmingham.

Nashville, Tenn.—Church of Holy Name has plans by Harry J. Frahn, Nashville, for school and rectory; 106x57 ft.; brick; stone trim; church auditorium with sanctuary and sacristy on first floor; schoolrooms with auditorium on second; rectory adjoining school building; cost \$40,000.

Nashville, Tenn.—Woodland St. Presbyterian Church, Geo. Gellispeie, Chrmn., is having plans prepared by C. K. Colley, 33-40 Life and Casualty Bldg., Nashville, for building; 18 Sunday-school rooms and auditorium to seat 350; stone veneer on brick; slate and copper roof; hardwood floors; low-pressure steam heat; cost \$40,000; plans ready June 1.

Dwellings and Apartments.

Atlanta, Ga.—Mrs. Anna C. H. Mathewson has permit to erect residence to cost \$4,500; one story; six rooms; brick veneer; also, to erect one-story, 6-room bungalow to cost \$4,000; brick veneer.

Atlanta, Ga.—Stewart Maiden has awarded contract for erection of residence to cost \$3,500.

Atlanta, Ga.—Architect P. Thornton Marye, this city, is preparing plans for residence to be erected for Mrs. T. B. Dillard on tract which she has just purchased for \$18,000.

Atlanta, Ga.—Architect W. T. Downing, this city, is preparing plans for residence to be erected by Alex C. King at cost of about \$25,000; grounds will be beautified.

Atlanta, Ga.—Architect Hentz, Reid and Adler, this city, are preparing plans for residence to be erected by J. T. Holleman on Ponce de Leon Avenue.

Atlanta, Ga.—Dr. F. P. Calhoun is having plans prepared for residence which he will erect in Peachtree Park.

Atlanta, Ga.—Mrs. M. E. Payton will erect two-story, frame apartment house.

Augusta, Ga.—McKenzie & Thompson have had plans prepared by Architect Joe T. Lawrence, Augusta, for apartment house; hollow tile; stucco finish; concrete and tile floors; overlaid with hardwood; Spanish tile roof; steam heat; electric fans; each suite will consist of five rooms, with butler's pantry.

Pine Bluff, Ark.—Jack Barnhardt will erect \$4700 residence.

Pine Bluff, Ark.—R. H. Williams will erect residence; brick veneer; cost \$4000.

Miami, Fla.—Four residences to cost about \$7,500 each will be built on bay front by Geo. S. Reid and associates of the company which is developing the property.

Miami, Fla.—Bids are being received by Miramar Company for eight residences and apartment house to cost more than \$125,000.

Birmingham, Ala.—Houston Jones will erect residence; frame; colonial style; composition roof; furnace heat; hardwood floors; tile porch and bath-rooms; cost \$10,000; Wm. Leslie Welton, Archt., Birmingham.

Birmingham, Ala.—J. N. Martin, East Lake, Ala., is having plans prepared by J. G. Ringer, Steiner Bldg., Birmingham, for frame bungalow; 6 rooms.

Miami, Fla.—W. L. Simms will erect two-story concrete residence; cost \$5000.

Tampa, Fla.—E. M. Murray will erect residence and store building in Palma Cela Park.

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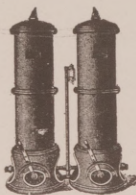
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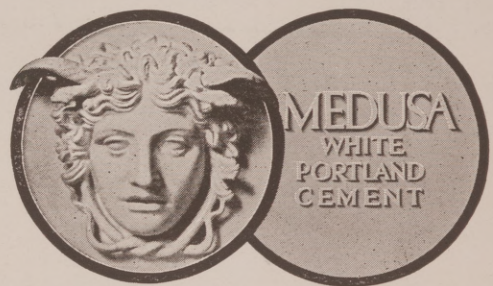
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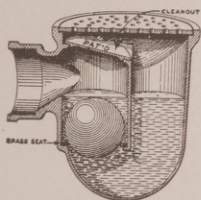
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Miami, Fla.—Residence to cost about \$25,000 will be erected for W. C. Rand.

Milledgeville, Ga.—Miller S. Bell will remodel residence; colonial style; plans by Architect Alexander Blair, Georgia Casualty Bldg., Macon, Ga.

Orlando, Fla.—Number of 6-room residences will be erected on tract near here by S. G. Rand, Providence, R. I.

Savannah, Ga.—E. W. Rosenthal is having plans prepared for remodeling residence which he has just purchased for \$12,000.

St. Petersburg, Fla.—Four residences will be erected by A. B. Archibald, construction to be begun immediately.

St. Petersburg, Fla.—T. J. Wilcox will erect residence in Lake Vista subdivision.

Corinth, Miss.—R. L. Story contemplates erecting two-story apartment house; two apartments of five rooms each on each floor; bids are being received for both brick and frame structures.

Jacksonville, Fla.—C. Brinkley will erect two 2-story residences; cost \$5000.

Jacksonville, Fla.—Dr. H. S. Hampton will erect residence; 1 story; frame; cost \$4000.

Birmingham, Ala.—J. B. Hill will erect bungalow; 1½ stories; frame and stone veneer; tile roof; hardwood floors; furnace heat; tile baths; cost \$7000; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Miami, Fla.—Miramar Co. is receiving bids to erect 8 residences; also apartment house of 17 suites in Miramar; cost \$125,000.

Tampa, Fla.—S. R. Walters is reported to erect 5 residences in Palma Cela Park; cost \$2,500 each. \$2500 each.

Miami, Fla.—Walter Flanders, of Maxwell Motor Co., Geo. S. Reid, local representative, has plans by Geo. L. Pfeiffer, Miami, for residence in Magnolia Park; cost \$50,000; swimming pool; receives bids until June 10.

STEEL FURNITURE

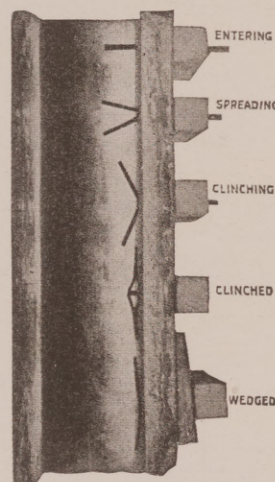
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Office Filing Cases—Vault Shelving and Fixtures. Counters, Desks, Cage Work for Banks. Made to Order Insect Screens

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VINCENNES, IND.

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Muskogee, Okla.

Address nearest office.

Lemon City, Fla.—E. C. Cook will erect residence in Fallesen Park; 2 stories; 10 rooms; concrete construction; porch on three sides; cost \$12,000.

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Can get our catalog and prices on High Grade, Guaranteed Millwork. We sell to them exclusively; giving to every Carpenter-Contractor a chance to sell and make money on Millwork.

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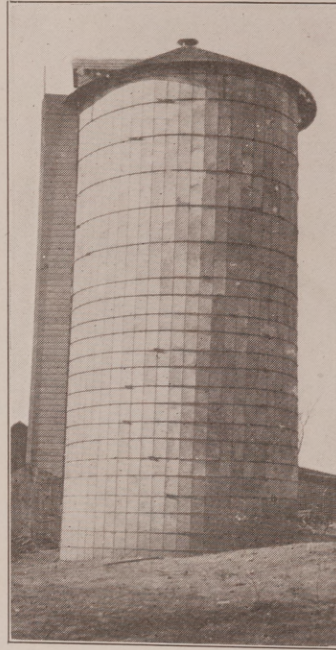
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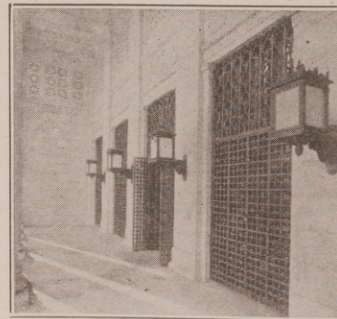
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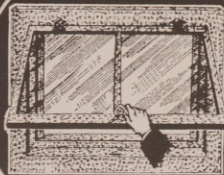
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Write for special design.

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They will please the man you're building for better than any other type of window you could install. They're the modern cellar window—the solution of the window problem for the man who wants window satisfaction in service.

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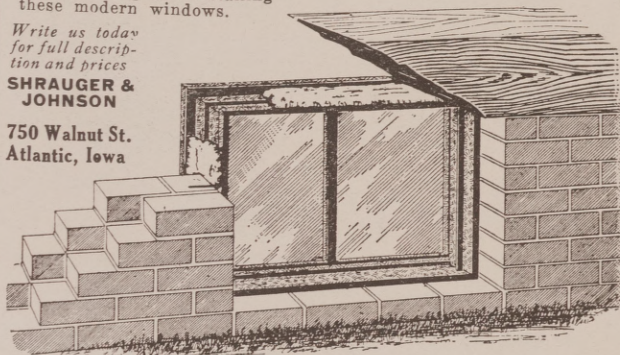
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These levels are made of thoroughly seasoned white pine and are 48 inches long.

No. 11-A has two plumbs and 2 Levels and you can use either edge for level.

No. 77-A is fully brass bound, has 4 Plumbs and 2 Levels, and works either edge or end up. **Every Level Guaranteed** Send us your order today, and we will send you one prepaid. Remit by P. O. order.

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WHITE
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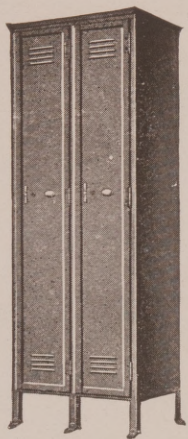
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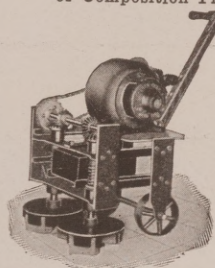
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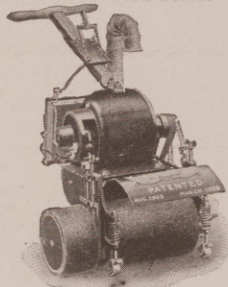
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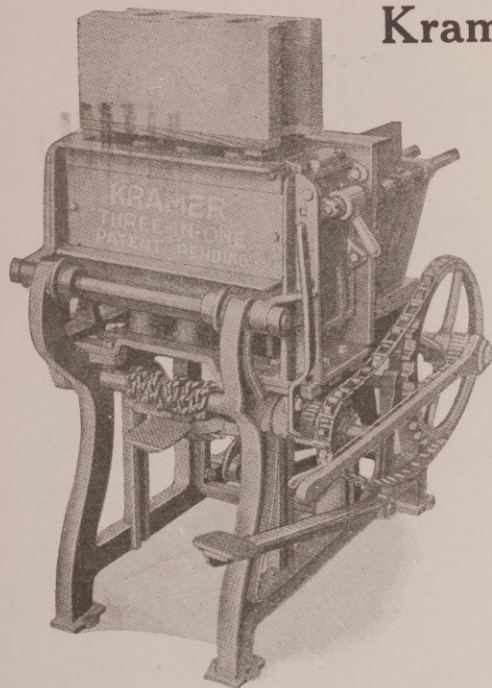
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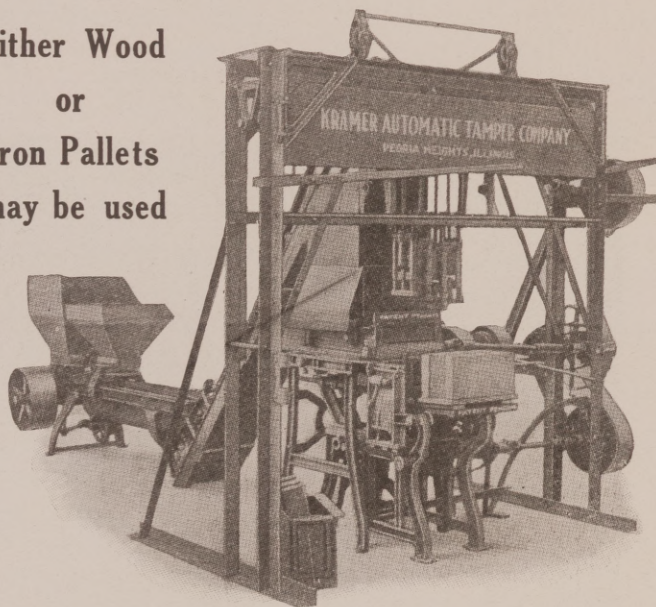
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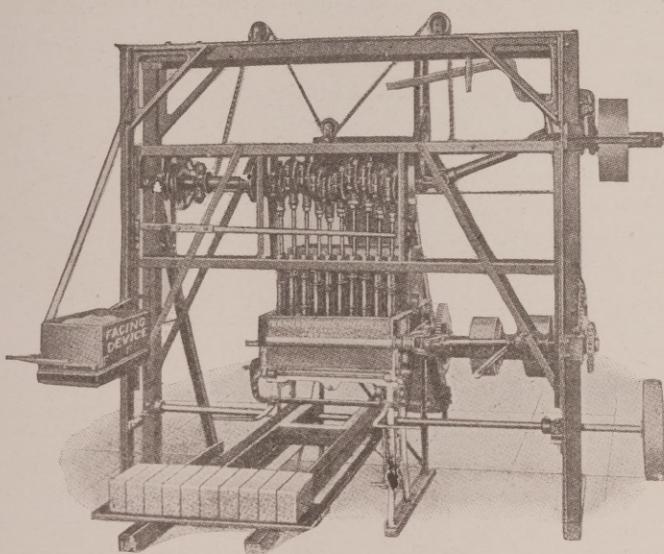
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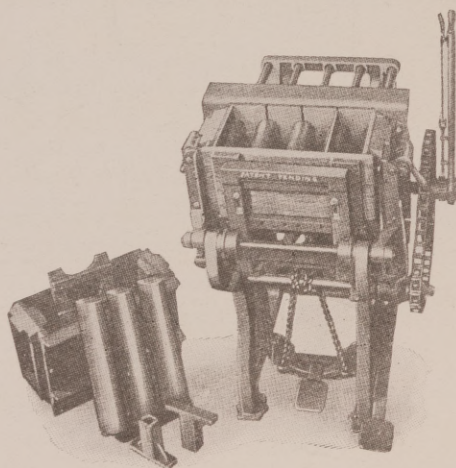
THREE IN ONE, also make side face stripper blocks and down face semi-dry face blocks. THREE IN ONE has the largest range of any block machine on the market. DON'T FAIL TO INVESTIGATE this machine before placing your order, it will pay you.

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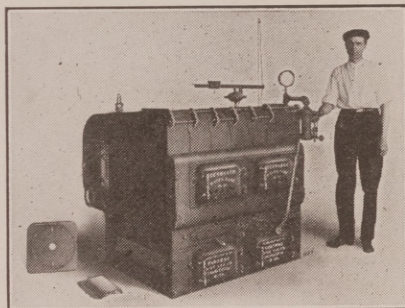
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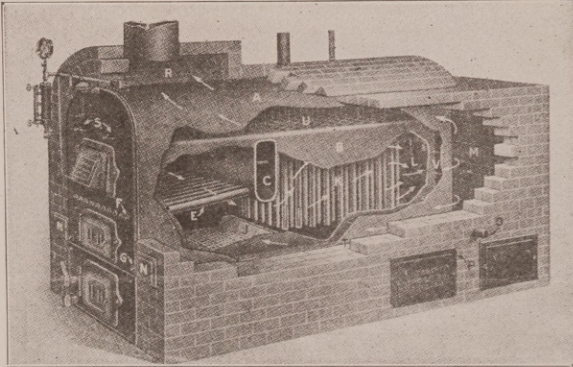
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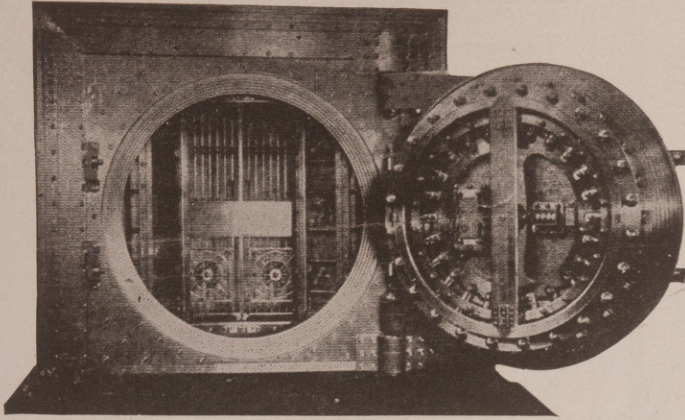
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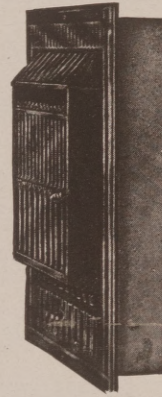
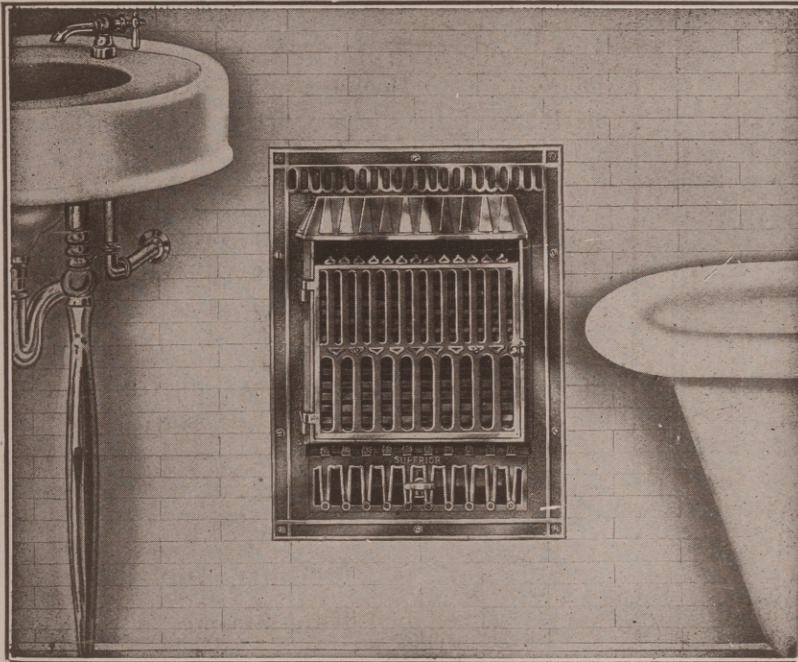


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U. S. Pat. June 28,
1910

Side View

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14 ins. wide

18 ins. high

Size of Body

of Heater:

12½ ins. wide

16¼ ins. high

4¾ 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.

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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.

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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.

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

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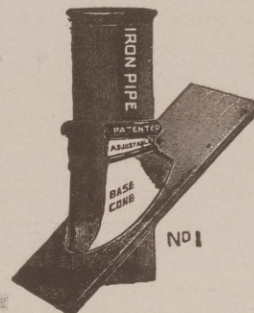
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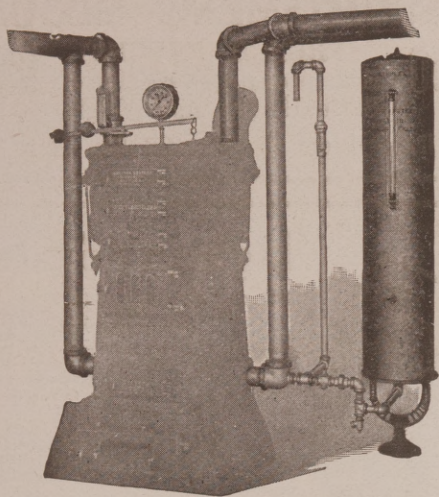
Standard for Warehouses, Engine Houses, Freight Sheds, etc.

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Embody Advanced Ideas.
Increases Pressure without Straining Joints.
Easy to Connect and Operate.
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Particular attention is drawn to the fact, that "Anti-Hydro" has no equal in the market for producing a finished cement floor. Dustless and adamant, it is inexpensive and practically pays its own cost in labor saving. No extra troweling and no expensive supervision is needed. All that is required is the adding of one part "Anti-Hydro" to ten parts water used in gauging the top surface mixture. "A. H." Dustless Adamant Concrete Floors are integrally and permanently what their name expresses, not only the top surface, but through the entire mass in which it is used. The actual cost is less than one cent per square foot as against four to eight cents cost incurred in almost all other compounds claiming to obtain the same results.

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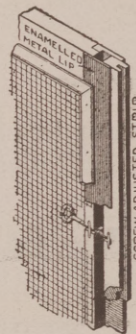
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The Wheeler Screen

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YOU will find three troubles in every non-adjusting screen:—(1) Errors of the opening (no man can make two openings of the same size); (2) Weakness of the Wooden slide-tracks used by all sliding screens except the "Wheeler"; (3) Swelling and Shrinking of all window frames in wet and dry weather.

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No matter what trouble—whether it be the error of the carpenter or imperfect window frames, no matter what the weather, merely push out the Adjustable Strip in the side by means of Thumb Screws located near top and bottom. The Screws push out this Adjustable Strip—more at top—less at bottom—until Screen *exactly fits*. With these troubles ended, conveniences of all kinds follow and the "Wheeler" outpoints all others on any and all features. To the Contractor they afford *two profits*—the usual margin, and another in the *saving over cost of fitting and painting the edges of all others*. They fit without touch of tool at one-tenth cost of other installations.

Big Money Selling Our Screens

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You actually make \$5 to our \$1, because we allow you the big single profit on each house-order, since that is the only way for us to get the little-many profits on the 100 house-orders.

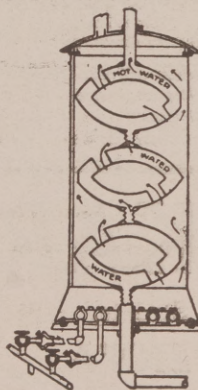
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Made in 3 or 4 sections.

Heats very fast, using little gas. Hard to lime or mud up. After water in range boiler becomes hot, turn out large burner, leaving pilot burning. Price very low.

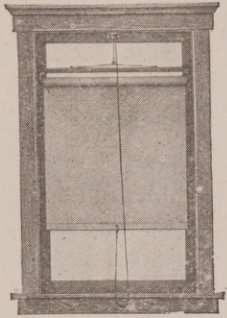
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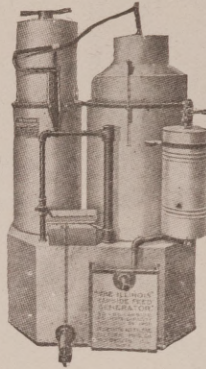
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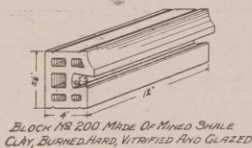
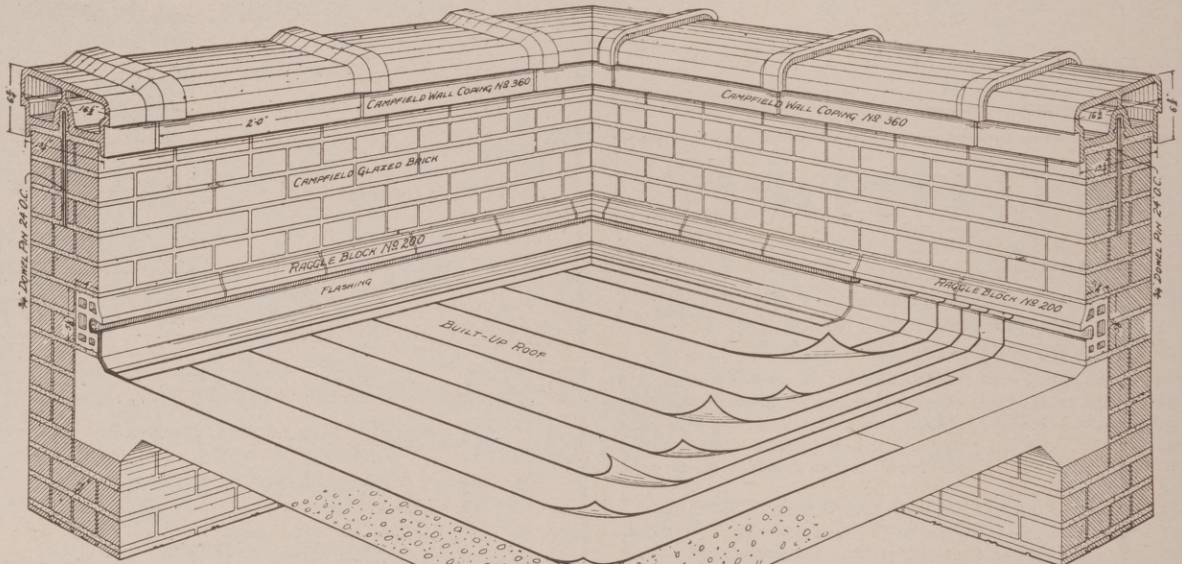
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CLAY, BURNED HARD, VITRIFIED AND GLAZED

CAMPFIELD RAGGLE BLOCK
NUMBER 200 ESPECIALLY
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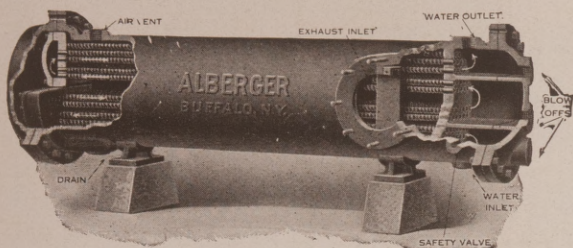
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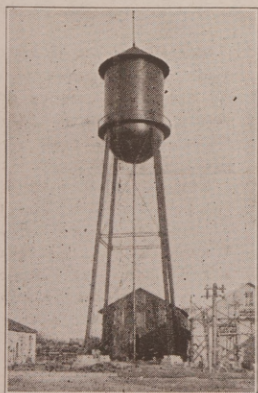
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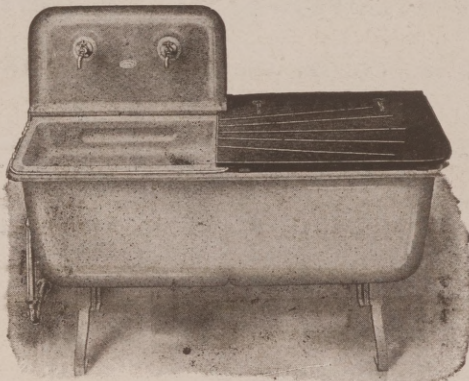
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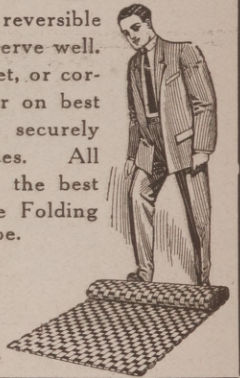
are durable, sanitary, flexible, reversible and always lie flat. Look well—serve well. Made of leather, steel, cork carpet, or corrugated rubber and put together on best tempered steel rods, which are securely fastened with patented end pieces. All material used in construction is the best obtainable. The National Close Folding Mats are made in any size or shape.

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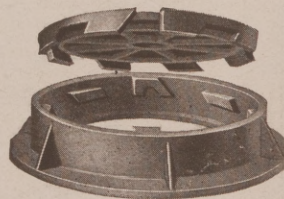
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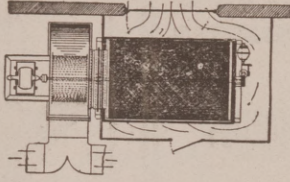
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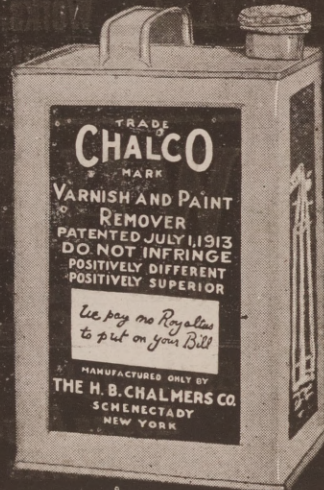
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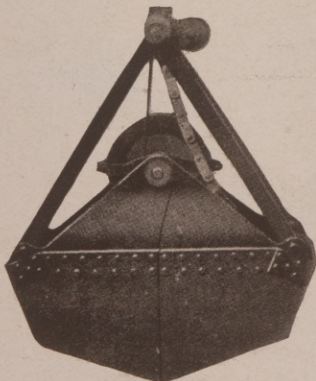
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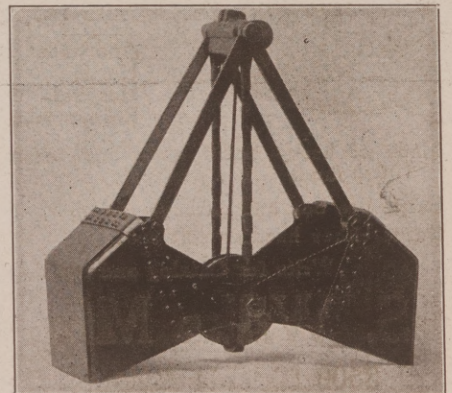


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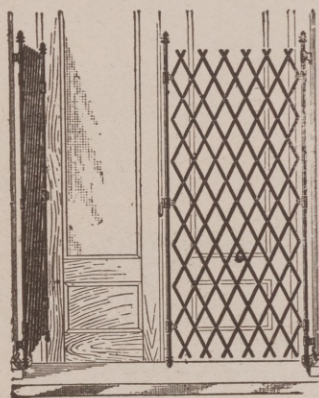
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It does the Work Where Other Paints Fail.

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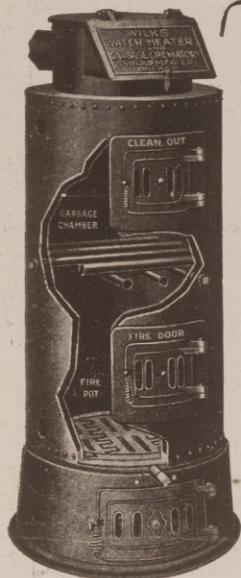
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(Signed) OSWALD BROS.

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MONARCH HYDRATE
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Write us at once for prices and information.

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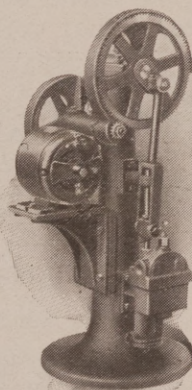
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"City Water" Service for Country Clients

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in the type best suited to local conditions. We make outfits for shallow or



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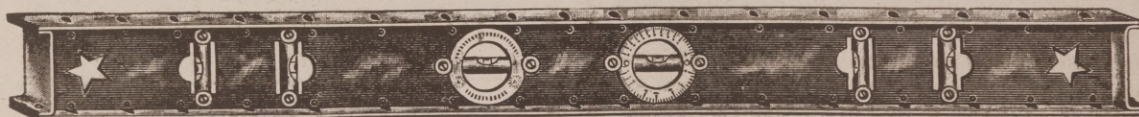
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They cost no more than the wooden kind and much less than those of aluminum or cast iron, and are superior to both in appearance and utility.

They determine off-levels either in degrees or inches of rise to the foot—or denote any grade already established.

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"WRIALCO"

A PATENTED CONCRETE INSERT

**The Most Practical and Reasonable Priced Hanger Yet Devised
for Automatic Sprinkler, Shafting and General Piping Work in
Connection with Concrete
Building Construction**

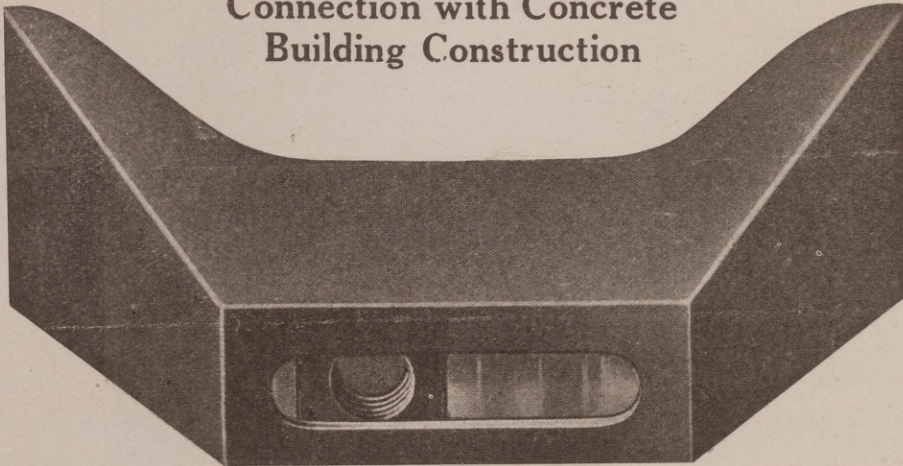


Fig. 2.

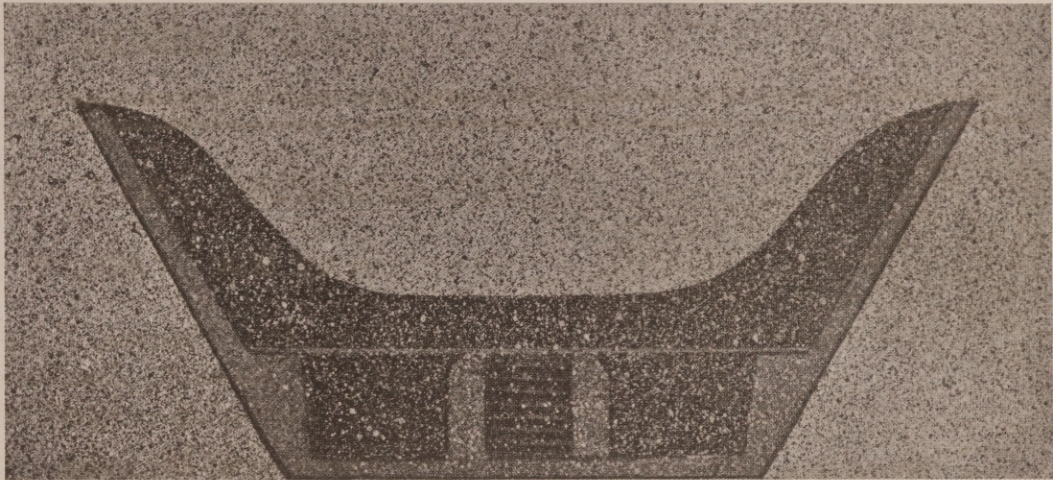


Fig. 1.

Figure 1 shows the hanger as embedded in concrete.

Figure 2 shows the perspective view of hanger, also showing nut to which the rod or bolt is attached and the adjustment feature. The rod or bolt can be made rigid at any point of adjustment desired.

The insert is fastened to form or false work by wire nails on either side bent over at the top or by bolting direct to the nut which is placed within the adjustment chamber, removing the bolt when taking down forms.

It's a simple operation and the hanger proposition is solved.

Thousands in use.

Owners, Architects and Construction Engineers specify them.

Made in four sizes, for 7/16, 1/2, 5/8 and 3/4" nuts.

Descriptive matter and prices upon application.

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ROCHESTER, NEW YORK

New Fulton County Court House at Atlanta, Ga.



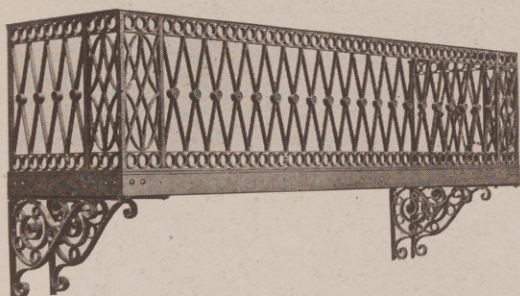
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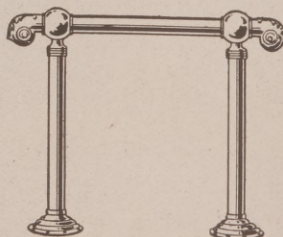
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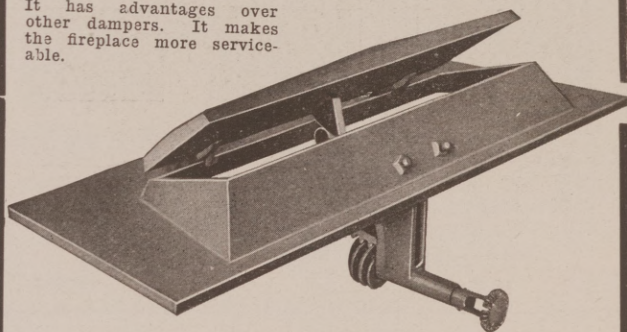
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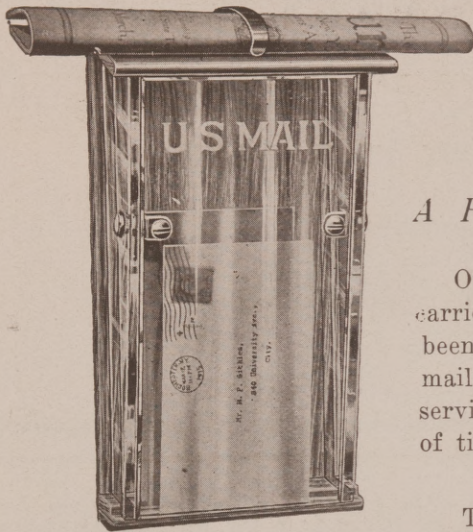
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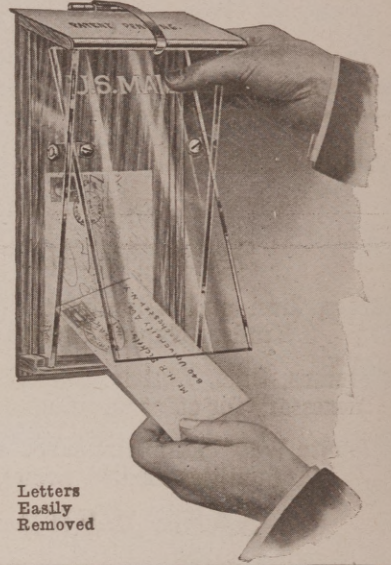
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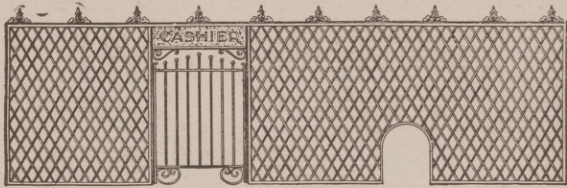
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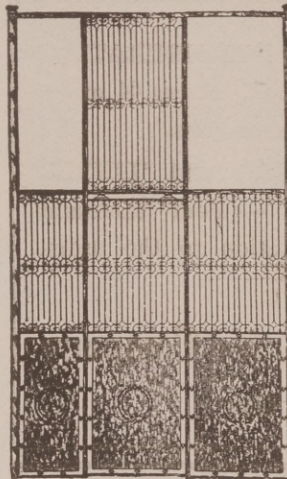
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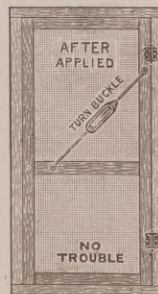


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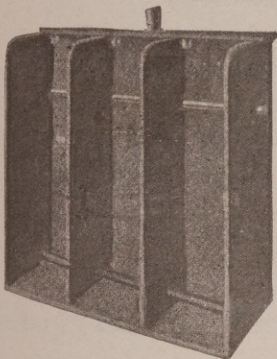
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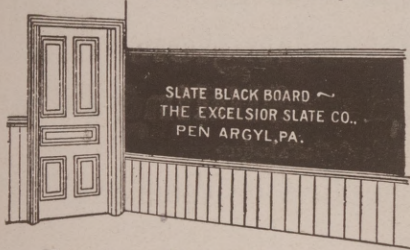
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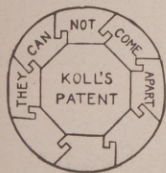
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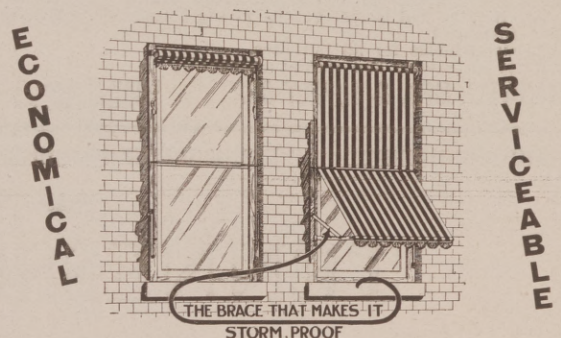
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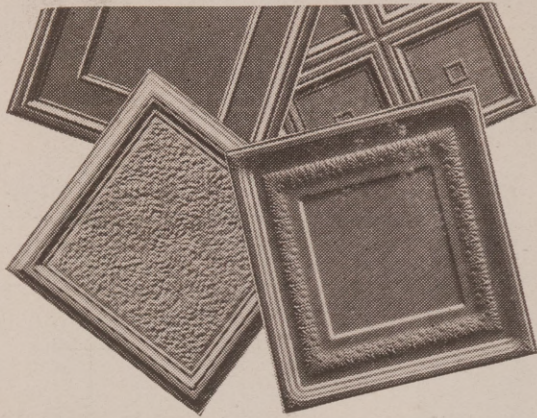
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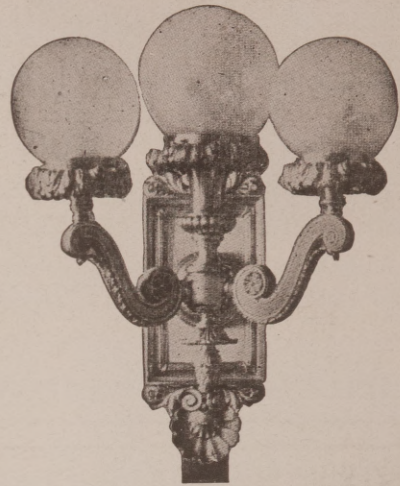
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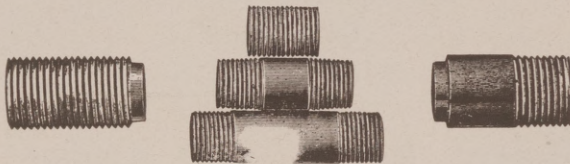
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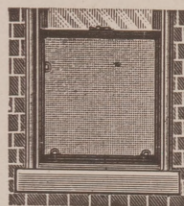
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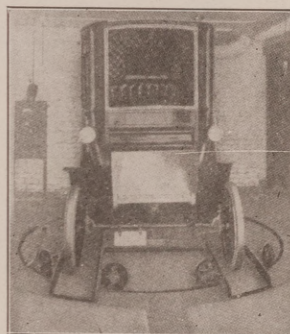
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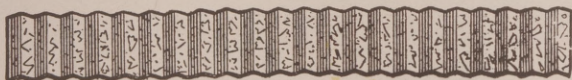
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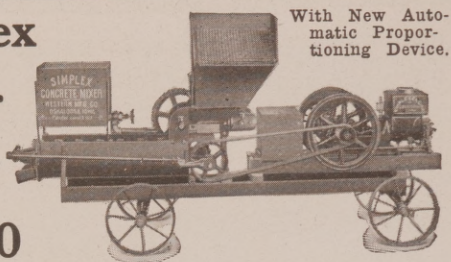
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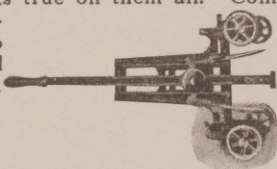
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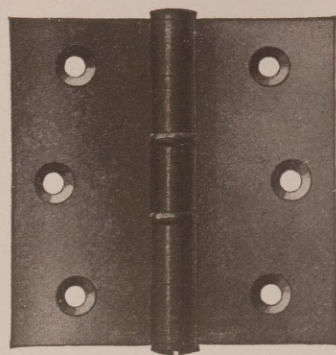


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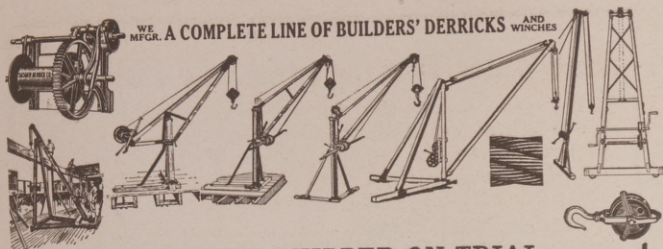
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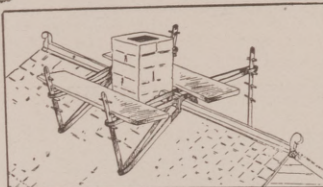
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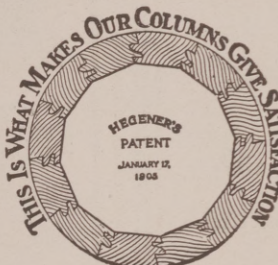
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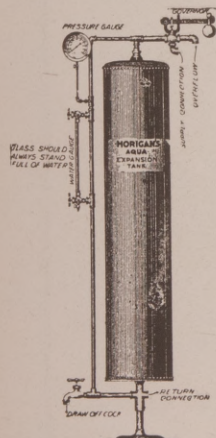
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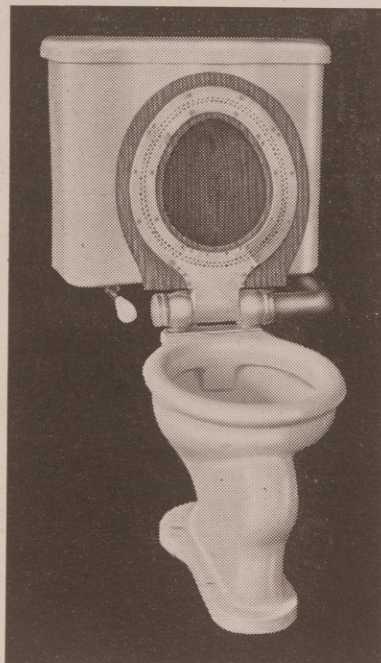
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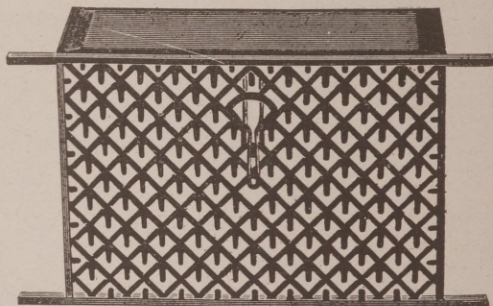
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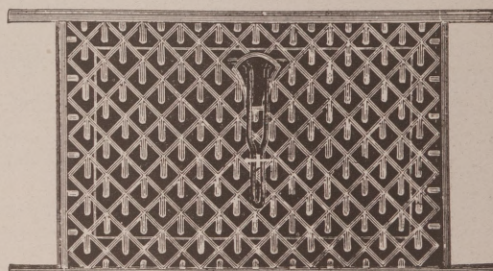
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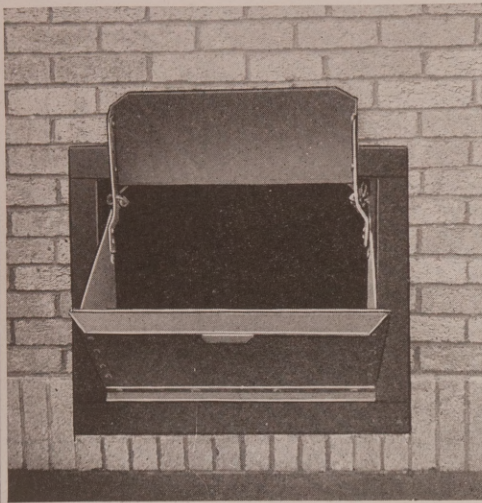
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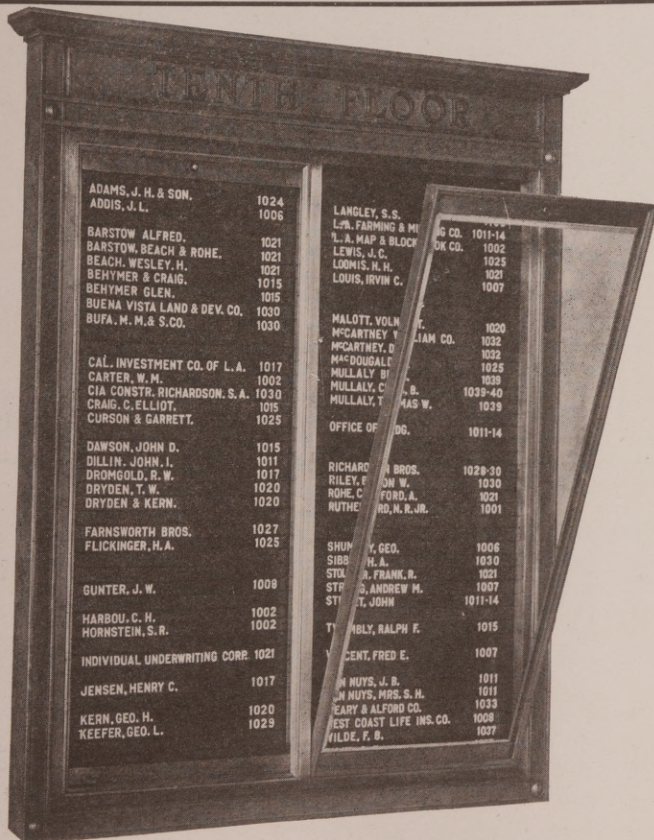
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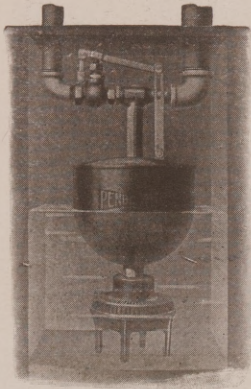
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In reply to your letter of the 4th inst., we are pleased to say that the Penberthy Automatic Cellar Drainer meets the requirements of our trade in every respect and has greatly increased our sales in that line.

It is the most satisfactory device of its kind that we have handled.

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WHITNEY & FORD, Chicago, Ill.
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For use in Pits, Sumps, Cellar, Tanks, Settling Basins or wherever it is desired to keep water or other liquids from going above a certain level.

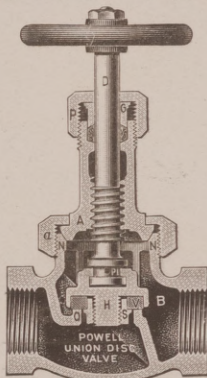
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**FOR
HOT
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**FOR
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PLANTS**

Notice that the points where the strain occurs have been strengthened to offset any careless fitting or handling. Even the little details of design, such as rounding sharp corners, have all received consideration. Notice the strong construction of the diaphragm—plenty of strength, without being clumsy.

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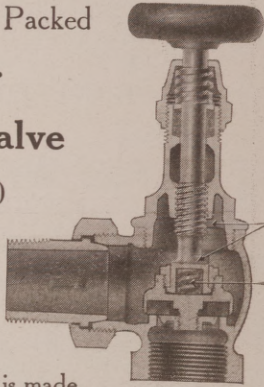
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Valve**

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will stay
tight longer
than any other
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**Makes Founda-
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to Moisture.**

APPLIED with a brush direct to foundation walls, concrete construction, masonry or stucco surfaces. Percoproof forms an unbroken, elastic facing that fills every pore and crack and prevents all seepage and moisture from penetrating.

Unlike ordinary waterproofing materials, Percoproof contains no oil and requires no thinning. It comes ready for use and is equally satisfactory in all climates and at all seasons.

Eighth Thousand Gallons of Percoproof were used for waterproofing the eighteen great buildings that constitute the Cincinnati General Hospital.

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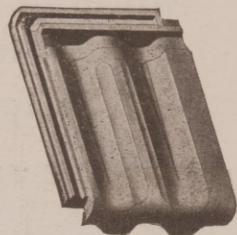
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Made in all colors

Glazed and Unglazed

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Samples on request



THE COLLAR



ON THE NAIL



IN PLACE



IN THE CLAW

Save Dollars by Using

PULL-EASY

TRADE MARK

NAIL COLLARS

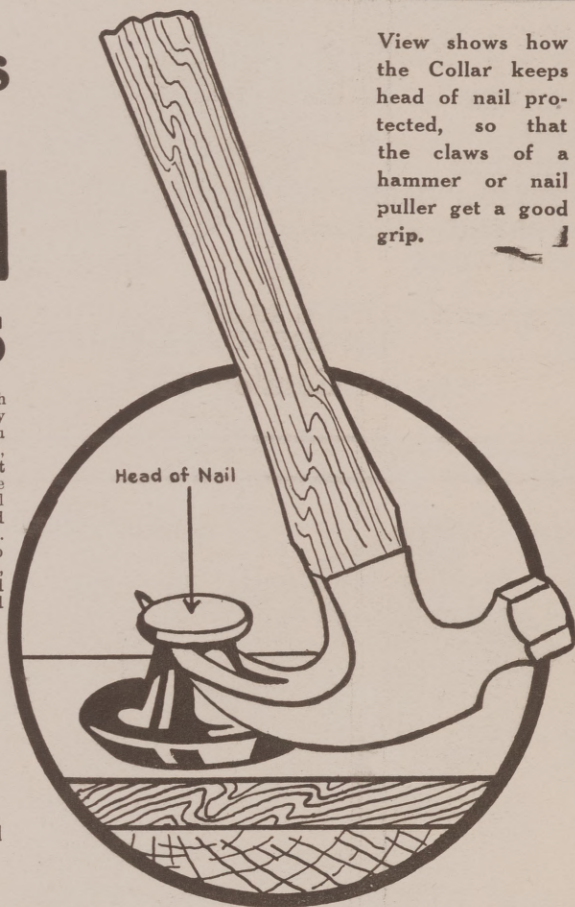
Whenever you are erecting any temporary work, such as Scaffolds, Concrete Forms, False Work, etc., why not slip **PULL-EASY** Nail Collars on every nail you drive? Then when you want to dismantle the work, the heads of all the nails will be projecting, so that it will be an easy matter to get a good grip with the claws of your hammer or nail-puller and they will slip out easy, without spoiling or marring the wood and in a jiffy—no prying—no cussing—no time lost. **PULL-EASY** Nail Collars are made in three sizes to fit all common wire nails. Size No. 1 fits 4d, 5d, 6d, 8d and 10d wire nails; No. 2 fits 10d, 12d, 16d and 20d wire nails; No. 3 fits 30d, 40d, 50d and 60d common wire nails.

Write for Your **FREE** Sample Package

Try them out yourself. We feel sure a trial will demonstrate their money-saving features. Ask for **FREE** Sample Package No. 20.

Wagner-Behm Company

Room 1201, 20 East Jackson Boulevard
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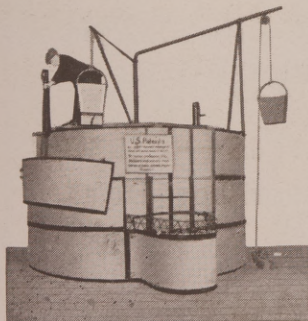
View shows how the Collar keeps head of nail protected, so that the claws of a hammer or nail puller get a good grip.

PEERLESS SILO MOLDS

The only Molds entitled to chute sections according to U. S. Patent No. 1,122,329.

OTHER ADVANTAGES ARE:

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2. Its simplicity—design, mechanism and operation.
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7½' daily capacity molds,
largest on the market.

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BRASS, BRONZE OR STEEL
RAILINGS
PUSH RODS
KICK PLATES
THRESHOLDS

GRILLES
AND
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TELLERS' CAGES
CURRENCY GUARDS
WIRE WORK

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A GUARANTEED BLACKBOARD.

Outlasts all Composition Boards.

IT'S ALL IN THE SURFACE.

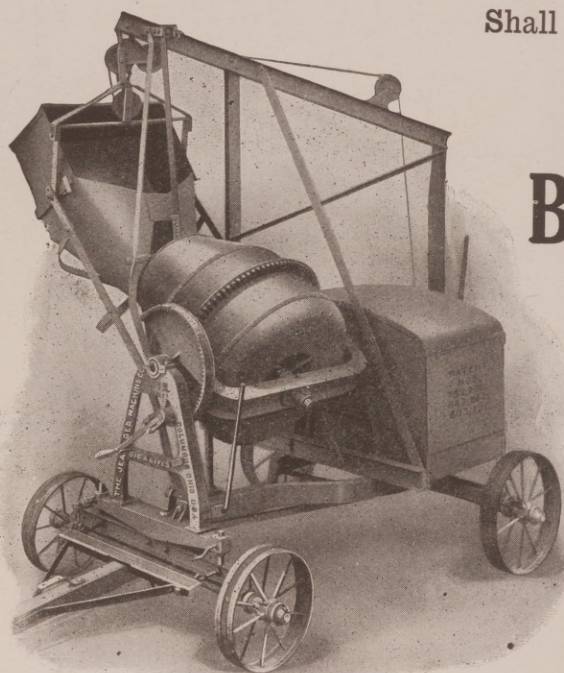
The surface of "Lithoplate" is made of ground slate, and is troweled on to compressed wood pulp board ready to fasten to wall. Any length up to twelve feet. "Lithoplate" is guaranteed for ten years, and can be furnished in black or dark green. A satisfactory blackboard for all classes of school buildings.

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Jaeger Big-an-Little

YES—NOW

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Because the first cost is fair
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Concrete—Mortar—Plaster

Furnished with or without Hoist

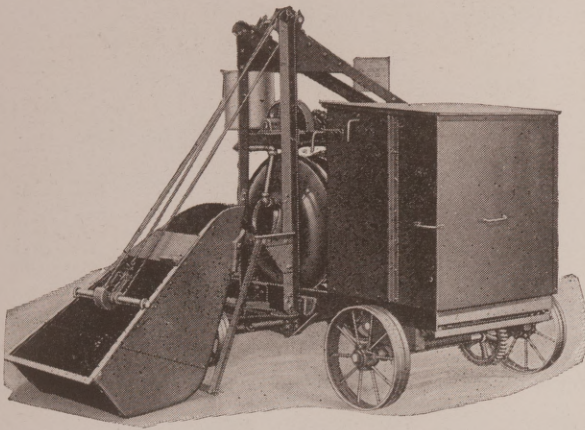
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Tried, Tested, Approved, Accepted.

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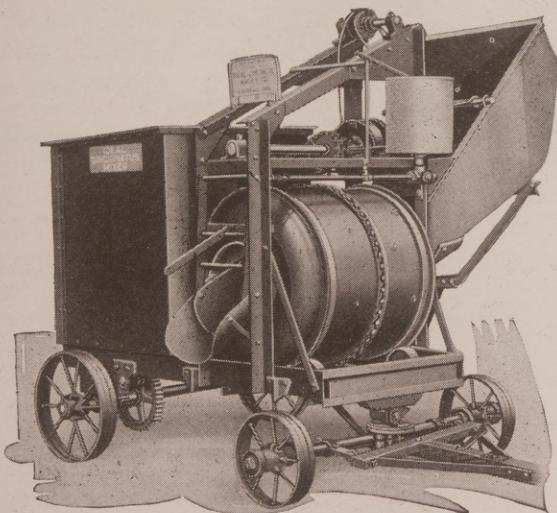
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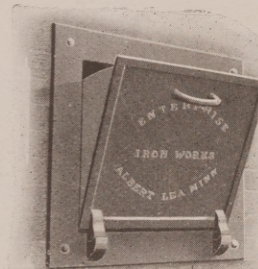
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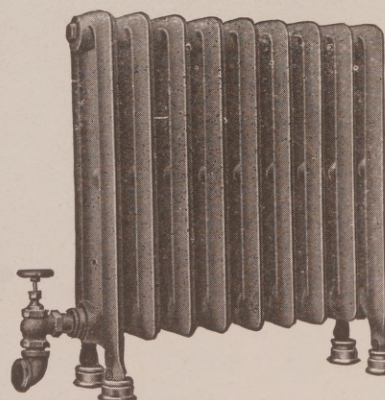
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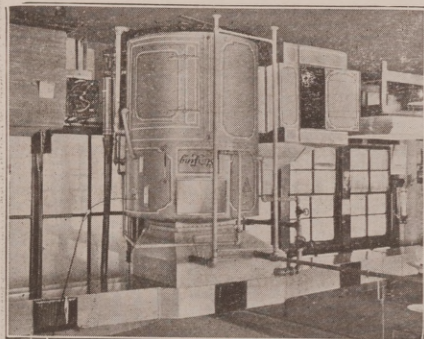
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Apparatus can be operated from a plugged connection to your lighting circuit, 1/10 K.W. per hour current consumption.

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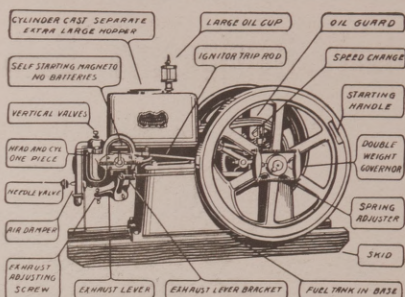
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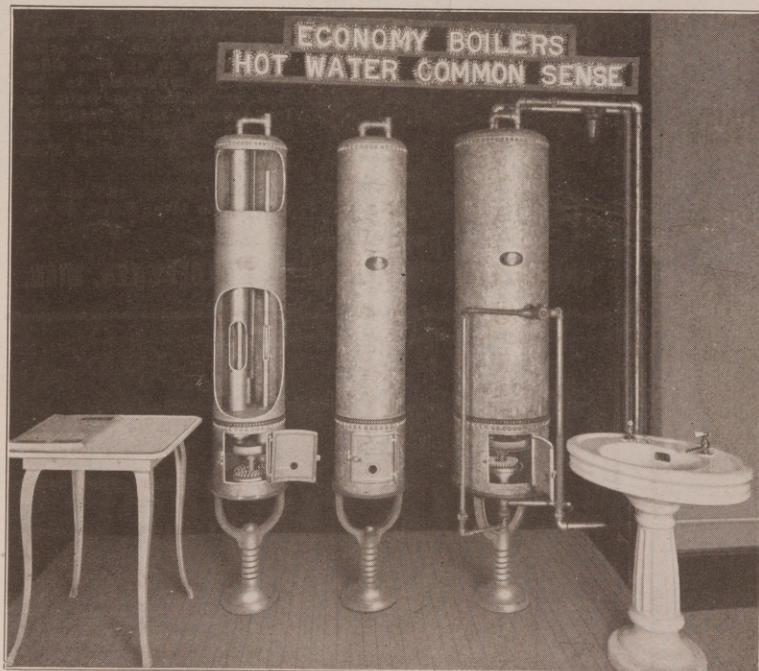
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One Number 52 Economy Automatic Boiler, Connected with Gas and Water, and in Continuous Operation on Minimum Basis of 4 Cubic Feet of Gas per hour.

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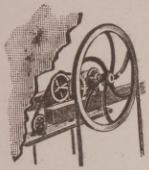
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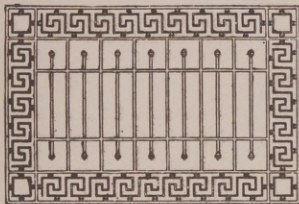
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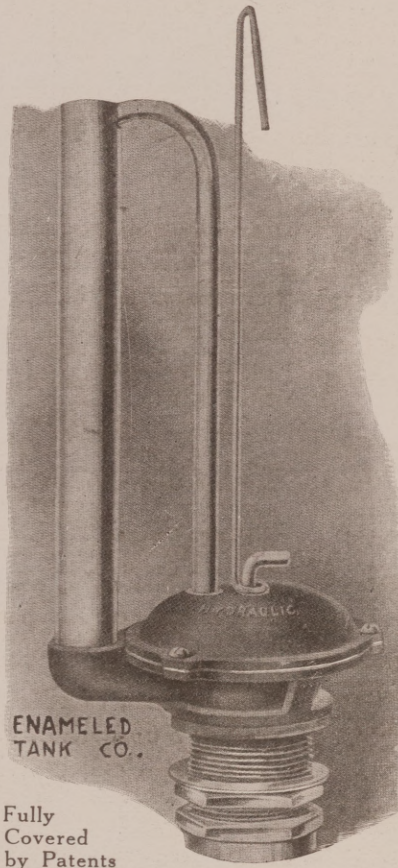
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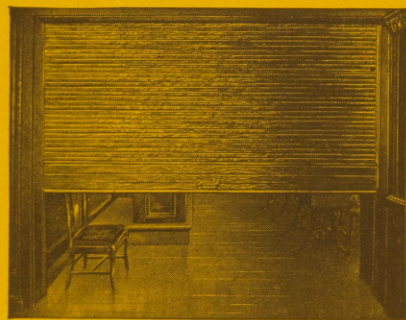
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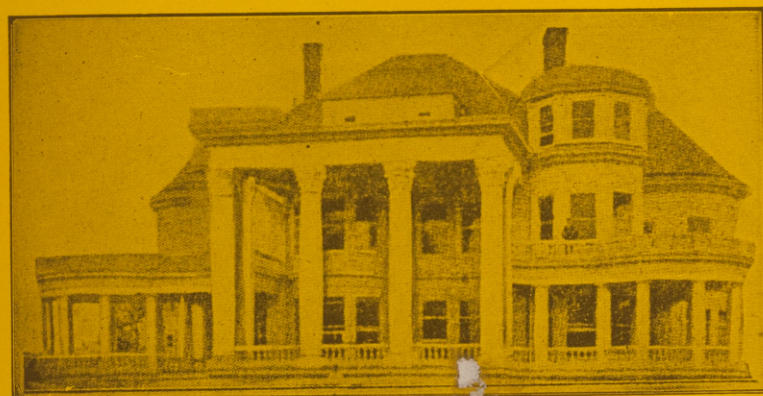
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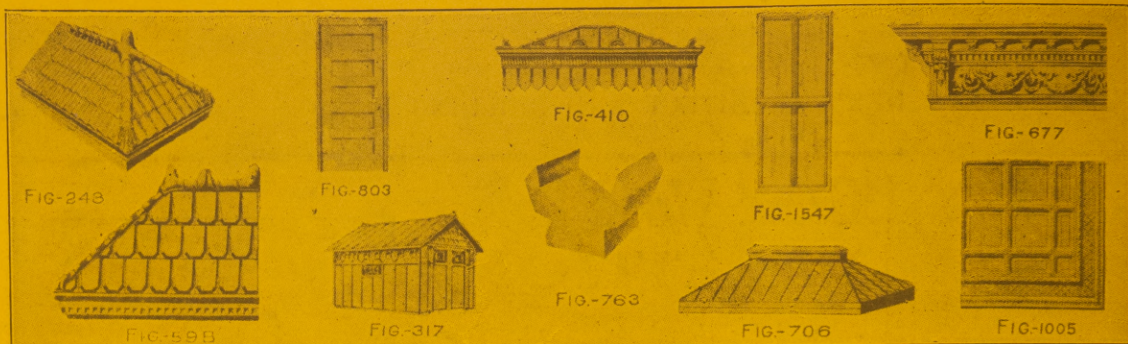
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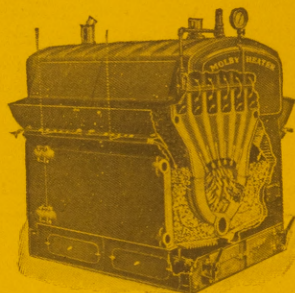
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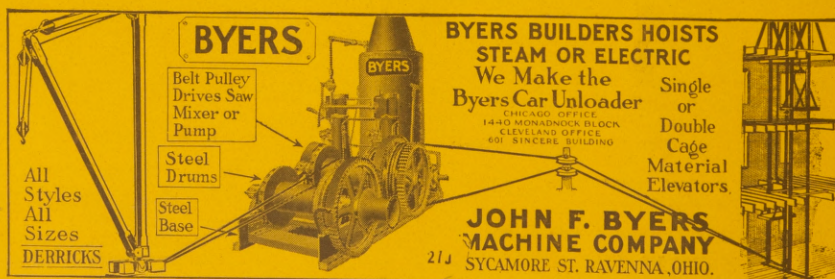
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