

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 39.

CONTENTS FOR SEPTEMBER, 1925

No. 6.

COPYRIGHT, 1925, BY AMERICAN CARPENTER & BUILDER CO.

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PROTECTION FOR OUR READERS—The publishers of the AMERICAN BUILDER reserve the right to decline any advertising they believe is detrimental to the interest of its readers; to edit advertising copy and to change or eliminate any statements that reflect injuriously or cast discredit upon other building projects, machinery, equipment, supplies or tools.

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Blackstone Court
Apartments
5527-29 Blackstone
Avenue
Chicago, Ill.
Architect
Herbert Hugh Riddle
111 W. Washington
Street
Chicago, Ill.



Gurney Equipped

IN finer apartments everywhere you will see Gurney Refrigerator equipment. So widespread is the recognition of Gurney superiority that the statement "Gurney equipped," implies the meaning, "quality equipped" for any building.

This explains why Gurney Refrigerators have become first choice with Architects, Engineers and Builders of apartment houses.

These reasonably priced refrigerators with their long years of economical service are a valuable asset to the building owner. And, the complete Gurney line, developed through 35 years of conscientious manufacture, affords a wide range from which to select refrigerators exactly suited to a building's requirements.

You will make no mistake by specifying and insisting on Gurney Refrigerators.

Write today for catalog and prices on the complete Gurney line.

Gurney Refrigerator Company

Factory: Fond du Lac, Wisconsin

Permanent exhibits and sales offices:

CHICAGO
308 North Michigan Ave.

NEW YORK
260 W. 36th Street

Gurney
REFRIGERATORS



*View showing part of Zouri's facilities
for competent manufacture
and delivery.*

Zouri Indirect Key

ADEQUATE production facilities assure Zouri's customers of delivery as scheduled. This fact, and approval by the Underwriters, has gained for Zouri the confidence of the trade.

In construction, Zouri Store Fronts have distinct advantages that have steadily won increasing favor with contractors. Patented



Useful detail sheets and data book

This handbook has been written for architects, contractors and builders. It deals primarily with construction and gives plans and diagrams showing best approved methods of window and display space arrangement. The detail drawings will be welcomed by specification writers. A word from you will bring them—promptly.

ZOURI KEY-SET STORE FRONT CONSTRUCTION



*A typical drug store installation
in the Thomasson Block,
4804 N. Kedzie Ave.,
Chicago*

y-Set Store Fronts

features make installation easy and profitable. Zouri's key, particularly, which distributes pressure applied in setting to all points along the rigid copper moulding, is a safety device that greatly reduces chances of breakage.

Every finished installation, substantial and trim, is a lasting advertisement that will bring more business to the contractor.

Zouri Drawn Metals Company

Factory and General Offices

1608 East End Avenue, Chicago Heights, Illinois

DISTRIBUTORS IN PRINCIPAL CITIES—NAMES ON REQUEST

LISTED BY THE UNDERWRITERS LABORATORIES

Permanently Waterproofed Assures a Lasting Crack-Free Base



Water cannot penetrate an Elastica Stucco exterior today or in the days to come. It is *permanently* waterproofed. Water cannot seep through it and get to the background—the cause of so many stucco failures.

You know how wood lath swells and rots when water soaks into it. You know how metal rusts and corrodes under the influence of moisture. And you know how stucco is forced away even from a background of tile or brick when water gets in between such a background and stucco *and freezes*.

These are indisputable facts. However, the remedy is simple. Protect the background. And Elastica does just that—it protects the background.

The manufacturers of Elastica have spent thousands upon thousands of dollars upon *Waterproofing alone*. Water simply cannot penetrate Elastica. That is why neither moisture nor heat nor cold can cause Elastica to deteriorate. And that, finally, is why an exterior finish of Elastica—no matter whether it be a French Finish or a Dash Finish—remains intact and beautiful through time *when applied over the permanently crack-free base provided by two under coats of Waterproofed Elastica*.

Elastica Stucco should be *profitable* for you. Less of it is required, because of its greater covering capacity; it is easily and quickly applied, labor costs are less, and because it is *permanently* waterproofed, a lasting crack-free base is assured.

ELASTICA

THE WATERPROOFED STUCCO

©U. S. MATERIALS CO., July, 1924

ed

Elastica



Vine Design. A reproduction of one of the many artistic French Finishes.

Manufactured by

U. S. MATERIALS COMPANY	Chicago
AMERICAN MATERIALS COMPANY . . .	New York
ART STUCCO MATERIALS COMPANY . . .	Detroit
NORTHWEST MATERIALS COMPANY . . .	St. Paul

Nowhere else in all the world are builders offered such a variety of *building materials*

AMERICAN builders should be able to construct more attractive homes, more conveniently and comfortably appointed, than the builders of any other country. And we believe they do. But it must also be said that this very flood of materials necessitates keener perception and finer discrimination when you choose. This is as true in the selection of hardware as in any other item.

More and more builders are using Sargent Locks and Hardware of solid brass or bronze. Years of faultless service in buildings of every description and an adaptability to every present-day need justify this choice. They know that the Sargent kind costs them a little more. But once on it's on to stay. No after-fussing, fixing or excuses. Just the complete measure of beauty, service and security that only the finest of hardware can give.



Sargent Hardware for buildings of every style and price

SARGENT & COMPANY, *Hardware Manufacturers*, 51 Water St., New Haven, Conn.

SARGENT
Locks & Hardware

SARGENT

Tools & Hardware



No carpenter who has ever used a Sargent Framing Square can be satisfied with any other

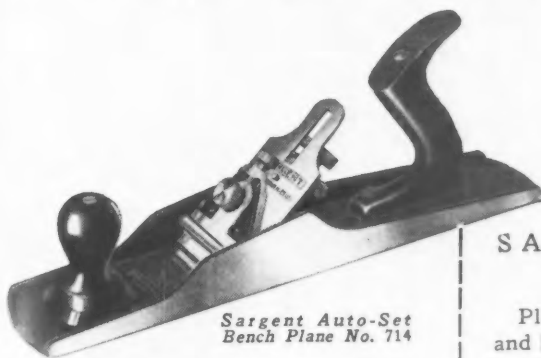
DO YOU know how convenient Sargent Standard Steel Squares really are? Do you know that they are the only squares made which require no figuring by the carpenter? The necessary figures are all given in the rafter tables on the square. They are for ordinary widths of buildings having roofs of common pitches. They have been most carefully prepared.

Sargent Squares are made from high-grade steel specially tested for trueness. They are accurately marked and depend-

able under every condition. They give lengths of common, hip, valley, jack and cripple rafters; also all top, bottom and side cuts.

Growing in popularity is the Sargent Take-down Square. This is as completely scaled and tabled as the one-piece type. It fits in the shoulder kit and can be put together or taken apart in a few moments. You'll find it mighty convenient.

We want to send you booklets describing Sargent Squares and the complete line of Sargent Planes. These are of interest to every user or buyer of carpenter tools. Fill out and mail coupon for them today and see these fine tools at your dealer's.



*Sargent Auto-Set
Bench Plane No. 714*

SARGENT & COMPANY, *Manufacturers*
51 Water Street, New Haven, Conn.

Please send me, without cost, the booklets on Sargent Planes and Squares.

Name.....

Address.....

MASTER

The Latest and Most Improved FLOOR SANDER

For your own sake, don't think of buying a floor sander until you have secured full information about the Master. It is without question the latest, most improved—most efficient and economical machine on the market.

This is a large promise to make for it. But any experienced operator will instantly see that the machine lives up to the promise in every particular.

Consider these details—Weight only 230 lbs. with 150 lbs. on the drum when operating. No machine approaches this large percentage of useful weight. Consequently, it cuts much faster and is more easily operated.

Think of the increased work your operators will turn out when you give them this machine that does not require a continual lift to apply pressure on the drum.

And you will be astonished to see how much faster you will be able to clean floors and roll up profits by using the 8" drum. It has little or no levelling action so it cuts faster than a 12" drum, as much less material has to be ground off.

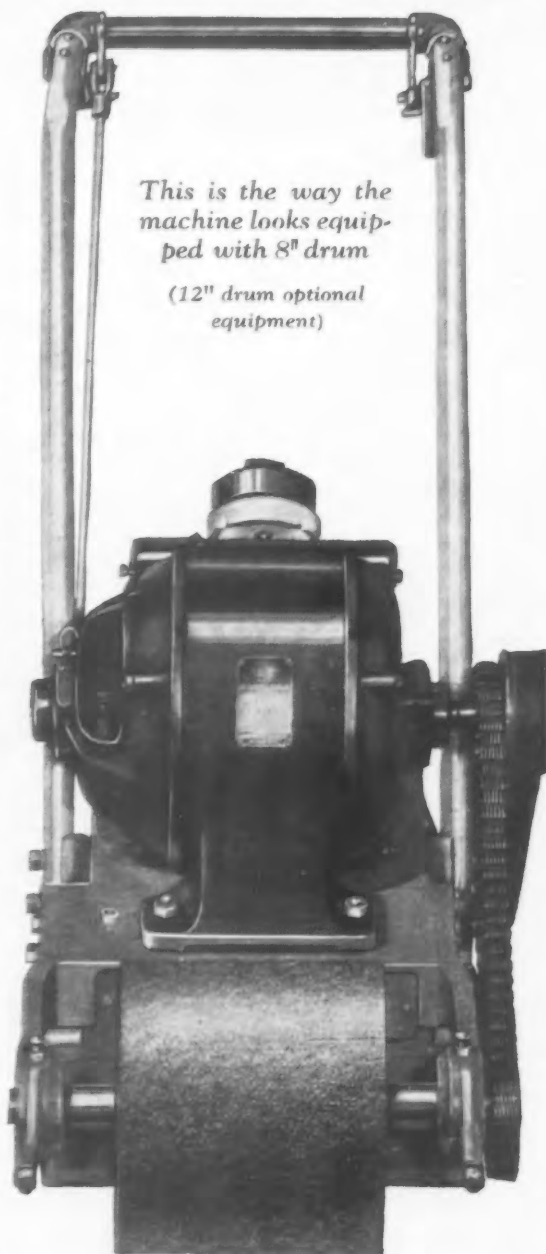
And think of being able to buy this machine at such a small initial payment and such trilling monthly payments that it will more than pay for itself as you use it.

Master
Wood-
worker
Mfg. Co.
Brush & Congress
Streets
Detroit, Mich.

Send me your new
folder together with offer
showing how I can buy a
Master Floor Sander on
small payments allowing ma-
chine to pay for itself.

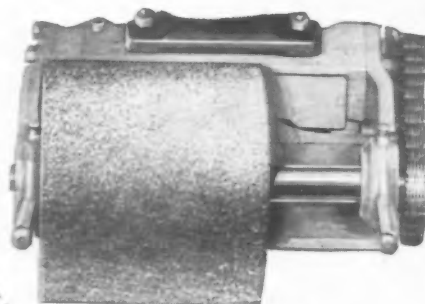
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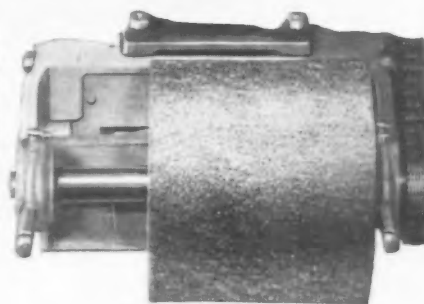


*This is the way the
machine looks equip-
ped with 8" drum*

*(12" drum optional
equipment)*

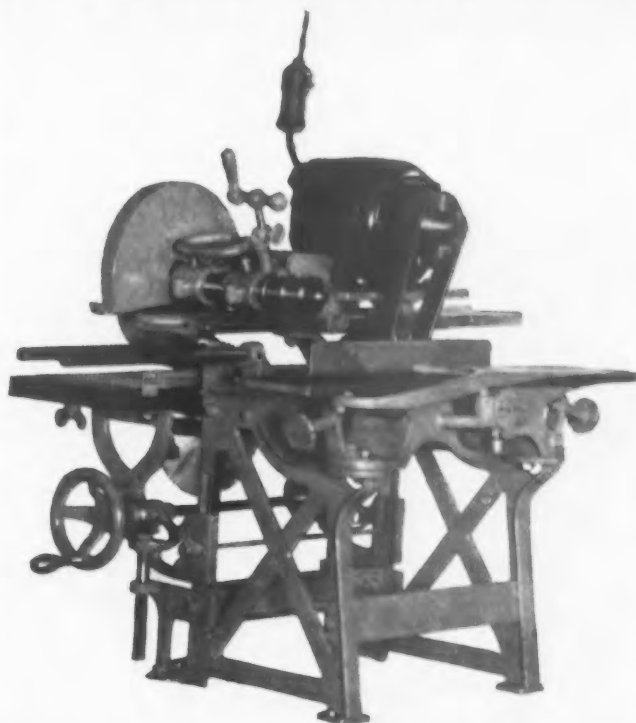


*Drum moved to right
within 1" of wall*



*Drum moved to left
within 3" of wall*

MACHINES



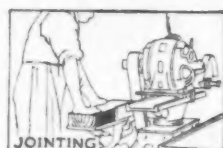
The World-Famous
Master—

WOOD- WORKER

*Here Is a Fact That Deserves
Careful Thought*

Do you know that thousands of successful contractors now own and operate Master Wood-workers, each one of them saving 4 to 6 men's labor?

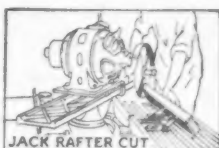
12 Machines in
One—Runs on a
Lamp Socket



Many of these contractors are probably your competitors. They have the advantage of you—an advantage they have no right to possess. They can bid lower on work and turn out more and better work than any contractor can without one of these marvelous machines.

The model illustrated is No. 10, specially adapted for inside finishing. The Master is also made in three larger models, suitable for heavy mill work and for making every cut necessary for house building.

The No. 10, illustrated, handles



1" stock and saves over one-half the labor on inside finishing, making every cut necessary. It runs from a lamp socket—easily carried from room to room and can be quickly taken down in three parts and carried away in the tool box.

Whether you think you are in a position to buy immediately or not, we ask you for your own sake to fill out and mail the coupon below and learn all about the Master. You will probably be surprised to see how easily you can buy one and pay for it out of the profits it makes without a cent of expense to you.

Master
Wood-
worker
Mfg. Co.
Brush and Congress
Streets
Detroit, Michigan
Send me your New Catalog
and Easy-Payment Plan.

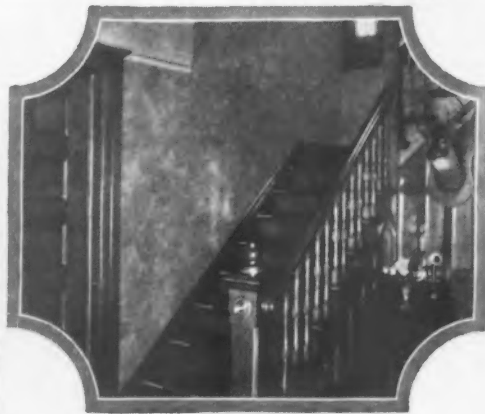
Name _____

Address _____

Here's *Proof of the Pudding.*



Showing the Beautiful Staircase and (Right) the Reception Hall Floor in the Lancaster, Pennsylvania, Home of John B. Oblinger — Finished 30 Years Ago.



The White Oak Woodwork in the Flint, Michigan, Home of William Goodes Is in Perfect Condition after 27 Years of Service. "Liquid Granite Is More than Waterproof—It Wears."

Varnished 30 years ago ... Beautiful Today!



"Save the surface and you save all!" — *After a Good*

WHEN a gallon of varnish is worth \$50 and can be bought for \$5, the fact is worth knowing.

Read This—

In 1895 John B. Oblinger of Lancaster, Pennsylvania, built the finest residence in town. His architect selected magnificent specimens of walnut, mahogany, hazel, cherry and white oak for the interior trim. It was varnished with Berry Brothers' Luxeberry Wood Finish, the original Hard Oil, and rubbed.

Today there are few homes in America that have more beautiful woodwork than this one. In 30 years it has not been touched with a varnish brush. The finish is as perfect as it was in the days before the Spanish-American War.

The floors in this house were finished with Liquid Granite Floor Varnish. Some of them have been refinished in recent years. But the floor in the reception hall, as pictured above, has never been re-varnished and is in beautiful condition today!

Mr. Oblinger's experience with Berry Brothers' var-

nishes is neither unusual nor exceptional. There are thousands of home, apartment and building owners in all parts of the world who pay the price for Berry quality in order to save the tremendous accumulative expense of frequent refinishing.

Here Is Another Example—

William Goodes of Flint, Michigan, built his home in 1898 and finished the white oak woodwork with Liquid Granite. A view of the staircase is pictured above at the right. It shows the original varnish. Even the stair steps have never been refinished. Not a single hairline crack can be found anywhere. The finish is as beautiful today as when the painters completed their work 27 years ago!

Mr. Goodes writes: "Your advertisement which says, 'Liquid Granite is more than waterproof—it wears!' is certainly true!"

Figure it out for yourself. If Luxeberry Wood Finish and Liquid Granite give such service as this, you cannot afford to employ substitutes that sell for the same price or less.

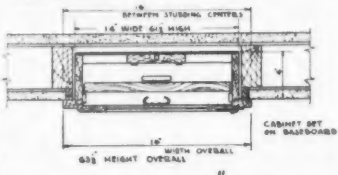
BERRY BROTHERS INC.

Varnishes Enamels Stains
Detroit, Mich. Walkerville, Ont.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Two Smashing Bargains that Should Attract Every Builder!

"White" Special "A" BUILT IN Ironing Board



Positively the **BIGGEST BARGAIN**

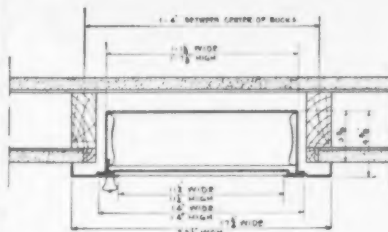
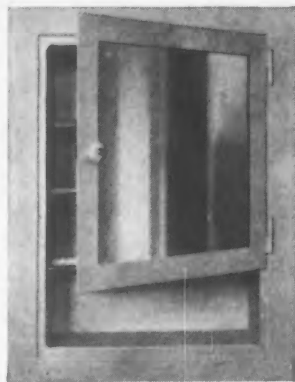
in **Built-in Ironing Boards** to be found

An extremely well made Built-In Ironing Board Cabinet complete with removable ironing board, sleeve board, broom holder on door and sufficient space at bottom of cabinet for iron. Complete with hardware and ready to apply finish. Very strong and substantial. To fit between studdings 16 inch on center. To set on baseboard. Height 61½ inches, 14 inches wide and 4 inches deep. Overall dimensions, 63½ in. high by 16 in. wide.

"White" Special "A" Built-in Ironing Board F.O.B. Chicago, in lots of 50, Each.....
Less than 50, Each \$7.50

\$7.00

"White" Special "B" Medicine Cabinet



Highest Quality Enameled Steel

Large Mirror

An attractive all steel Medicine Cabinet, finished with high grade white enamel. Equipped with three removable glass shelves. The shelves have a bulbed edge which strengthens them and prevents chipping. Open comb and brush shelf at bottom. A large, clear vision mirror, 11¼ inches square is firmly set in the door. Durable friction

latch with white china knob. Strong hinges prevent door sagging. The entire cabinet is extremely well constructed of high grade materials. Over all dimensions are 17¾ inches wide by 22½ inches high by 4⅝ inches deep. Built to fit opening 13⅛ inches wide by 19⅛ inches high. Fits between studdings 16 inches on center.

"White" Special "A" Medicine Cabinet F.O.B. Chicago, in lots of 25, Each.....
Less than 25, Each \$7.50

\$7.00

The "White" Door Bed Company

130 North Wells Street ~ Chicago, Ill.

Sales Agents in the Principal Cities

The "White" Door Bed Company
130 North Wells Street, Chicago, Illinois

Please Ship { C. O. D. Net 30 Days }

Name _____

Address _____

If 30 Day Terms Attach References

ORDER NOW WITH THIS COUPON

Armstrong's Linoleum

for Every Floor in the House



This is "Casa Romero," the Spanish-Moorish house in Oakland, Cal., erected by Builder R. C. Hillen with modern floors of Armstrong's Linoleum. Living-room and "dinette" have Armstrong's Marble Inlaid No. 74; sun parlor has Armstrong's Marble Inlaid No. 70; kitchen has Armstrong's Moulded Inlaid No. 3148; and the halls and bedrooms have appropriate colorings of Armstrong's Jaspé, dark gray, light gray, blue.



How a California Builder Is Using Linoleum to Help Sell His Houses

IN Oakland, California, Building Contractor R. C. Hillen has just begun a realty development operation which he calls the "Court of All Nations." When completed it will consist of 60 modern homes, mostly of European design and nearly all built with permanent floors of Armstrong's Linoleum.

Announcing the opening of "Casa Romero," the first of the houses completed, Mr. Hillen's advertisement in the Oakland newspaper reads, "Following the European custom of using linoleum in all the rooms, Armstrong's Linoleum has been laid on all the floors in Casa Romero."

Mr. Hillen's unique project has met with astounding success. In the few weeks since it was thrown open for inspection, "Casa Romero" has been seen by over 50,000 persons interested in

new homes. The first Sunday, 10,000 people visited the modelhouse. More than 12,000 saw it the second Sunday.

Of all the unusual features of "Casa Romero"—the iron grille door at the entrance, the big pipe organ radio, the kitchen ventilating system, the "dinette"—nothing attracted so much attention as the beautiful floors of Armstrong's Linoleum. Scores of people went to the store that furnished the linoleum, to investigate these new floors. Several other prominent builders are planning to feature linoleum floors in their development work.

Floors of Armstrong's Linoleum can be used by any builder, as a decidedly attractive selling feature for new houses. It will pay you to look into their possibilities. Write us for full details and samples.

Look for the
CIRCLE A
trade mark on
the burlap back



ARMSTRONG CORK COMPANY, *Linoleum Division*, LANCASTER, PA.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Walls of Wood

MANY a man has dismissed the idea of "Walls of Wood" simply because he feels he could not afford them. He has admired them in fine hotels and clubs—he has enjoyed their sumptuous elegance in costly theatres or in the "flashes" of millionaire's homes in the "movies"—and it has never dawned upon him that he could have them in his home—at a real economy.

Their first cost is within his reach—thanks to Algoma efficiency of manufacture.

Their installation cost is below the city scale which is paid to lathers and plasterers.

And their maintenance cost is next to nothing—because their natural beauty, beneath

*Supply uncommon
richness at
commonplace cost*



a coat of wax or varnish—lasts with minimum refinishing cost for years.

Algoma panels are genuine wood panels—built up layer upon layer, to prevent warping or cracking. You can get them in any desired domestic wood, for stained or natural finish—and you can get them in all the imported woods customarily used for furniture.

Send for the practical book, "Suggestions for Walls of Wood," showing dozens of ways in which Algoma Panels may be installed. Ask us for prices and stock panel list—you can get "same day service" on orders sent to our Chicago warehouse.

ALGOMA PANEL COMPANY, Algoma, Wis.
Stock Panel Warehouse: 1524 So. Western Ave., Chicago
Telephone Canal 0485

Algoma

The Better PLYWOOD

Bruce Oak Flooring THE BEST Oak Flooring



Adds to Rental or Selling Value



Easy to Keep Clean



No Cracks to Catch Dirt



Fits Snugly, Neither too Tight Nor Loose



A Bruce Floor is Sanitary



Bruce Oak Flooring is Readily Available



42 Homes Selling for More Money — because they have Bruce Oak Flooring

"BRUCE" is a nationally advertised flooring. People have been told in the pages of their favorite magazines what to look for in the way of uniform quality and appearance, and when the prospect is told that "the floors are Bruce," one important part of the selling task is done.

Walter W. Morrison, Realtor of Columbus, Ohio, who has equipped more than 42 houses constructed this year with Bruce flooring, is one of many realtors in the country who recognizes and profits by the added value afforded by a standard recognized flooring.

Variety within the Cost Estimate

Regardless of the character of homes built, there is Bruce oak flooring that will come within the cost estimated. By selecting different grades for different rooms, using both quartered and plain sawn, the entire house may be floored in an attractive and distinctive way, at moderate cost. Yet the quality will be the highest, regardless of grade or price, as there is only one standard.

The wise builder uses Bruce Oak Flooring

Because: It is made from most carefully seasoned lumber, kiln dried by most exacting processes. Machine work is accurate, providing tight, snug-fitting flooring, which is sanitary, with no cracks to catch dirt.

Stocks are readily available, anywhere in the United States.

Manufacture is uniform, and a minimum of scraping and sanding will be required to obtain a well finished floor.

Let our technical department help you select grades and finishes suitable for different rooms.



Interior views of a
"Bruce floored Home"



Oak floors for Health



Bruce oak flooring, and Bruce "Cedar line" accents. I encourage cedar floors for closets, doors, and all nationally through lumber dealers everywhere.



THIS book tells you about the convenience, economy and attractiveness of Bruce oak flooring. The ease with which it may be kept clean and bright, the enduring qualities, the increased value added to any home; appropriate use of various grades and widths, with practical suggestions for different rooms; distinctive effects which may be obtained from color finishes. 24 pages of interesting facts, fully illustrated. Write today for your free copy.

E. L. BRUCE COMPANY

MEMPHIS TENNESSEE

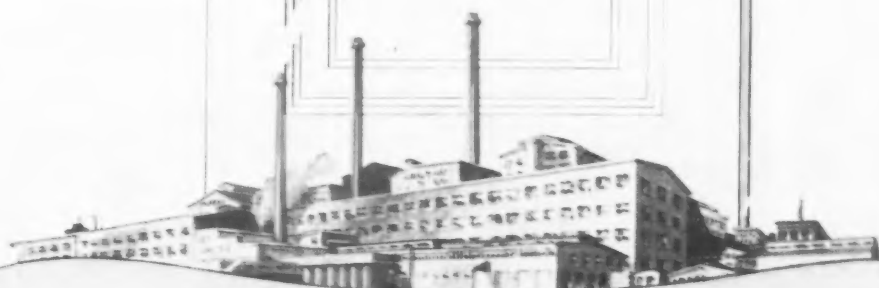
LARGEST MAKERS OF OAK FLOORING IN THE WORLD

Price

Softwood
about one
dollar
more than
a one
panel
softwood
door

Price

Hardwood
no
more
than a
one
panel
hardwood
door



ORIGINAL
The PAINE Miracle Door

TRADE MARK REG

PAT. JULY 10, 1923

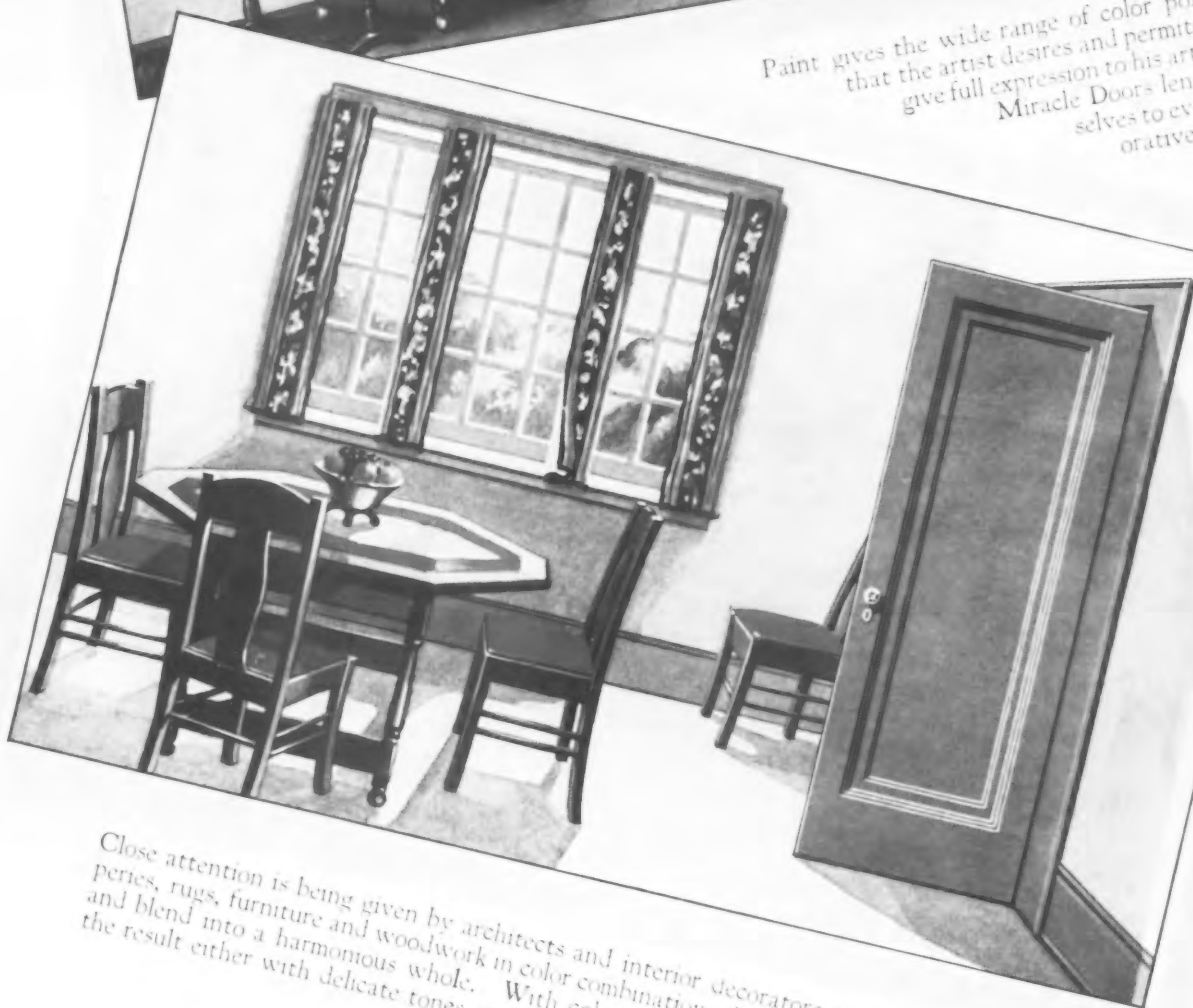
**Paine
Lumber
Company
Ltd.**

The Miracle Door is a Reinforced Door—A Miracle of Strength and Beauty

ORIGINAL
The **PAINE Miracle** Door



Paint gives the wide range of color possibilities that the artist desires and permits him to give full expression to his art. Paine Miracle Doors lend themselves to every decorative scheme.



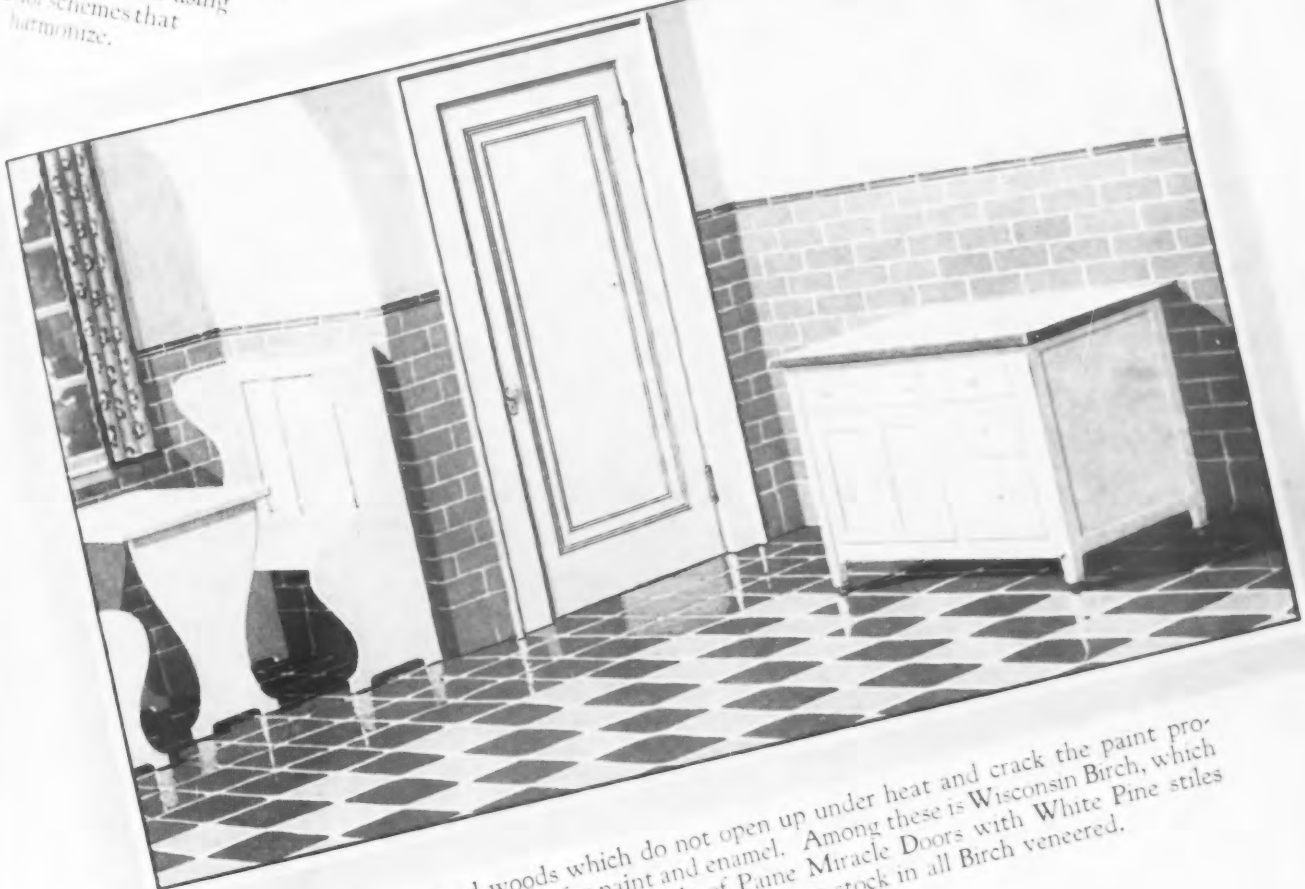
Close attention is being given by architects and interior decorators to the walls, draperies, rugs, furniture and woodwork in color combinations that complement each other and blend into a harmonious whole. With color the interior decorator accomplishes the result either with delicate tones or deep shades as the scheme demands.

Miracle Doors cost very little more than ordinary doors

ORIGINAL
The **PAINE Miracle** Door



The very cheapest woods may adapt themselves to the common stained and varnished finishes. An atmosphere of taste and exclusiveness can be assured by painting good woodwork using color schemes that harmonize.



Only close-grained woods which do not open up under heat and crack the paint provide a proper background for paint and enamel. Among these is Wisconsin Birch, which is used in the insert frame and panels of Paine Miracle Doors with White Pine stiles and rails. Paine Miracle Doors are also made as stock in all Birch veneered.

Miracle Doors cost very little more than ordinary doors



HOME OF THE MIRACLE DOOR

The largest woodworking plant in the world

Established 1853

PAINE MIRACLE DOORS have been endorsed and specified by architects and welcomed by the entire building industry as the popular priced door of exclusive design. They are adapted to all types of buildings, including homes, apartments, hotels, hospitals and office buildings.

The possibilities of staining the Miracle Door and using it in combination with varied wall treatments are unlimited. Desired contrasts can easily be secured with the Miracle Door which adapts itself to any style of trim.

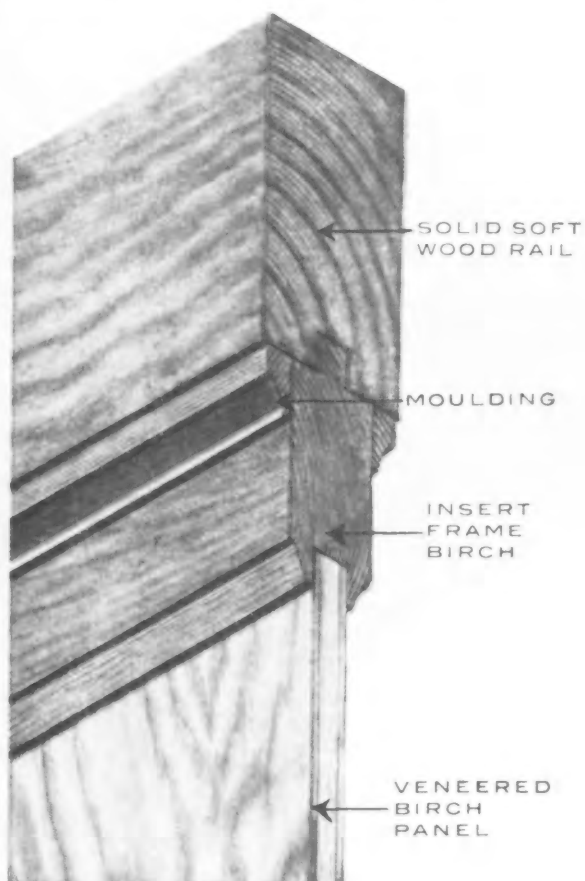
The Miracle Door is made possible by entirely new patented standards of precision in wood manufacture.

The Miracle Door is made in all woods.

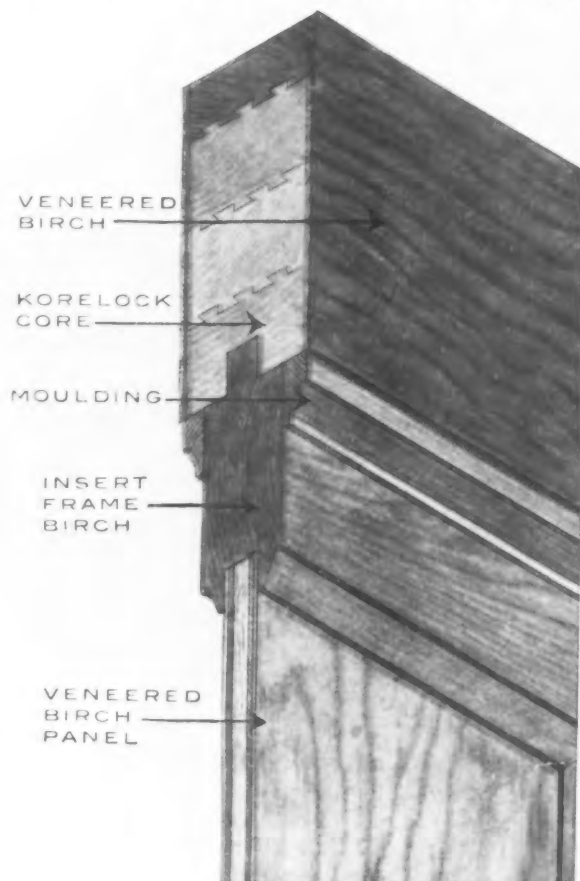
The Miracle Door is produced and guaranteed by an organization that operates from tree to finished product with facilities without a parallel in the woodworking industry.

Wholesale stocks of Miracle Doors are carried in over 90 cities. If your dealer does not carry Miracle Doors write us.

A 56-page catalog showing representative installations of Miracle Doors and giving numerous complete ideas in color for finishing Miracle Doors, together with the floors, walls and woodwork in connection, will be mailed you free upon request.



Miracle Solid Softwood Door



Miracle Hardwood Veneered Door

PAINE LUMBER COMPANY, LTD.
OSHKOSH, WISCONSIN



An Old Name Wins New Fame

One of the earliest manufacturers of roofing in the United States, for over 25 years, we have hidden our identity behind the roofing jobbers. But during that time roofing made by Chatfield was used on prominent buildings of all types. On many, the original Chatfield roofing still remains intact, having for years successfully withstood the ravages of ice, snow and the other disintegrating elements.

Now, we have developed a new strip shingle roofing that is surprising dealers everywhere because of its beauty, lasting qualities and economy in laying and original cost.

Chatfield's Para-Hex Strip Shingles are self aligning and self spacing—may be laid in two-thirds to one-half the usual time. Obtainable in three colors; blue-black, gray-green and Indian-red.

CHATFIELD'S
PARA-HEX
STRIP SHINGLES

Chatfield's Para-Hex Slate Surfaced Asphalt Strip Shingles can be laid in two-thirds to one-half the usual time. Eight per cent (8%) fewer strips are needed for any given roof area. The roofing design is original and in perfect taste—plain or in color combinations.

Chatfield Para-Hex Strip Shingles come three to the strip, are standard in weight, thickness and weather proofing qualities, yet cost less to buy and lay.

Let us demonstrate the value to you in increased sales of Chatfield's Para-Hex Strip Shingles. Write us today for further particulars.

SEND THIS COUPON

CHATFIELD'S
PARA-HEX
STRIP SHINGLES

THE CHATFIELD MFG. CO.,
Dept. A., Cincinnati, Ohio.
Gentlemen:

Kindly send us without obligation on our part descriptive literature and samples of Chatfield's Para-Hex Strip Shingles.

Also explain to us your Quantity Discount and Co-operative Advertising Agreement.

Name

Address

City..... State.....

FURNISH & FURNISH REAL ESTATE

LOANS AND INSURANCE

615-623 BRADY BLDG.

*"Easier sold where they are already
installed with American Radiators
and Ideal Boilers"*

Mr. Bruce Barton,
c/o Barton, Durstine & Osborn,
383 Madison Avenue,
New York City.

Dear Sir:

Our experience and observation has shown conclusively that in offering residence or apartment property, such properties are much easier sold where they are already installed with American Radiators and Ideal Boilers and such properties with the installation already made for hot water or steam heating aids very materially in the sale of same at a price above what it would cost for such an installation.

The average buyer of a nice home usually very much prefers every modern convenience for comfort already installed and is willing to pay a reasonable price for such an installation thereby obviating the necessity for any changes and delays in making the home complete.

We are,

Yours very truly

FURNISH & FURNISH,

By: 

Even in the milder climate of Texas, realtors and builders find that IDEAL Boilers and American Radiators are salesmen!

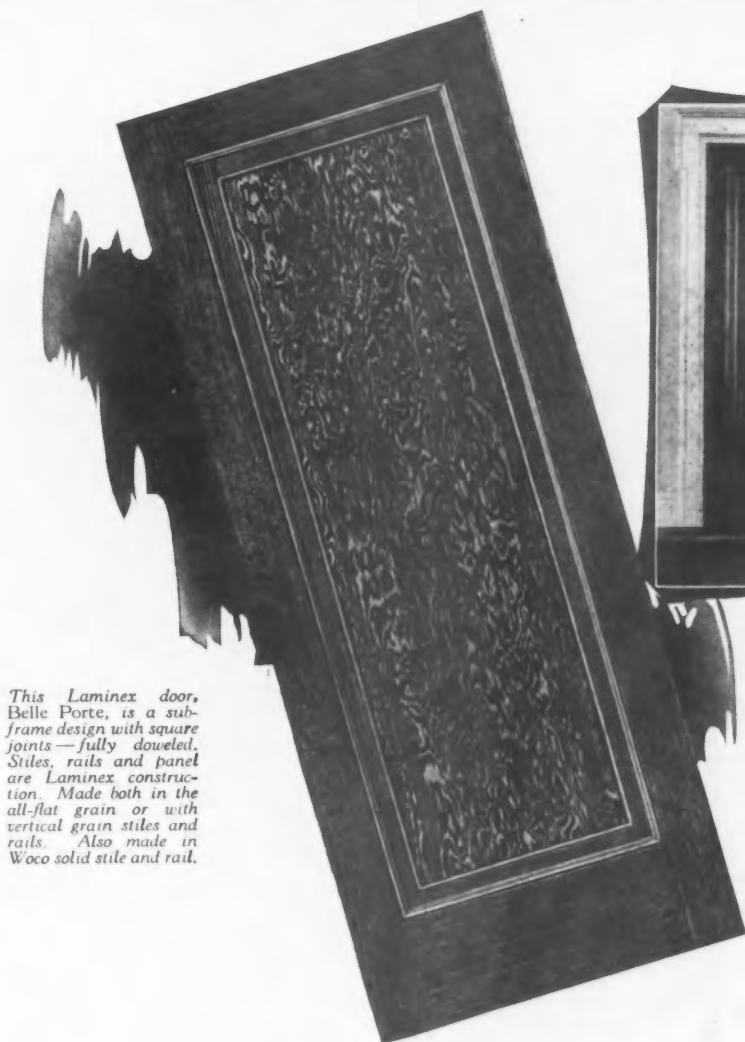
AMERICAN RADIATOR COMPANY

Dept. T210, 1807 Elmwood Ave., Buffalo, New York Sales Offices in all principal cities

IDEAL BOILERS AND AMERICAN RADIATORS FOR EVERY HEATING NEED



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



This Laminex door, Belle Porte, is a sub-frame design with square joints—fully doweled. Stiles, rails and panel are Laminex construction. Made both in the all-flat grain or with vertical grain stiles and rails. Also made in Woco solid stile and rail.



"Belle Porte" is but one example of attractive designs available in Laminex—the trouble-proof door.

An entrance of rare beauty —Laminex "Belle Porte"

THE Laminex "Belle Porte" is popular with architects, builders and the buying public where an interior entrance of beauty, dignity and simplicity is desired. And its beauty is more than "skin deep." It is built up, like every Laminex door, of select pieces of Douglas fir, united with an improved waterproof cement under great pressure, so that it cannot shrink, swell or warp.

Laminex is the door you see tested in water tanks at the leading building shows. It is a widely-advertised door—a door that

within a year of the time it was announced has won its way *on merit* with architects and builders and is now found in prominent homes, apartments and public buildings.

Laminex doors, for instance, are installed throughout the million dollar *Parkview Hotel Apartments*, at Memphis, Tenn. (Barnett, Haynes and Barnett, architects, St. Louis, Mo.)

Laminex doors bear an absolute replacement guarantee. Look for it. If Laminex is not readily obtainable, write us for the name of nearest distributors. Ask for special architects' and builders' monograph and free sample of Laminex wood so that you may make the famous water test yourself.

THE WHEELER, OSGOOD COMPANY, Tacoma, Washington

Sales Offices: New York,
Memphis, Los Angeles,
San Francisco, Spokane,
London, England
Chicago

Manufacturers of
Laminex Doors
Woco Doors and
Fir Sash

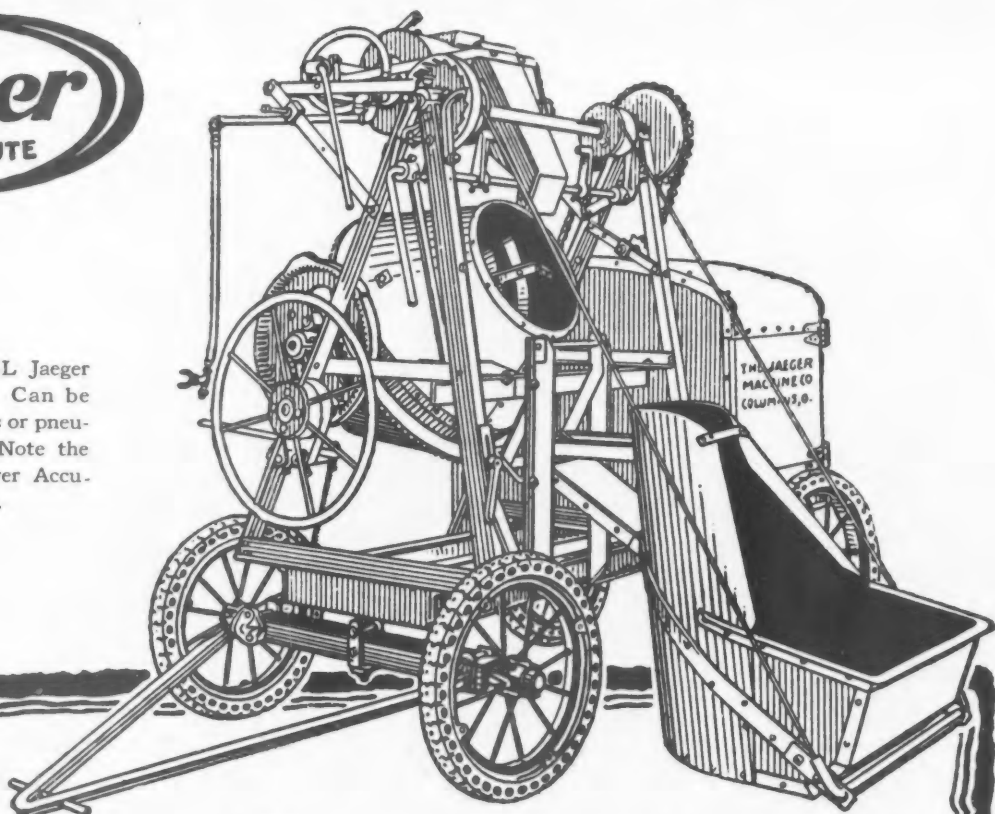
LAMINEX DOORS

WILL NOT SHRINK, SWELL OR WARP

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Illustration shows the 5-L Jaeger on cushioned wheels. Can be equipped with steel wheels or pneumatic tires as desired. Note the power loader and Tip-Over Accurate Measure Water Tank.



Perfect Concrete at "Mix-a-Minute" Speed!

Speed that makes profits on every mix! Dependable performance at all times! Low cost of operation! And perfectly mixed concrete! These are the remarkable advantages a Jaeger Mixer brings you.

Whether you build skyscrapers or garden walks—concrete block or bridges—there is a Jaeger model for your exact needs. There are 36 different concrete mixers in the Jaeger Line. They range in capacity from 3 to 24 cu. ft. of unmixed materials and 2 to 14 cu. ft. of mixed concrete.

Our Distributors Carry a Complete Stock of Jaegers

A complete stock of Jaeger Concrete Mixing Outfits and a full supply of parts is carried in over a hundred of the principal cities of the U. S. Our distributors will welcome the opportunity to demonstrate Jaeger Quality to you. They want you to see for yourself the exclusive patented Jaeger Tilting Drum—the exclusive patented Tip-Over Water Tank—the exclusive patented Automatic Discharge Device—and other characteristic Jaeger features.

Quality built in every part, Jaeger mixers are first choice with over 30,000 contractors. For dependable, trouble-free service—year after year—they have no equal. Write us today for our latest catalog and the name of our nearest dealer.

The Jaeger Machine Company

318 Dublin Road

Columbus, Ohio



A Roof That Sells the House

*Roofs with delightful contrasts of light and shadow
can now be secured at moderate cost*

MANY builders are finding in sheet steel tile a new means of achieving the unusual and beautiful in exterior treatment. The deadly monotone of drab, uninteresting surface is absent. Bright sunlight is broken by delightful nuances of curve and shadow. There is an irresistible appeal to make this house a "home."

Sheet steel tile appeal to the practical mind of the builder. They are light in weight and require no special sub-structure to carry them. Their form provides a dead-air space above the sheathing that protects alike against summer's heat

and winter's cold. Sparks are rendered harmless by the sturdy steel surface. Even lightning can not harm building or occupants if this roof is properly grounded.

It will pay every builder to study the multitude of uses and economy of sheet steel in building construction and furnishing—walls for bathroom and kitchen, space-saving closets, durable, cleanly kitchen equipment. These and many similar uses are covered in our interesting little booklet, "THE SERVICE OF SHEET STEEL TO THE PUBLIC." A copy will be mailed on request.

A correctly installed warm air heating system not only provides ample heat for any room as required, but also supplies the air with the proper amount of moisture. The architect's



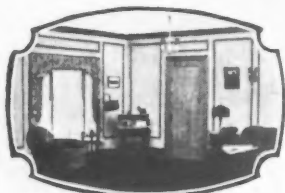
work of specification has been greatly simplified by the Illinois University's research and the National Standard Installation Code.

SHEET STEEL
TRADE EXTENSION COMMITTEE
OLIVER BUILDING
PITTSBURGH PENNSYLVANIA

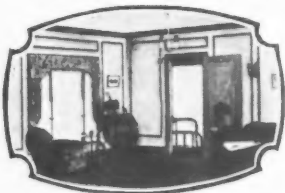
Colonial Hall,
Kew Gardens,
New York, now
nearing completion
equipped exclusive-
ly with Murphy
In-A-Dor Beds.



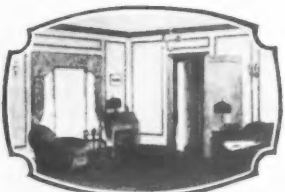
This building, de-
signed and owned
by Wohl Bros., has
78 two-room apart-
ments with dress-
ing closet and
dinette.



Door closed with perfect
concealment. No indi-
cation of an enclosed bed.



Door open—showing po-
sition of bed when not in
use.



Bed half way out—a full
sized bed through the or-
dinary door.



Murphy all steel bath-
room cabinets are per-
manently beautiful and
guaranteed for the life of
the building. Unusually
attractive in design and
construction. Specify
them for greater economy
and tenant satisfaction.

Why experienced Architects, Builders and Contractors Specify Murphy IN-A-DOR Design and Construction

MURPHY In-A-Dor installation doubles the living accommodations of an Apartment or Home. Tenants need and occupy a less number of rooms. Saving in cost of furniture and rental increases the revenue of the owner's investment—a mutual benefit to both owner and tenant, therefore, use of the Murphy is purely an economic proposition.

Let Our Service Department Help You—No Obligation

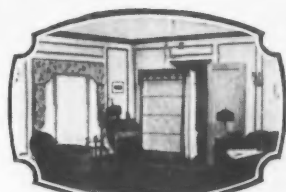
An experienced technical department is maintained for the benefit of architects, builders, and apartment owners at each Murphy office. Let us work with you.

The MURPHY IN-A-DOR BED

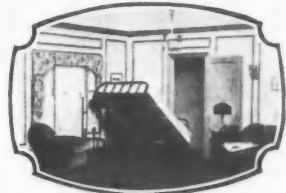
THE MURPHY DOOR BED COMPANY

Offices in All Principal Cities

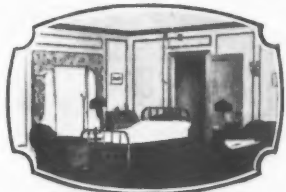
Chicago, Ill.	22 W. Monroe St.	New York City	19 W. 44th St.
St. Louis, Mo.	315 N. Tenth St.	Atlanta, Ga.	204 Arcade Bldg.
Detroit, Mich.	7th Floor Kresge Bldg.	Seattle, Wash.	Terminal Sales Bldg.
Birmingham, Ala.	513 N. 21st St.	San Francisco, Calif.	Crocker Bldg.
Cleveland, O.	1140-42 Hanna Bldg.	Los Angeles, Calif.	1807 S. Main St.
Kansas City, Mo.	1114 Grand Ave.	Denver, Colo.	1534 Blake St.
Dallas, Texas	1919 Pacific Ave.	Ottawa, Can.	205 O'Connor St.
El Paso, Texas	Neff-Stiles Bldg.	Montreal, Can.	153 Peele St.
Houston, Texas	2301 Main St.	St. Petersburg, Fla.	225 Second Ave., S.
New Orleans, La.	319 Dryades St.	Miami, Fla.	234 Columbia Bldg.



Bed ready to lower—note
how easy bed springs
may be cleaned.



Bed half way down, note
perfect balance of bed in
any position.



Bed on floor at desired
angle. No need of moving
furniture, just swing bed.



The new Murphy In-A-
Wal Ironing Board in an
all steel cabinet provides
another household neces-
sity which will enhance
the desirability of any
home, apartment or
apartment hotel. Send
for special descriptive
matter.

There is Only One In-A-Dor Bed "THE MURPHY"



The Freese-Rohde Department Store, Sioux Falls, S. D. Architects—Perkins & McWayne, Sioux Falls; General Contractor—Henry Carlson Co., Brasco Copper Store Front furnished and installed by Sioux Falls Paint & Glass Co.

One of the Largest Store Fronts in South Dakota

Brasco Advanced Features

*Extremely simple in design.
Indirect screw pressure.
Heavy gauged copper.
Extra wide grip on the glass.
Artistically beautiful.
Wide drainage gutter.
Staggered ventilation ducts.
Easy to install.
Economical to glaze.
Employs standard millwork.*

Brasco

COPPER STORE FRONTS

This progressive Sioux Falls department store is an interesting example of the present day tendency toward advanced design in sales making store fronts, presenting effective window displays and lighting.

The safety of this vast expanse of plate glass in and around the "island window," the efficient use of every foot of space both horizontally and vertically and the harmonious beauty of the entire design are intensified by the built-in qualities of the Brasco Copper Store Front installed in this building.

Contractors find in Brasco the greatest up-to-date-ness combined with every necessary feature of strength, glass safety, permanence, ease of installation, ventilation and drainage. These big advantages make it easy to build good, steady profits putting in Brasco Fronts. Mail the coupon below for complete information—free.

BRASCO MANUFACTURING CO.

5029 South Wabash Avenue

CHICAGO

**Mail this Coupon
for the money-making
Brasco story**

BRASCO MFG. CO., 5029 South Wabash Avenue, Chicago.

A.B. 3-25

Send me your free information on profitable store front work.

Name _____

Address _____



Qualifying Leadership

THERE are certain requisites of every leader. In the manufacture of gasoline engines they are: a perfected, tried and proven product, practical engineering staff, skilled workmen, spacious and modern plants, financial stability, wider recognition and national parts distribution.

Le Roi qualifies on every count. Its latest acquisition—a big addition to its plants—gives it another step forward, sets Le Roi out even further in front—an enviable position.

Le Roi's leadership and claim to **dependable power** is an earned one. It is backed by performance. The unwavering Le Roi fidelity to the highest engine-building standards has resulted in the perfection of every construction detail; thus assuring ruggedness, surplus power and enduring service; and practical design for machinery that depends on power for profitable performance.



The significant fact about the Le Roi Engine is its surprisingly low average repair part cost per year. This assures a lower operating and maintenance cost than other engines of this type can equal.

Look to the Le Roi for dependable power, longer life; and the plant back of it for the latest, practical designs known to experienced engine manufacturers who make nothing else.

LE ROI COMPANY
MILWAUKEE - WISCONSIN

LE ROI ENGINES
for dependable power!

The Finest Residences Are Now Painted The SPRACO Way



GOOD painting is no longer a luxury. The Spray methods have settled that and in so doing have stimulated a general demand for better illumination and beautification. The best work by the brush method has not only been equalled but surpassed by the SPRACO Equipment method for many reasons.

1. A SPRACO Gun will project paint into places the brush cannot reach, such as open joints, rough places, mouldings, panels, lugs, plates and rivets, sealing them with a durable coating at minimum cost.

2. Paint applied the SPRACO way will penetrate the pores of the surface better because the impact of the paint striking the surface secures a better bond and produces a more uniform result.

While this means much, it is but a part of the story. An operator with a SPRACO outfit under equal conditions can cover five times as much surface as he can with a bristle brush. Hence labor efficiency is greatly multiplied—a mighty important factor in building construction. The time to investigate spray painting is before, not after the painting season. Write today for Bulletin 82.

SPRAY PAINTING AND FINISHING EQUIPMENT SALES COMPANY

60 High Street :: :: Boston, Mass.



The Devonshire, 6334 Sheridan Road, Chicago. Architects, McNally, Quinn & Company, Chicago. Owner, Devonshire Building Corporation, Chicago. Each of Twenty-eight Kitchens equipped with Reliable Gas Range with Lorain Oven Heat Regulator.

Twenty-eight RED WHEELS

TWENTY-EIGHT beautiful apartment-kitchens furnished with Gas Ranges equipped with Lorain Oven Heat Regulators. Twenty-eight more dwelling places for satisfied tenants—their satisfaction due, in large measure, to the business judgment of those responsible for the specification of kitchen-equipment.

Nothing could add to the convenience and efficiency of the kitchen—nothing could increase the health and happiness of the household—nothing keep cooks contented, in the years to come, as the famous Lorain RED WHEEL.

The Lorain is a thermostat that measures and automatically maintains the heat of the oven at any desired temperature. It is built into the stove. It saves time, food, labor and fuel. It simplifies every oven-cooking problem for the beginner or experienced cook.

The Lorain Oven Heat Regulator is the original oven heat regulator—the only oven heat regulator manufactured

and guaranteed by the same company that makes the stoves of which it is a part.

These famous makes of Gas Ranges are equipped with the Lorain: Clark Jewel, Dangler, Direct Action, New Process, Quick Meal and Reliable. You can always tell a genuine Lorain Oven Heat Regulator by the little RED WHEEL.

Lorain-equipped Gas Ranges are made in every approved size, style and finish suitable for houses, schools, churches, apartments—any building where cooking is to be done. For specific data, see 19th edition, Sweet's Catalog, pages 2497-2506 inclusive. Additional information sent on request.



Type of Lorain-equipped Reliable Gas Range installed in kitchens of The Devonshire, Chicago.



One easy turn of the Lorain Red Wheel gives the housewife a choice of any measured and controlled oven heat for any kind of oven cooking or baking

Unless the Regulator has a RED WHEEL it is NOT a LORAIN

AMERICAN STOVE CO., 233 Chouteau Ave., St. Louis, Mo.

Largest Makers of Gas Ranges in the World

LORAIN OVEN HEAT REGULATOR

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Weatherbest STAINED SHINGLES FOR ROOFS AND SIDEWALLS

What an amazing difference they can make! A few simple alterations, plus **Weatherbest** Stained Shingles over the old clapboards and the unattractive old house at the left becomes the inviting up-to-date home shown above.

Win extra remodeling jobs at good profit

Transforming old houses into modern homes by laying **Weatherbest** Stained Shingles over the old clapboards can be done at such moderate cost that it creates a surprising volume of brand new business. It is won without paring prices and there is a good substantial margin in it for the contractor. Send today for the **Weatherbest** book on remodeling and get your share of this work.

WEATHERBEST STAINED SHINGLE CO., Inc.
143 Main St., North Tonawanda, N. Y.
Western Plant, Minnesota Transfer, Minn.

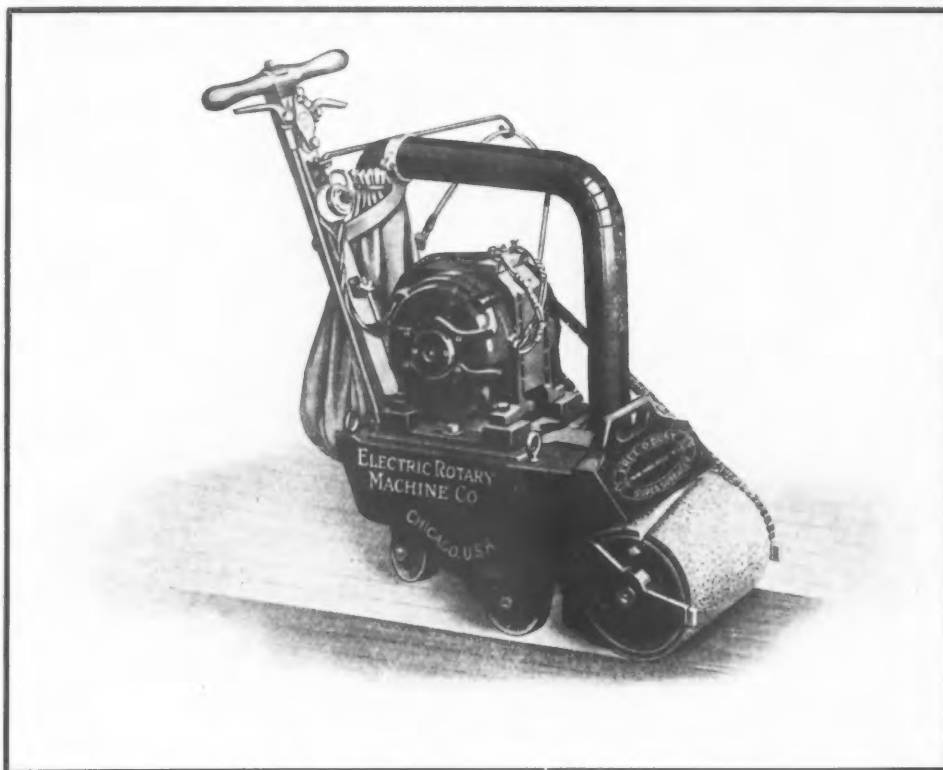


Weatherbest Stained Shingle Co., Inc.
143 Main St., North Tonawanda, N. Y.

Please send me the free **Weatherbest** book on remodeling—"Making Old Houses into Charming Homes."



EXTRA Profits On EVERY Job with the



FREE-O-DUST *Super Surfacer*

Today there are no buildings without floors and every one of them must be surfaced. Hand scraping is slow and hard work and yields only a very small profit compared to when the work is done with the FREE-O-DUST Super Surfacer.

The automatic operation of the machine makes the work very easy and assures better and faster work. Within half an hour any one of your helpers will be going along like the best of them.

The only machine on the market that picks up every particle of dust on the forward as well as on the backward movement. This is of particular advantage when resurfacing old floors in buildings that are occupied and pro-

ducts the health of the operator by preventing him from inhaling the poisonous substances that often accumulate in wood flooring.

Can be operated right up to the baseboard and has many other exclusive features. Will pay for itself on the first few jobs and add from one to five thousand dollars to your profits every year.

It does not obligate you to write for details about our FIVE DAYS' FREE TRIAL offer and free copy of our booklet "A DAY'S WORK." Write today. This booklet gives facts, figures and full information on how you can do "A WEEK'S WORK IN ONE DAY."

ELECTRIC ROTARY MACHINE COMPANY
3824 W. Lake St., Chicago, U. S. A.

Manufacturers of floor surfacing machines for 20 years

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

"NOT A KICK IN A MILLION FEET"

Reg. U. S. Pat. Off.



A Regular Money Maker **MULE-HIDE GOLDEN BROWN** *Monotype Roll Roofing*

Lumber Dealers!
Write for
Attractive Ex-
clusive Sales
Agency
Proposition
for your town
if it is open.

Go after the profits in re-roofing business with this new beautiful Golden Brown Monotype roofing.

Mule-Hide Monotype is the "last word" in shingle pattern roll roofing. It gives a striking resemblance to asphalt shingles at nearly one-half the cost of shingles. Monotype is easy to lay hexagonal and can be applied either horizontally or vertically. The tile-like pattern makes this possible.

This fast selling roof covering is the top liner with many leading contractors who make a specialty of repairing—remodeling and re-roofing. They feature it and as a result enjoy healthy sales.

Wire at our expense or mail coupon below for large samples and name of nearest Sales Agency.

THE LEHON COMPANY
MANUFACTURERS
W. 44th St. and Oakley Ave.
CHICAGO



*Monotype can be laid hori-
zontally or vertically. The
design makes this possible*

SAMPLE REQUEST

THE LEHON COMPANY,
Chicago

Mail me at once sample of Mule-Hide Golden Brown Monotype shingle design roofing, and name of nearest Sales Agency.

Name.....

Address.....

PREMIER**Automatic
Gas Water Heater***(Shown at right)*

Four thrifty sizes. No. 2,
for average homes, with
double extra heavy galvanized
tank. At the
factory \$125

Also with extra heavy copper
tank, at factory \$235
In Canada, add duty

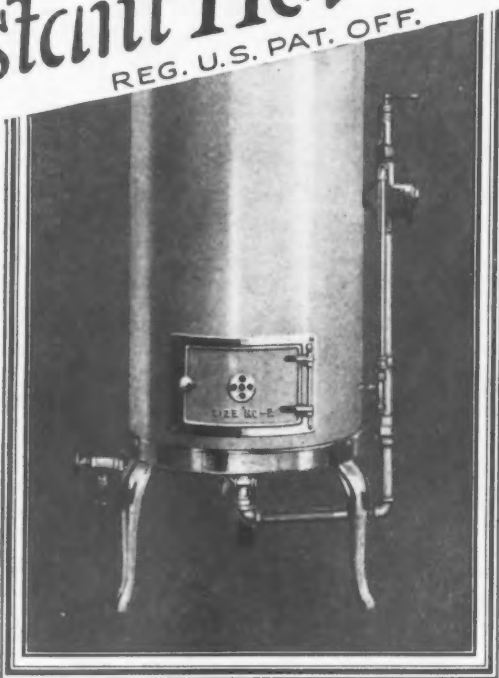


MARVEL
Gas
Water Heater

Not automatic, not insulated.
No. 32, fits average
homes. At factory \$32
Duty extra in Canada



Instant Hot Water
REG. U.S. PAT. OFF.



KEYSTONE
(Premier Junior)
Gas Water Heater

Automatic, insulated. No. 2,
suitable for average
homes, at the factory \$90
Duty extra in Canada

Home buyers know the worth of Crane hot water

You get an instant OK for *Instant Hot Water* when you show a house equipped with one of the Crane line of storage gas water heaters: *Premier*, *Keystone* or *Marvel*. Buyers and renters know the Crane reputation for quality and service. They recognize Crane responsibility. And national advertising appearing regularly in 23 magazines and 67 newspapers is reminding them constantly of Crane value; convincing them of Crane long-run economy.

Ready acceptance is thus assured for any of the three dependable water heaters illustrated here. The *Premier* runs itself, and stores hot water in a big insulated tank for instant use. The *Keystone* is also automatic and insulated. The *Marvel* supplies an abundance of hot water soon after lighting. All three are sold by responsible plumbing contractors everywhere in a full range of sizes. On display at Crane Exhibit Rooms. Write for construction data for your files.

CRANE

Address all inquiries to Crane Co., Chicago

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO

Branches and Sales Offices in One Hundred and Fifty Cities

National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco and Montreal.

Works: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton and Montreal

CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO, SHANGHAI
CRANE LIMITED: CRANE BUILDING, 386 BEAVER HALL SQUARE, MONTREAL
CRANE-BENNETT, LTD., LONDON
C^{IE} CRANE: PARIS, NANTES, BRUSSELS



we did not hesitate to decide on another Kawneer

WEICKENHART COMPANY

1000 E. GREENE ST. CHICAGO

MAY 20 1925

The Kawneer Company
2826 N. Front Street
Niles, Michigan

SIR:

It was in 1918 that we installed
at first Kawneer Store Fronts at our
location. This front gave us such
satisfaction that we will not hesitate to
install another Kawneer Store Front at our
new building.

We will be glad to quote you
on the installation of our Store Fronts.

Yours very truly,

W. H. H. H.

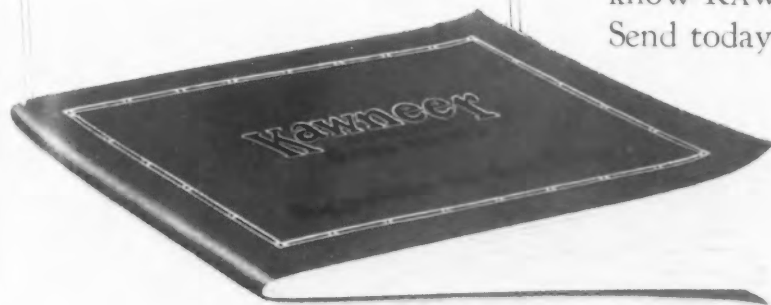
Build Repeat Business

The merchant for whom you install KAWNEER Show Windows this year will require larger quarters a few years hence. Then he will want another KAWNEER Front. Make this business of installing

Kawneer
SOLID COPPER
STORE FRONTS

yours in your city. Merchants everywhere know KAWNEER.

Send today for Contractors' Design Book.



The
KAWNEER
Company
2826 N. Front St.
Niles, Mich.

Send me free "Contractors' Design Book".

NAME

ADDRESS

CITY

STATE

Utilize Kawneer Advertising to Help You Secure More Business

THIS is the first of a new series of colored advertisements which will appear monthly in this publication, also leading retail trade paper publications covering Jewelry, Furniture, Hardware, Men's and Women's wear, Shoes and Electrical stores and shops. This KAWNEER color advertising will be supplemented by advertising in other retail fields, as well as in the leading architectural publications.

You can use this advertising to secure profitable contracts. Show it to prospective clients, advancing the many reasons for using KAWNEER Solid Copper Store Fronts to modernize their show windows either in new buildings or when remodeling.

Write us today for other sales literature which will assist you in closing contracts for store front work.

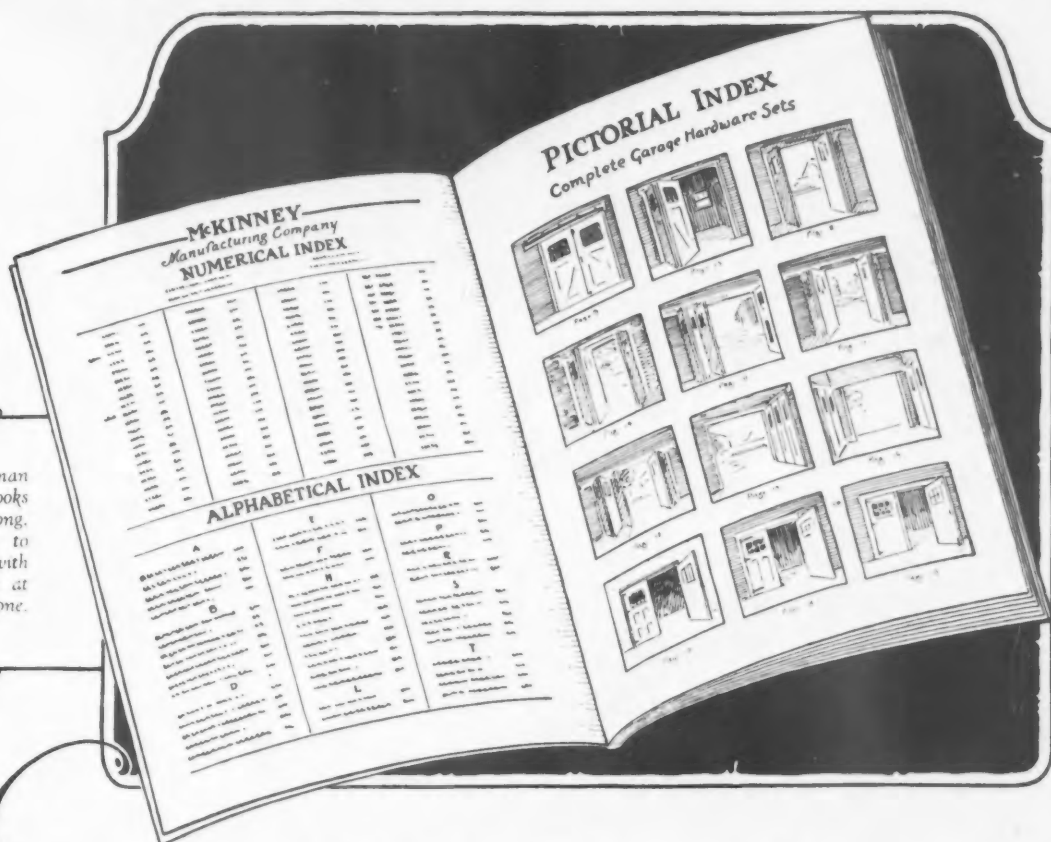
Do not overlook the six points of KAWNEER superiority illustrated below.

See KAWNEER Store Front illustrated on preceding page



Over a quarter of a million in twenty years

If your hardware man hasn't one of these books send his name along. You will be able to work along better with one of these books at each end of the phone.



If you would like to have the answer to all garage hardware questions right in your desk ~ get this book

On pages four and five you will find the Pictorial Index, the Numerical Index and the Alphabetical Index. You find what you want quickly and surely.

Then come the two main sections of the book. The first section devotes a page to each garage hardware set—interior views, exterior views, plan views—illustrations of each part, all dimensions, including headroom and complete information about application and results.

The second section contains giant illustrations of each part, together with detailed descriptions.

* * * *

The thoroughness of the book is indicative of the thoroughness of McKinney manufacture. The great call for McKinney garage hardware is not only due to fine design but because each piece is the result of careful workmanship.

The coupon will bring the book.

McKINNEY

Garage Hardware

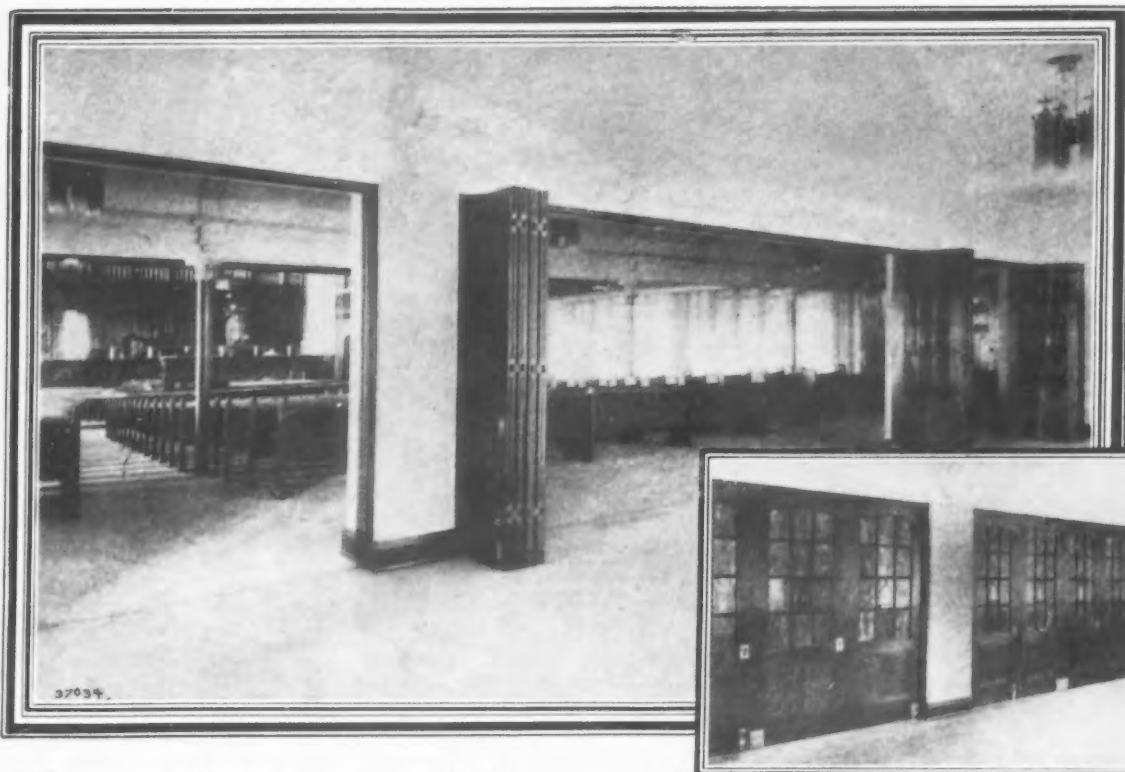
McKINNEY MFG. COMPANY, PITTSBURGH, PENNA.

McKINNEY MFG. Co.
Pittsburgh, Pa.

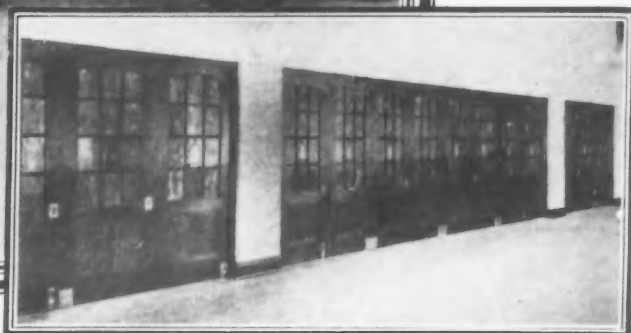
Please send the Book on Garage Hardware to

Name.....

Address.....



"Quality leaves
its imprint"



Looking Ahead on Space Requirements

R-W Standard of Craftsmanship

R-W Folding Partition Door Hardware, making possible valuable space economy, is one item only of the R-W comprehensive line. Materials, workmanship, service are all factors in a national acceptance of R-W products as the standard of comparison. R-W barn, house, elevator, garage and industrial door hangers serve their specific purposes just as efficiently as Folding Partition Door Hardware. Let the R-W Engineering Department assist you. This service is gladly rendered at no cost or obligation.

By the use of R-W Folding Partition Door Hardware, floor space can be made to serve the utmost in convenience. On occasion, with ease and speed, partitioned-off rooms can be thrown into one for assembly, banquet or other needs where unobstructed and large space is required. Doors hung on R-W Partition Door Hardware slide and fold in pairs, out of the way. No sagging, sticking or rattling. Hotels, churches, schools and other public buildings are made doubly useful. Write for full particulars. Economize on valuable space.

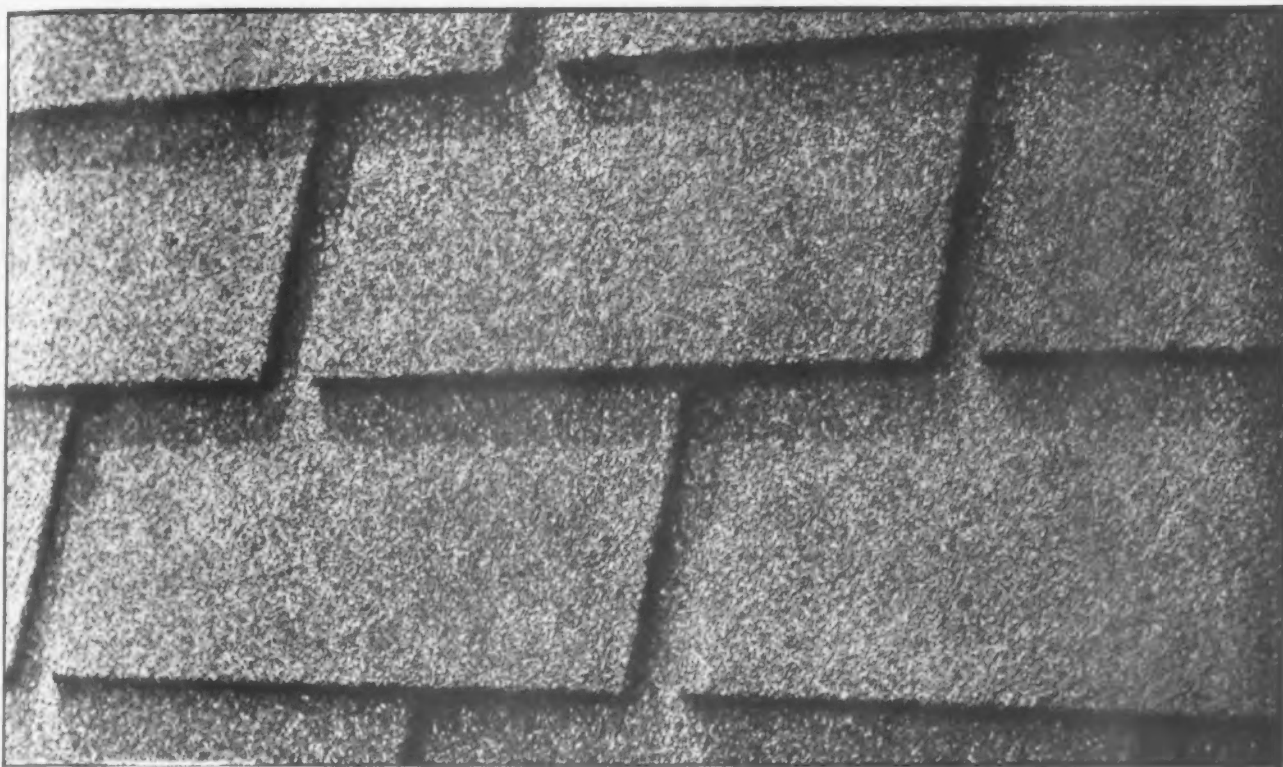
Richards-Wilcox Mfg. Co.

"A Hanger for any Door that Slides."

AURORA, ILLINOIS, U.S.A.

New York Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans
Chicago Minneapolis Kansas City Los Angeles San Francisco Omaha Seattle Detroit
Montreal • RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. • Winnipeg

(851)



Winthrop shadow lines give real beauty to a roof

In this picture of an actual roof you can see that the shadow lines of an old wood shingle roof are really cast by the thick butts of Winthrops. But don't judge by picture alone. Consider what your roof will be ten years from now. The records of Winthrops through year after year of wear and weather show that in these exclusive shingles beauty is permanent. The shadow lines cast by their thick butts do not disappear.

Winthrop **Tapered Asphalt Shingles**

The Taper of the Winthrop is the strongest quality feature ever put into a slate-surfaced asphalt shingle.

The thick butts are built up of extra coats of everlasting asphalt on both sides of the heavy felt core.

This taper provides the greatest thickness where exposure to weather comes. It casts the shadow lines that made the old time wooden shingles popular.

The thick butts of Winthrops lie close and snug, proof against rain and wind and snow. They do not curl, crack, rot, split nor rust.

Non-fading crushed slate anchored into the everlasting asphalt gives to Winthrops their beautiful and lasting surfaces.

Laid over old shingle roofs, Winthrops have no equal as a re-roofing shingle. Remember this when you figure on your fall re-roofing jobs.

We want you to see the quality and beauty of Winthrops for yourself. We want to send you, free, an actual full-size Winthrop. Will you send your name and address? Let us hear from you now.

Beckman-Dawson Roofing Company

832 F. C. Austin Bldg., 111 W. Jackson Blvd., Chicago, Ill.

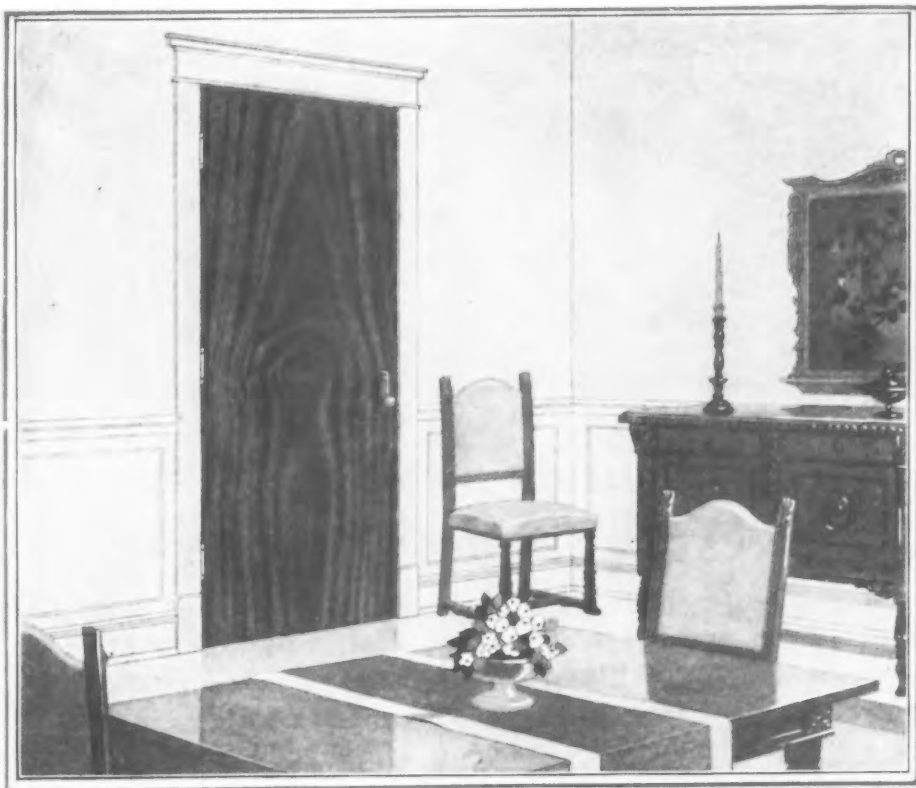
Also manufactured by

Lockport Paper Co., Lockport, New York

RODDIS

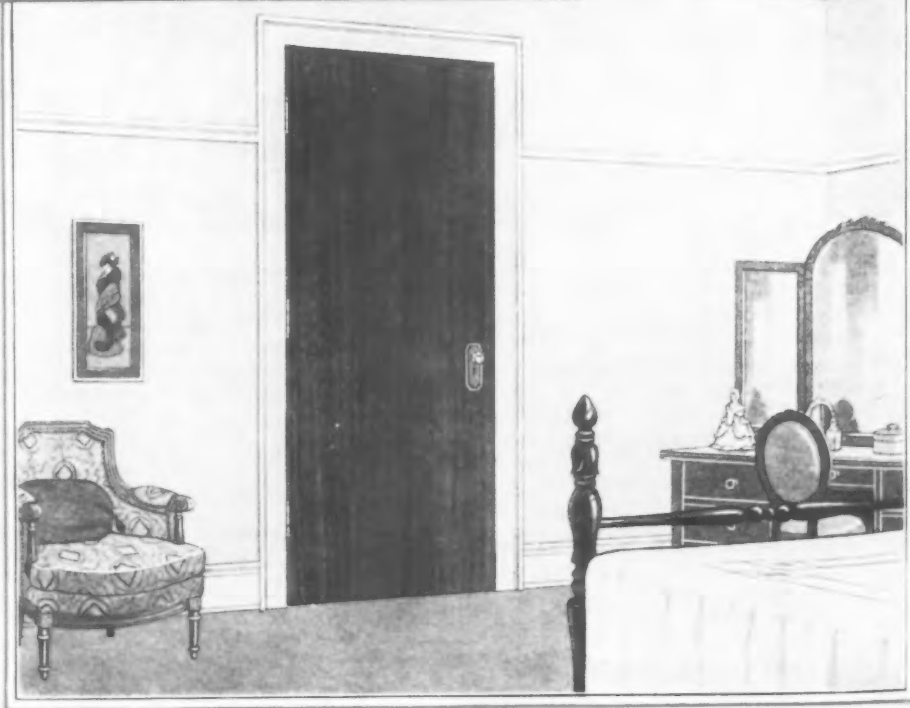
"Fourteen-Seventy-Five"

FLUSH DOORS



These views illustrate the richly attractive rooms obtainable at small cost by using inexpensive trim enameled white or ivory with the mahogany doors standing out in beautiful contrast. Notice how the door harmonizes with the fine woodwork in the furniture, being finished the same tone.

Modern homes avoid the dull monotony of woodwork and doors of the same wood and finish. By having mahogany doors, and trim of light pleasing color, the room is made brighter and far more decorative; yet at no more cost. Endless beautiful effects can be obtained to fit individual needs. Every home should have the benefit of these modern doors.



Beautiful Buildings Deserve these Beautiful Doors—

- of Real African Mahogany
- in all Standard Sizes
- of Famous Roddis Construction
- shipped Instantly from Stock
- that you can sell

for **\$14.75**
each

and Guaranteed Forever!

HERE are more beautiful and economical interiors for all buildings. Use inexpensive wood for the trim; enamel or paint it. Then put in Roddis "Fourteen-Seventy-Five" Flush Doors, of genuine African mahogany, stained in the desired shade. You have beauty no old-style door can equal. And at low cost.

The best hotels, apartments, schools, hospitals and other prominent buildings have Flush Doors. Your buildings deserve them; you now can obtain as many or as few as you need—direct from stock.

Never will these modern Doors sag, warp, shrink, swell, separate nor check. They give you most lasting door-value per dollar.

Learn how these Doors are made and why they can be guaranteed forever. Learn how you can use them to your profit. The coupon will tell you how you gain and save. Get it in the mails immediately.

BUILDING MATERIAL DEALERS should write at once for details of this new sales plan. Builders and contractors look to you to furnish these Doors. Prepare to handle this business. Write today.

Roddis Lumber & Veneer Co., Marshfield, Wis.

For a Quarter-Century, the World's Largest Makers of Flush and French Doors

Mail This Coupon NOW!

Put this coupon in the mail immediately. It will bring to you full facts about this wonder Door and how you can sell it. It points the way to new profits and better buildings. Fill in your name and address — and mail the coupon now.

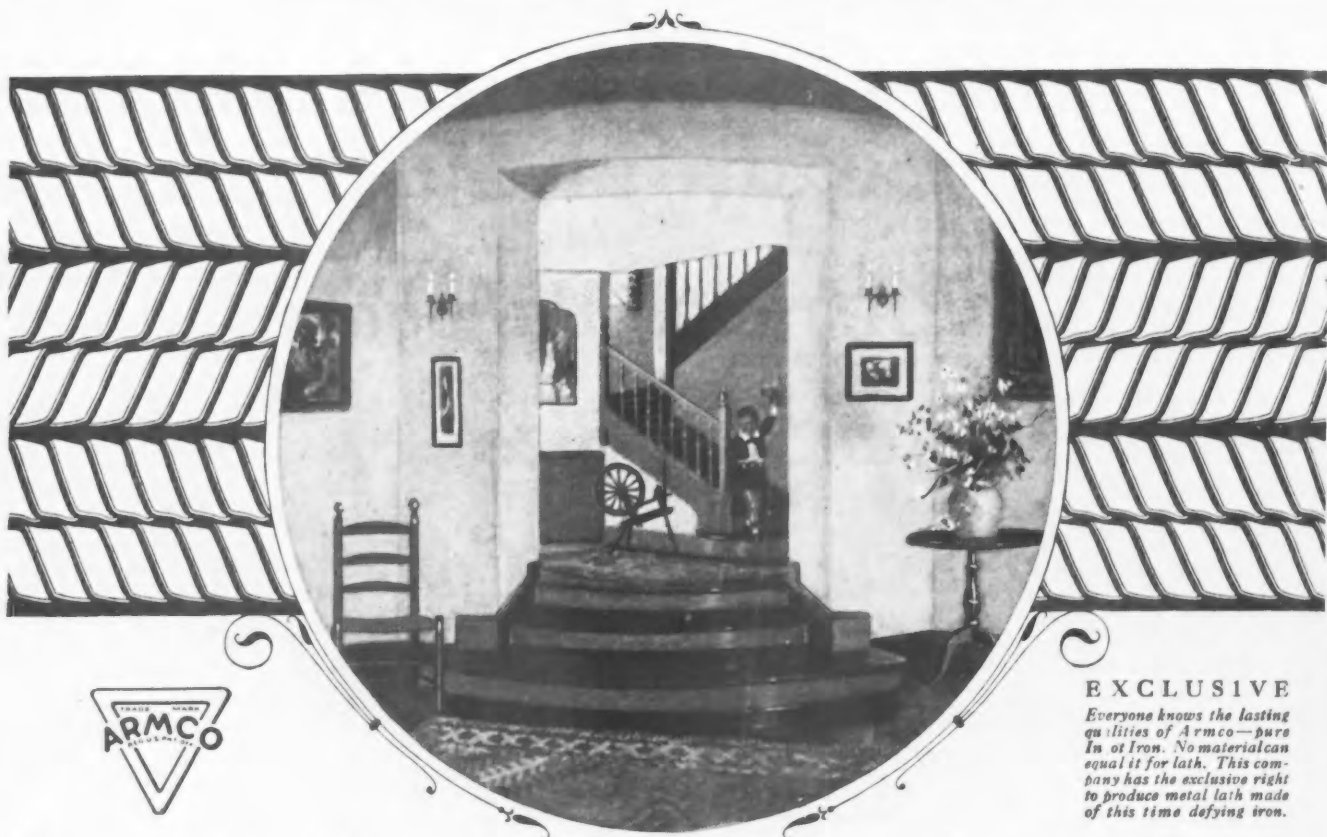
Check which:
☐ ARCHITECT ☐ CONTRACTOR
☐ BUILDER ☐ SUPPLY DEALER

Name _____

Company Name _____

City _____

State _____

**EXCLUSIVE**

Everyone knows the lasting qualities of Armco—pure iron. No material can equal it for lath. This company has the exclusive right to produce metal lath made of this time defying iron.

Herringbone walls and ceilings resist the ravages of time

Other GF Materials:

Self-Sentering—A combined form, lath and reinforcement for concrete floors and roofs.

Trussit—A reinforcement for solid partitions.

GF Expanded Metal—A concrete reinforcement.

GF Steel Tile—For concrete floors.

GF Steel Lumber—Used in place of wood joists and studs.

GF Steel Channels—For fireproof partitions and ceilings.

GF Peds—Spot grounds for attaching trim to concrete and plaster.

GF Duplex Steel Bridging—For wood joist floors.

GF Waterproofings—For concrete and masonry.

IT doesn't take long for the average wall to lose its first fresh charm. A year or two—a little settling of the house—and ugly disfiguring cracks appear—lath marks that streak the ceilings or cracks that mar the symmetry of the walls and ruin the decorative effects.

That's why you find the specifications of so many modern homes, from the most modest to the most pretentious, calling for Herringbone Metal Lath. Architects, builders and owners realize the true economy and the fire protection that Herringbone construction gives.

Herringbone is not expensive either. Its first cost now is only slightly more than ordinary wood lath. And architects as well as builders say its fine mesh saves plaster, and that its large, stiff, easily handled sheets of steel or Armco Ingot Iron reduce labor costs materially.

Every architect and builder should have on file a copy of "Building for Permanence and Beauty" and of the GF "Herringbone Handbook." Both books will gladly be sent, on request.

THE GENERAL FIREPROOFING BUILDING PRODUCTS
Youngstown, Ohio

Branches: New York • Chicago • Philadelphia • Boston • Cleveland • Los Angeles • St. Louis
Omaha • Kansas City • Minneapolis • Milwaukee • San Francisco • Syracuse • Atlanta • Mexico City
Export Dept.: 438 Broadway, New York City • Dealers everywhere • Cable Address: "Genfire-New York"

Member National
Council for Better
Plastering



Herringbone Doublemesh Lath



Contractors—here is Beauty that Lasts a Lifetime

Beautiful columns on a building are the first feature to catch the eye and the one longest remembered. How important then that they should be made of enduring material that will not split, rot and open up at the joints and thus mar the entire structure.

The beauty of Union Metal Columns is more than skin deep. Under the paint is a permanent metal shaft, die-made from copper bearing steel that will be just as sound and beautiful in ten, twenty, yes, thirty years, as it was the day the columns were put in place.

Heights 5' to 42'. Diameter 8" to 42".



This handsome and valuable book No. 50 on "Colonial Entrances" free to every contractor.

Send today for your copy.

THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

UNION METAL COLUMNS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Design 240 Union Metal Columns on a suburban residence at Drexel Hill, Pennsylvania. Thousands of this design have been sold to contractors for remodeling and replacement purposes.



ARISTOCRACY

THERE is an Aristocracy of **worth**—of solid, tangible values—far more significant than the hollow aristocracy of wealth or of antecedents.

Of such an Aristocracy is Knickerbocker.

With honest merit built into every pound, Knickerbocker machines are Aristocrats in the very best sense of the term.

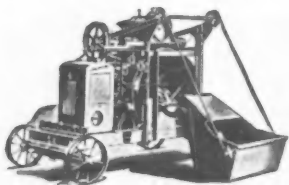
The successful contractor—the contractor who knows that that the best is always the most economical—speaks of his Knickerbocker (concrete mixer, mortar mixer or saw rig) with the same confident pride with which he refers to his Cadillac or his Stetson.

If you would appreciate the Aristocracy of Machinery, watch a piece of Knickerbocker Equipment at work—whether it be five months old or five years old.

If you need construction machinery of the type we manufacture, write for our catalog.

The Knickerbocker Company, 525 Liberty St., Jackson, Michigan

MANUFACTURERS OF



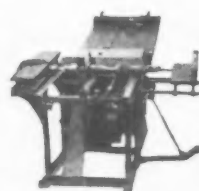
CONCRETE MIXERS

Built in capacities of 5, 7, 10, 14, 21 and 28 cu. ft. mixed material batch, with batch, low-loading or power hopper.



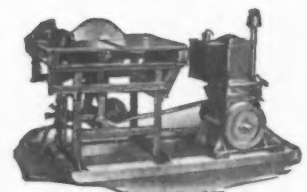
MORTAR MIXERS

Built in three sizes, one to serve 75 masons or 35 plasterers—smaller sizes to serve 30 masons or 15 plasterers.



WOODWORKER

Cuts the cost of finishing mill work—pays for itself on one job.



SWING CUT-OFF AND RIPPING MACHINE

A heavier machine for handling larger timbers—a cost-cutter in fabricating form-work.



This charming small house (A. B. LeBoutillier, Architect) shows the beautiful effect of a blended red roof in Cabot's Stained Shingles, Wall Shingles in Old Virginia White and Trimmings in Double White.

Cabot's Genuine Creosote Stained Shingles

The Highest Grade Shingles Ready-Stained with the Highest Grade Stains

The Highest Grade Shingles: Red Cedar shingles made from selected lumber of the great cedar forests of the far Northwest, and according to the strictest specifications of the Shingle Associations—straight grain, uniform thickness, non-warping, perfect-fitting, durable, heat-insulating. The most picturesque and valuable exterior finish in the world and the most economical.

The Highest Grade Stains: For over forty years the rich and artistic colors and the lasting qualities of Cabot's Creosote Shingle Stains have been the standards of shingle-stain excellence. No one even claims to make better stains than Cabot's.

Genuine Wood-Preserving Creosote: Cabot's Stains are made of Cabot's genuine refined Creosote, which thoroughly preserves the wood. "Creosote is the best wood preservative known."

You don't have to accept Poor Shingles or Poor Stains. Cabot's Qualities are guaranteed—and they cost no more.

Send for Stained Cedar Samples showing wood and colors, catalog, and full information. Free.

Cabot's Old Virginia White

The original brilliant white stain. As bright as new whitewash and as lasting as paint.

Cabot's Double-White

Whiter than white lead paint. Two coats cover equal to three of lead and oil. A true flat white for all kinds of work, exterior and interior.

Samuel Cabot, Inc., Manfg. Chemists

135 Milk St., Boston, Mass.

342 Madison Ave., New York
5000 Bloomingdale Ave., Chicago

----- Cut out here -----

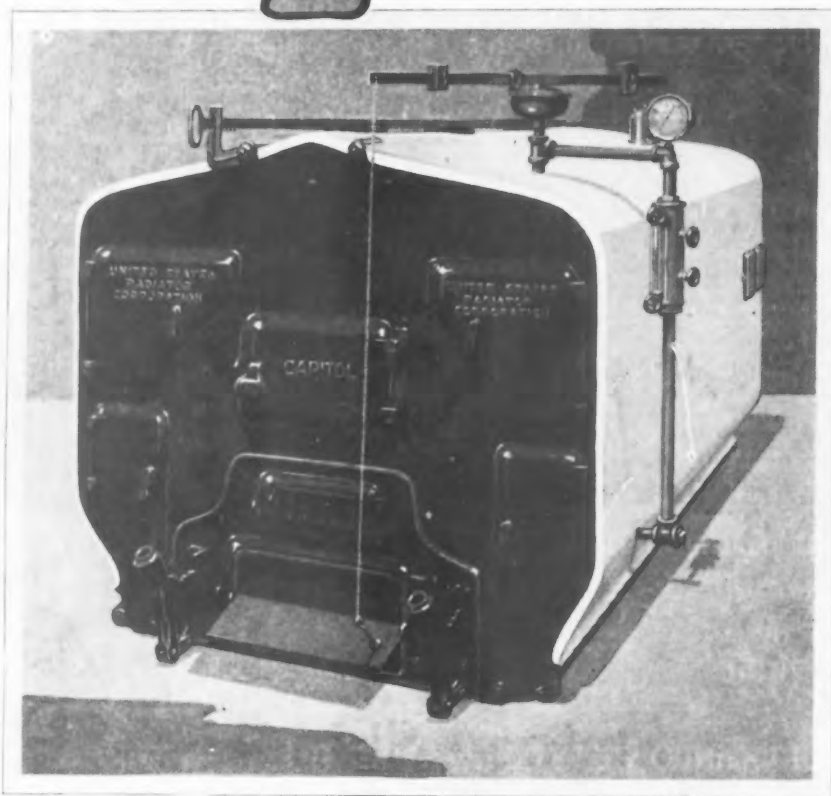
Please send Stained samples and catalog as above.

Name.....

Street.....

Town and State.....

Capitol



It is generally recognized by heating specialists that Capitol Smokeless Boilers represent the highest standard of efficiency in the world.

No matter how severe the local smoke ordinance may be, a Capitol Smokeless will operate well within its requirements.

You can accept this statement as one of the established *facts* of the heating industry. Countless tests and experiments afford positive confirmation.

A Capitol specification, therefore, is always a safe specification. You can depend upon that.

UNITED STATES RADIATOR CORPORATION

General Offices, Detroit, Michigan

Boilers

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

THE MERITS OF Diamond Metal Weather Strips ARE RECOGNIZED ALL OVER THE WORLD

HERE ARE TWO EXTREMES — One in an intensely cold country one in an intensely hot one. Diamond Weather Strips are efficiently performing the functions for which they are intended—one to keep out the extreme cold—the other the extreme heat and storm.



FIRST NATIONAL BANK
Fairbanks, Alaska

SKEPTICS—READ THIS

The Diamond Metal Weather Strip Co.
Columbus, Ohio

Gentlemen:—

As requested in your letter of the 18th ultimo, we are sending you under separate cover a photograph of our bank premises.

The doors and windows of the building are all fitted with the weather strip which you shipped to Mr. Williamson last summer, and I am very glad to say that they are giving us excellent satisfaction. The thermometer in Fairbanks sometimes drops down as low as 65 and 70 below, and we have had great difficulty in keeping our offices and banking room warm on account of the cold coming in through the windows, and the extreme heat on the inside and the cold on the outside has a tendency to shrink and warp the woodwork, particularly around the windows and doors, but your weather strip has corrected this and, no matter how cold it gets, we are now very comfortable.

Yours very truly,

Signed—R. C. WOOD, Mgr.

1st National Bank

Fairbanks, Alaska

Jan. 7, 1925



RES. MARTIN DE GARTEIZ
Bilbao, Spain

What Better Proof Do You Want!

WE WANT AGENTS TO REPRESENT US IN TERRITORY NOT ALREADY ASSIGNED.

OUR PROPOSITION IS CLEAN, FAIR AND REASONABLE.

A PERMANENT AND PROFITABLE BUSINESS OF LARGE VOLUME
CAN BE ESTABLISHED WITH OUR COMPLETE LINE.

GET OUR TRY-OUT PROPOSITION—EXCLUSIVE
TERRITORY AND ABSOLUTE PROTECTION TO THOSE WHO MAKE GOOD.

WRITE US TO-DAY

The Diamond Metal Weather Strip Company COLUMBUS, OHIO, U. S. A.

TEAR OFF, FILL OUT AND SEND IN AT ONCE—NOW

THE DIAMOND METAL WEATHER STRIP CO., Columbus, Ohio

Send full information in regards to your product. Am interested

In ☐ HAVING A BUILDING EQUIPPED

☐ SECURING AN AGENCY

☐ AS A TERRITORIAL DISTRIBUTOR

☐ ADDRESS OF LOCAL OR NEAREST AGENCY

Name.....

Street Address.....

City.....State.....

Lowest priced tilting mixers! per mixing capacity



No. 3½ Kwik-Mix with Side Loader



No. 5L Kwik-Mix is equal to any one-bag mixing job

Contractors who consider capacity and price—here's a real buy.

For performance, capacity and price the Kwik-Mix Mixers are unequalled today.

Kwik-Mix 3½ Trailer on steel wheels. **\$190.00**

Kwik-Mix 3½ Loader on steel wheels. **\$330.00**

Kwik-Mix 5 Loader (one-bag size) on steel wheels. **\$475.00**

Prices net cash f. o. b. factory.

Slight additional charge for rubber tired wheels.

Kwik-Mix Mixers will turn out more yardage than other makes—A comparison on the job proves it.

All the features found in other mixers are incorporated in Kwik-Mix with additional features which insure quick and better mixing.

The Kwik-Mix Bag Mixer is the only tilter machine that gives a thoroughly mixed, even mixture at discharge. This is due to the special patented blades which force stones back and discharges even.

Other mixers discharge large stones first.

The Kwik-Mix bag drum runs on Hyatt roller bearings which are guaranteed for life of mixer.

Perfectly balanced—semi automatic discharge and other features have made the Kwik-Mix the fastest selling line of mixers on the market.

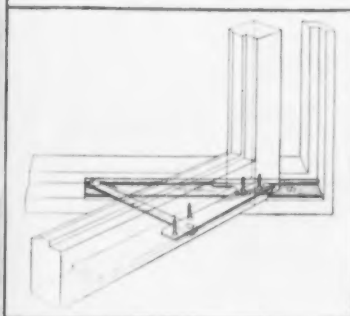
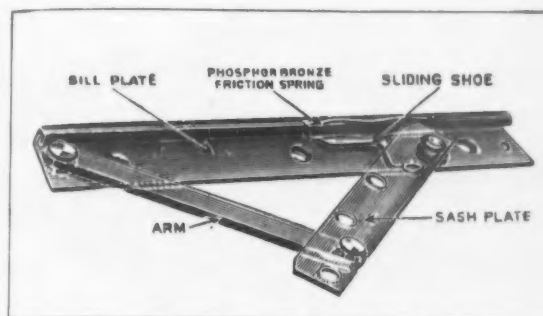
For the contractor who wants to speed up his job, the Kwik-Mix solves his problem.

Write for special bulletins.

The Kwik-Mix Concrete Mixer Co
Port Washington, Wis.

KWIK-MIX

CONCRETE MIXER



In solid brass,
per set - - \$2.25
In rust-proofed steel,
per set - - 1.75

WHITCO—

Casement and Transom Hardware is all right

The fact that several hundred thousand sets have been sold in less than two years—without a single, solitary criticism or complaint as to their installation, operation or service—not only establishes a record of satisfaction seldom, if ever, equalled, but should commend it to every architect and every builder in the country in a way that hardly can be denied.

But, there is one thing about WHITCO we are not sure of—one link in the chain of its advantages we want to weld a little more securely:

We want to be sure you can see WHITCO and have it demonstrated to you whenever you may want to procure it for any job you are interested in.

Right now, WHITCO is being distributed by a majority of the representative jobbing concerns, located in practically every important center.

These organizations are carrying stocks of WHITCO, calling on the dealers and opening up new retail outlets just as rapidly as possible.

But we have no means of knowing whether our distributing system has covered your city as yet, and whether it has established the kind of a dealer connection you would like to do business with.

Won't you help us make sure by giving us the information we need?

Please do not look upon this request as just another scheme of securing an inquiry to trade upon. It is not that at all. It is just a simple, straightforward attempt on our part to put ourselves in position best to serve you. We will appreciate your co-operation. The coupon makes this convenient.

VINCENT WHITNEY Co., 636-645 Massachusetts Trust Bldg., Boston.

Our favorite sources of supply for builders' hardware in.....
are

Firm Name

Street and Number

City

State



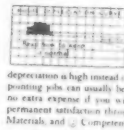


You dream of achievement when you build
Some facts and figures to help you



Building is one of the great joys of your life. It should give you the pride of achievement. It should give you lasting satisfaction which comes with accomplishment. You should enjoy what you build and never have your satisfaction marred by heavy, unnecessary repair bills. Yet many people seem always to be paying out money for repairs, and home ownership brings disappointment rather than satisfaction. When you build, you need never look back

with regret to what might have been. Our simple rule will avoid this—a principle which the Lehigh Portland Cement Company suggests as sure protection against all dangers to your pride as a builder. Seek permanent satisfaction, secure it. Dependable Materials and Competent Workmanship. The same down to satisfaction is the unusual payment of repair bills that were never anticipated—\$500 to keep water out of the cellar or 250 to replace a copper walk that has been



Strength like this keeps repair expense low

Most materials grow weaker each year, others hold their strength for a limited time, but good concrete made with Lehigh Cement actually grows stronger year by year. That is one reason for the amazing record of concrete road development throughout the country. The highway network below replaced a road on which many thousands of tax payers' money were spent for repairs. The new road costs little for maintenance. Instead of wearing out, it actually grows stronger year after year and will not reach its full strength for years to come.

Put strength like that into everything you build and every construction project you are interested in. Help your community get permanent satisfaction in public improvements. Insist on: 1) Dependable Materials 2) Competent Workmanship—not any, but both.

This type of garage repays all it costs

A garage on your own property not only adds to your convenience, but it saves rent, a fact which quickly wipes out the first cost. A popular type of garage built with concrete blocks or tile, frequently covered with stucco. This

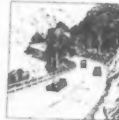
construction reduces fire hazard, eliminates costly paint and repair bills, and is built rapidly. Many other improvements, economically made, turn discontent into satisfaction and add surprisingly to resale value. The list at the right contains suggestions, such as:



stuccoing, which adds strength and beauty, concrete steps which save paint and repair bills, or concrete driveways which add attractiveness and permanence. When you get money into improvement remember that satisfaction depends on: 1) Dependable Materials 2) Competent Workmanship.

How to get permanent satisfaction, whatever you build

1. GET DEPENDABLE MATERIALS. Remember for thousands of years Lehigh Cement has been making concrete in the world. Low cost, convenience, economy, security and beauty are all built into Lehigh Cement. It is the only material that can be used in any building.

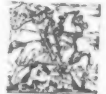


2. GET COMPETENT WORKMANSHIP. Even with the best materials you can get poor results unless you secure competent workmanship. A good contractor will save you money through skilled building economy. He will put quality both where it can be seen at the time and also where it will be needed for its repair expenses in the years to come.

A point to remember is: Lehigh Cement is the cement who makes in dependable materials is likely to have competent help and to put skill and dependability into all he does.

Lehigh Portland Cement Company
Allentown, Pa., Birmingham, Chicago, Spokane
N. Y. City, Buffalo, Kansas City, Milwaukee, St. Louis, Philadelphia
St. Paul, San Francisco, Seattle, St. Petersburg, Tampa, Washington

LEHIGH CEMENT
19 MILLS FROM COAST TO COAST



Make Concrete of LEHIGH CEMENT for permanent satisfaction

Always use clean, dry material. Remember the advice: Builders and owners, the Lehigh Portland Cement Co. has the plan. Concrete is the sure way to build. It is the only material that can be used in any building. It is the only material that can be used in any building.

1. Always use clean, dry material. Remember the advice: Builders and owners, the Lehigh Portland Cement Co. has the plan. Concrete is the sure way to build. It is the only material that can be used in any building.

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20. Always use clean, dry material. Remember the advice: Builders and owners, the Lehigh Portland Cement Co. has the plan. Concrete is the sure way to build. It is the only material that can be used in any building.

The contractor who uses Lehigh— advertised by these two pages in color

This advertisement will be read this month by people in your neighborhood. It says:

"A good contractor will save you money through skilful building economies. He will put quality both where it can be seen at the start and also where it will be noticed for its low repair expenses in the years to come."

"A point to remember in choosing a contractor:

"The contractor who insists on dependable materials is likely to hire competent help and to put skill and dependability into all that he does."

Tie up with this message. It will let the people of your community know that they can count on you for permanent satisfaction whatever they build. And don't forget: Lehigh advertising reaches about seven and one-half million people through the Saturday Evening Post, Literary Digest, House and Garden, Successful Farming, Farm Journal and other leading publications.

The Lehigh plan includes a number of measures you can adopt locally to put this idea to work for you. Write us for details, or ask to have a salesman call.

LEHIGH PORTLAND CEMENT COMPANY

ALLENTOWN, PA.
BIRMINGHAM, ALA.

LEHIGH CEMENT

CHICAGO, ILL.
SPOKANE, WASH.

19 MILLS FROM COAST TO COAST

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

...yet we have improved it

For all practical purposes, Sheetrock could have gone on forever just as it was. Yet we have improved it.

MADE IT EASIER TO HANDLE. Reduced its weight. Thereby lowered the low cost of making walls and ceilings with Sheetrock.

GIVEN IT EXTRA STRENGTH. Now Sheetrock provides a much more rigid wall, solid, tight-jointed, bracing to frame construction.

MADE IT MORE INSULATING. A new manufacturing process builds up a gypsum core of minute air cells, the strongest structural resistance to heat and cold, insuring more comfort in summer, more economical heat in winter.

AND A SPECIAL SURFACE SIZING gives this improved Sheetrock greater adaptability to any decoration: wallpaper, paint, panels, *Textone*, the U S G finish for toned and textured walls.

FIREPROOF, RIGID, NON-WARPING, this improved Sheetrock assures your customers the full advantages of *security, economy, permanence*.

We are not announcing a new wallboard. We are announcing improved Sheetrock, the fireproof wallboard for new construction, alterations and repairs. Your dealer in lumber or building supplies has it in stock for you, or can get it promptly from our nearest mill. Write for a sample of improved Sheetrock.

UNITED STATES GYPSUM COMPANY
General Offices: Dept. 1, 205 W. Monroe Street, Chicago, Ill.

Reg. U. S. Pat. Off.

SHEETROCK

The FIREPROOF WALLBOARD

Sheetrock is inspected and approved as an effective barrier to fire by the Underwriters' Laboratories, Inc.



Clip and mail this coupon today!

UNITED STATES GYPSUM COMPANY, General Offices: Department 1, 205 W. Monroe St., Chicago, Ill.

Please send me the sample of improved Sheetrock and copy of your Time Book for builders.

Name.....

Address.....

Sheetrock comes in standard sizes: $\frac{1}{2}$ inch thick, 32 or 48 inches wide and 6 to 10 feet long

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

HESS *Welded Steel* FURNACE

The Hess Welded Steel Furnace eliminates the defects of the old style Cast iron "Pot" furnace.

Firebox, combustion chamber and ashpit are entirely inclosed in a huge steel radiator, in which every seam is sealed by riveting and then fusing the steel so it becomes one continuous piece. We guarantee these seams never to leak as long as the furnace shall stand.

The area of this steel radiating surface is very large—evenly heated and radiates heat much faster than cast iron. A newspaper burned in it creates perceptible heat in the pipes.

All inner parts are placed through the fire door, without disturbing any part of the furnace or pipes, the cost of repairing therefore is trifling.

The grate area is large—locomotive style,—and combustion, even with cheapest fuel, is perfect. Ideal for oil; the firebrick lining maintains the intense heat necessary for good combustion, and the welded seams and airtight construction prevent escape of odors.

Ample humidity is supplied by a water pan placed high, where the water heats and evaporates rapidly.

Any handy man can install it. We will loan you tools and give you full illustrated instructions. We make all pipes and fittings to fit your house, to your measurement.

Send us a sketch and let us show you how your local dealer, or you yourself can install the outfit and secure perfect success, guaranteed by us. Our *plan service* is free, no charge nor obligation.

SOLD ON EASY PAYMENTS TO RESPONSIBLE BUYERS. SPECIAL RATES TO CONTRACTORS.

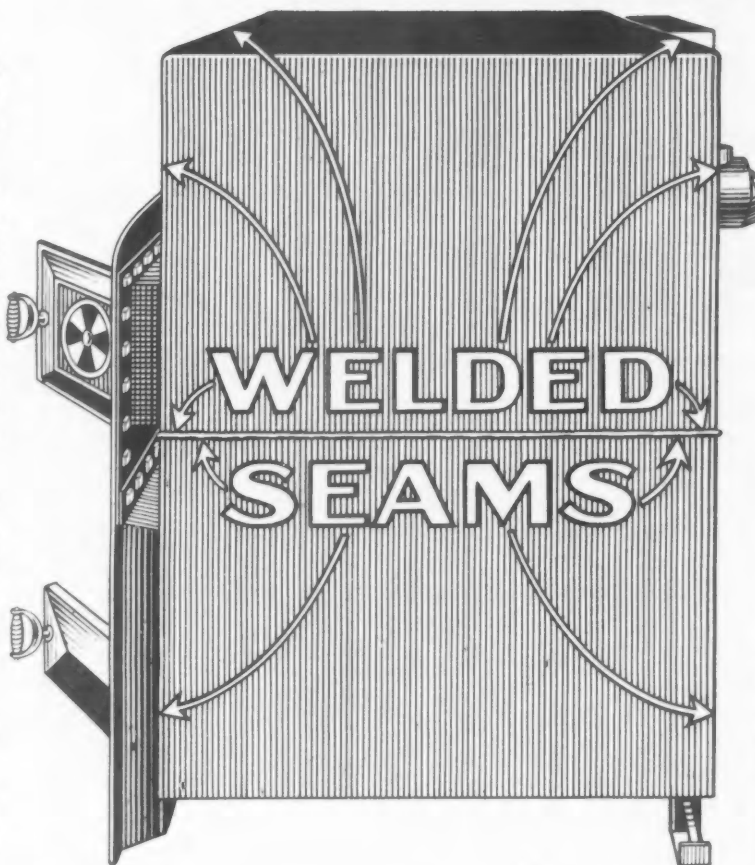
Ask for our illustrated book on furnace heating. It will interest you.

HESS WARMING & VENTILATING COMPANY

1220-L South Western Avenue - Chicago

BRANCHES AT: BROOKLYN
MILWAUKEE

DETROIT • CINCINNATI
MINNEAPOLIS



The Entire Building Field Is YOUR Market

When you become a
manufacturer of

DUNTILE

The Perfected All-Purpose
Concrete Building Unit

IF you are in position to consider a proposition that will give you an independent manufacturing business of your own, the photographs on this page tell a story of tremendous importance. For they show that DUNTILE today is being chosen as the logical material for EVERY type of building.

Where PERMANENCE and ECONOMY Meet

The truly amazing thing about DUNTILE is that it reduces the cost of finest permanent construction to the level of frame. Think what it may mean to you to be able to offer every builder in your locality a unit that combines light weight with great strength—that affords excellent fire resistance and super-insulation—that is damp proof—that is made in a number of standard sizes for complete construction from foundation to roof—that sets a new standard of building excellence and at the same time brings costs down to rock bottom.

Proof of YOUR Opportunity

More than 250 successful DUNTILE plants throughout the country have completely demonstrated the great possibilities open in every live community. The facts and figures brought out through these splendid successes have been condensed into a concise volume that answers every question as to how YOU too may reap big immediate profits and build a steadily growing business by establishing a Standardized DUNTILE Plant of your own. The coupon below will bring you this valuable book; mail it NOW!

W.E. DUNN MFG. CO.

415 W. 23rd Street
HOLLAND, MICHIGAN

W. E. DUNN MFG. CO.,
415 W. 23rd Street
HOLLAND, MICHIGAN

Show me how a moderate investment will enable me to manufacture DUNTILE at a profit of 30 to 60% and still compete successfully with other materials.

Name.....
St. Address.....
City.....
State.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

BASIC
FACTS

 THE QUALITY IS IN THE LIMESTONE





The above is an actual, unretouched photograph, taken immediately after a blast, which shows the solid, clean character of the rock in our quarry; as very little crumbling resulted from the shot. A depth of sixty feet has been attained in our quarry, and the surrounding walls present an unbroken cliff of clean, solid rock unmarred by dirt or unworkable seams.

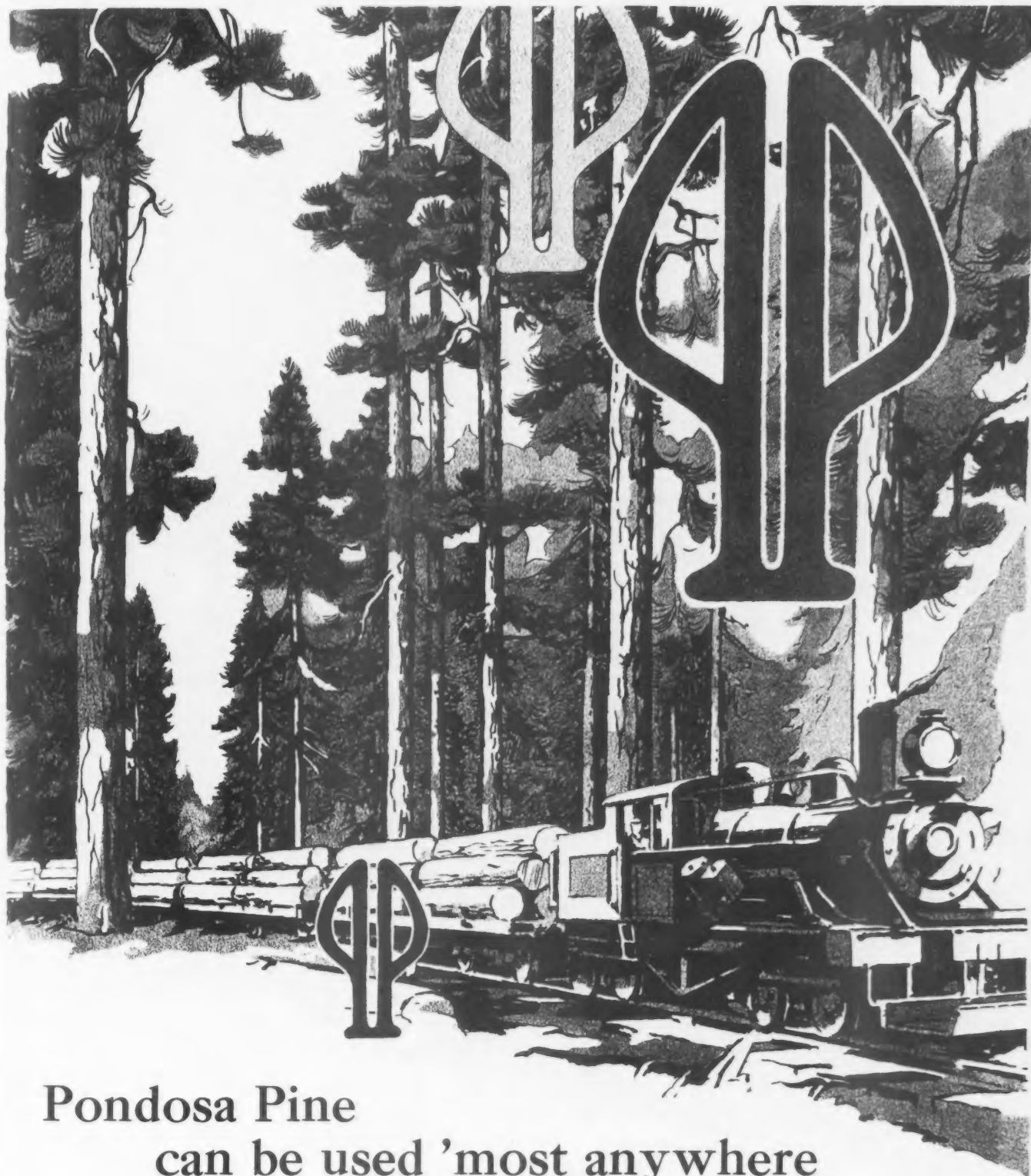


Limestone, like ore, coal and other products of nature, varies greatly in quality and composition. Our quarry is a natural deposit of limestone, the equal of which has never been found for the production of lime that leaves nothing to be desired in purity, whiteness, easy working qualities, spreadability and exceptional strength. Naturally, a lime made from this remarkable limestone produces a finish and an all around building lime that is specified and used wherever results of the highest character are demanded. There is a building supply dealer in your territory who handles one of our brands.

THE WOODVILLE LIME PRODUCTS CO.
Toledo, Ohio

White Enamel  **White Lily**
Finishing  **Medal**
Hydrated Lime

IT'S QUALITY FROM STONE TO FINISH



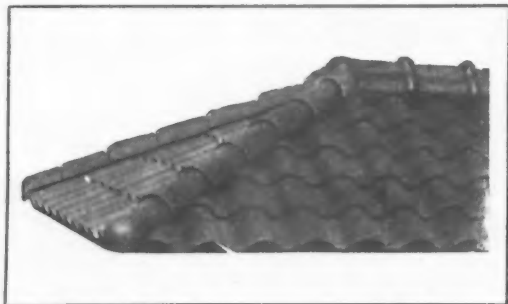
Pondosa Pine can be used 'most anywhere

Stairs, sash, moulding, sheathing, siding, *any* place where the specifications call for good, dependable lumber which is light, yet strong—that's the place for Pondosa Pine. Sovereign of softwoods, they call it—this wonder-wood from the Inland Empire of the Great Northwest. Every trade-marked stick is rigidly *graded*, thoroughly *seasoned* and carefully *milled*. For sale at all good lumber yards. Write for the Pondosa story. Address Dept. 22, Western Pine Manufacturers Association of Portland, Oregon.

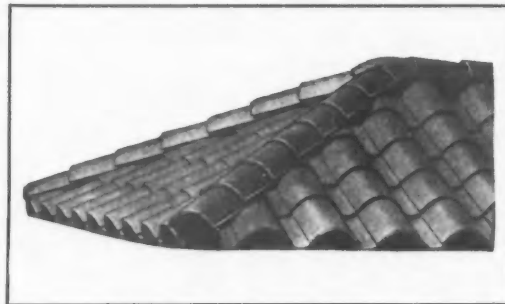
Pondosa Pine
The Pick o' the Pines



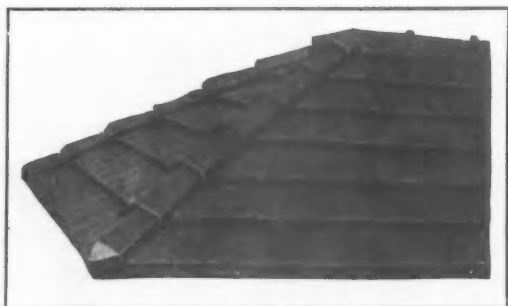
Write for
this booklet

*IMPERIAL Spanish Tiles*

Especially adaptable to those types of architecture in which romantic and picturesque effects are sought. Available in various shades.

*IMPERIAL Straight Barrel Mission Tiles*

Obtainable in an almost unlimited range of colors, this tile is recommended when a rough and polychromatic effect is desired.

*IMPERIAL French Tiles*

This shape is often called an "all-around" tile, as it may be used successfully with almost any design. Available in various shades.

*IMPERIAL Closed Shingle Tiles*

A pattern principally used to carry out the idea of Colonial or Early English architecture. Available in various shades.

Variety in *Shape* as well as Shade

A DISTINCT advantage of IMPERIAL Roofing Tiles over ordinary roofing materials is that they vary in *shape* as well as shade. Thus you can now give real variety to the roofs of the houses you build. No longer need they be monotonously flat, differing only in color.

In addition to the four standard patterns of IMPERIAL Roofing Tiles here illustrated, there is available an almost limitless variety of shapes, shades and textures that lend themselves to distinctive roofing effects.

IMPERIAL Roofing Tiles

LUDOWICI-CELADON COMPANY

104 South Michigan Avenue • Chicago

565 Fifth Avenue • New York



Announcing Two New BESSLER Disappearing Stairways Greatly Improved in Every Way



A big new field of service and profit is opened up to builders and contractors as never before by these improved Besslers. Every feature you can ask for is now included, and at the same time the prices have been greatly reduced.

IMPORTANT NEW FEATURES

All Besslers are now equipped with adjustable screw hinge that brings the panel flush with ceiling, no matter how wide the joists may be. This is exclusive with the Bessler.

Model 97, shown at the left, is more roomy, better made and better looking than ever. It includes many patented and exclusive Bessler features; comes in all sizes from 7 to 16 feet.

**Prices have been so much reduced
as to make Besslers indispensable**

This new Model 50, at the right, is the lowest priced disappearing stairway made. It is six inches narrower than Model 97, and of proportionately lighter construction. It embodies every desirable Bessler feature, and is strong, easy working and durable. Made in 4 sizes, for 8 ft., 8 ft. 6 in., 9 ft. and 9 ft. 6 in. ceilings.

BUILDERS—DEALERS

With the new features and at the new low prices, Besslers are winners of new business for you. You cannot help but be interested in the particulars. Wire or write.

THE BESSLER MOVABLE STAIRWAY CO.

1901 East Market Street

Akron, Ohio





Make Houses Into Homes with the Holland Heating Service

NOBODY buys a furnace just to have a ton of cast iron in the basement, yet that's what a furnace amounts to without proper engineering—heat pipes, radiation and correct chimneys.

So it is no wonder that, by installing with trained men every furnace it manufactures and sells, the Holland Furnace Company has come to be the largest installers of furnaces in the world.

The Holland Furnace, engineered into the home by our own trained engineers and installed by our own men, does turn houses into comfortable, healthful homes.

Holland Heating Service is available to contractors and home builders from 384 Factory Branches. Phone the nearest branch today, or write the home office.

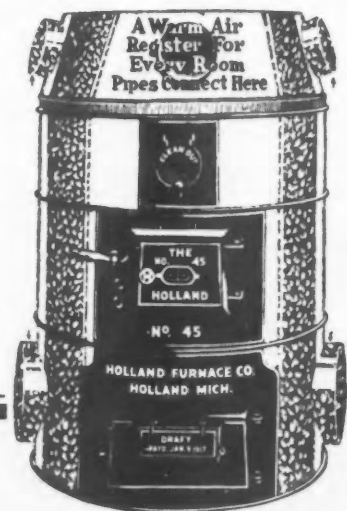
*Illustration shows
Holland No. 45
Complete Pipe System before
pipe connections are made*

HOLLAND FURNACE COMPANY

General Offices:
HOLLAND, MICHIGAN

Two Factories:
Holland, Mich.; and Cedar Rapids, Iowa

Central Chicago Office:
Straus Building, Michigan Ave. and Jackson Blvd., Chicago



The World's Largest Installers Of Furnaces

Holland Furnaces Make Warm Friends

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

When a man selects his contractor

A CLIENT pictures his future home from the picture, blue prints and descriptions of his contractor. These things are tangible, he can see them, check them and approve them.

But what of the hundred and one materials that will be used to make these plans come true?

These the customer leaves to the contractor, and on these materials hangs the success of the house and the reputation of its builder.

These common everyday materials will build a satisfactory house, or they will be responsible for endless troubles such as leaky windows, squeaking floors, insufficient heating, stopped up drain pipes and leaky rust-laden water pipes.

These are the troubles that make Brown say to Smith, "Don't let him build a house for you, we've had nothing but trouble with the one he built for us."

Good contractors realize this importance of using the best materials. It is only the thoughtless contractor that wants to use "just as good" products.

For water piping, Alpha Brass Pipe has certain advantages that place it in a class by itself. It contains more copper, for instance, it bends, cuts, and threads easier, and yet it costs no more.

We will be glad to send you a book which will give you proofs of the advantages of Alpha Brass Pipe.

Why not ask us to?



ALPHA Brass Pipe

contains only Alpha crystals. It is a fine-grain, dense, ductile and tough metal. It makes perfect bends, threads and cuts easily and offers even greater resistance to corrosion than ordinary brass pipe. Full details in our Alpha Brass Book.

CHASE COMPANIES
INCORPORATED
WATERBURY, CONNECTICUT
Chase Metal Works—Chase Rolling Mills
STOCKS

Chase Companies of New Jersey, Newark.
The Ohio Chase Company, Cleveland.
Chase Companies of California, San Francisco,
Los Angeles

OFFICES
Boston New York Philadelphia Rochester
Pittsburgh Chicago St. Louis Denver Atlanta
Members Copper and Brass Research Association

CHASE COMPANIES, INCORPORATED
Waterbury, Conn.

Please send me free of charge a copy of your book on Alpha Brass.

Name _____

Position _____

Firm _____

Address _____

AB-0310-12

Why Keep On Paying This Tax?

Everybody expects to pay some taxes, but why impose unnecessary taxes on yourself?

Do you realize that every time you drive your car on an unpaved highway you are actually taxing yourself one to four cents a mile?

This is the cost of increased repair, tire and gasoline bills. Highway research has definitely established these facts. Each year you tax yourself in this way a good many dollars. Instead of spending this money for increased transportation costs, why not invest it in Concrete Highways and pay yourself some dividends?

Concrete Roads and Streets pay for themselves in the saving they effect on the cost of motoring.

Their maintenance cost is so low that this saving alone returns good dividends on the investment, year after year.

You are imposing an unnecessary tax on yourself from which you get no return, by failing to work for more Concrete Highways.

Not in a long time have general conditions been so favorable for carrying on such public works as permanent highway building.

Your highway authorities are ready to carry on their share of this great public work. But they must have your support.

Tell them you are ready to invest in more Concrete Highways, now.

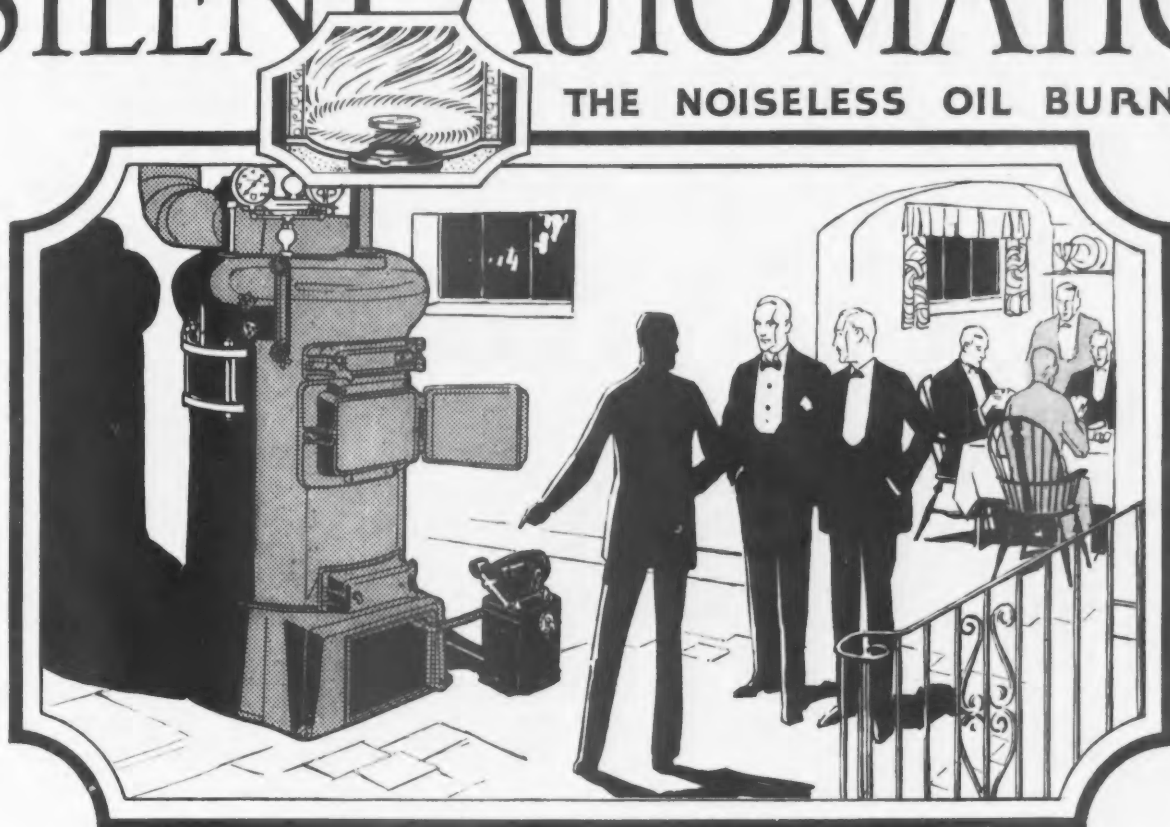
PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Columbus	Indianapolis	Minneapolis	Parkersburg	San Francisco
Birmingham	Dallas	Jacksonville	Nashville	Philadelphia	Seattle
Boston	Denver	Kansas City	New Orleans	Pittsburgh	St. Louis
Charlotte, N.C.	Des Moines	Los Angeles	New York	Portland, Oreg.	Vancouver, B.C.
Chicago	Detroit	Milwaukee	Oklahoma City	Salt Lake City	Washington, D.C.

SILENT AUTOMATIC

THE NOISELESS OIL BURNER



Retail price only \$350⁰⁰

Completely installed, ready to operate

The real point of interest about the Silent Automatic Oil Burner is not its remarkably low price. It is the amazing new method that enables only the Silent Automatic to transform ordinary burner oil into a vapor, and burn it as a silent gaseous flame.

The oil is first atomized, then nebulized, and then it passes through a zone of heat that transforms it into a true combustible gas. This gas is burned *in contact* with the heating surfaces. Every possible unit of heat is used for *heating*, and is not wasted up the flue.

Silent

The Silent Automatic flame is not a projected, roaring flame. It is a radiant but *lazy* flame that clings to the heating surfaces, blanketing them at all times with glowing fire. The flame is silent; the burner itself is noiseless.

Trouble Proof

By eliminating blowers, delicate valves and jets the Silent Automatic has been made as nearly trouble-proof as any mechanical appliance can be. The smallest burner opening through which fuel passes is a full one-fourth inch in diameter. These openings cannot clog or carbonize.

Easily Installed

It requires but a few hours time to install the Silent Automatic. No rebuilding of the furnace is necessary and no special fire-brick lining is used. This applies to installation in *any* boiler or furnace, square or round.

Write for complete information

SILENT AUTOMATIC CORPORATION, 255 Meldrum Avenue, Detroit, Michigan

The ALPHA Dealer of your Community has a lot of helpful information on Cement improvements



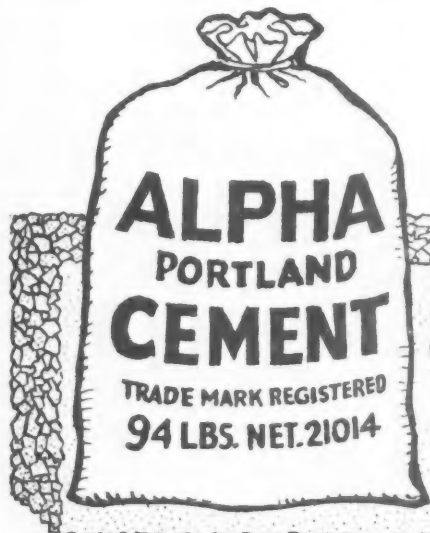
ALPHA CEMENT is produced under the strictest chemical supervision. Every bag of it will give you high-class results.

The ALPHA dealer can give you a free copy of the new and enlarged edition of the 112-page Handbook on Cement Construction, "Alpha Cement—How to Use It." He also has special Bulletins and Service Sheets on scores of home, yard, farm, business-place and civic improvements—fountains, driveways, storage buildings, garages, gate-posts, engine bases, water troughs, house foundations, dams, etc.

You will be delighted with the common-sense value of these helps in dealing with property-owners.

Alpha Portland Cement Company
EASTON, PA. CHICAGO, ILL.

New York Boston Philadelphia Pittsburgh Baltimore
St. Louis Battle Creek, Mich. Ironton, Ohio



See the ALPHA Dealer and get these good Suggestions Free
use ALPHA Cement

california

California White Pine
(trade name)

PINE

California Sugar Pine



Enameled Effects, Beautiful and Lasting, with Fewer Coats

CALIFORNIA Pines are ideal for all kinds of interior finished woodwork. They dress to velvety smoothness of surface. First coats of paint are easily absorbed, forming a lasting foundation for finishing coats. The light color is easy to "hide," thus effecting an economy in cost of enameling.

Permanency of finish is assured because of the smooth surface, and the grain does not "raise" to disfigure or crack the enamel. The delicately beautiful grain of California Pines produces a pleasing "natural" finish, while staining is highly successful because "muddy" effects are entirely absent.

You will find that carpenters like to work with these soft pines because of the ease and rapidity of cutting, and the accurate workmanship possible. The economy of California Pine in-

terior woodwork lies in the lessening of labor for installation and the elimination of wasting material in cutting.

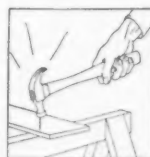
We have just issued for architects and builders a set of California Pine Information Sheets covering all uses of these woods. These data sheets are compiled by a Wood Technologist formerly with the U. S. Government Forest Products Laboratory at Madison, Wisconsin and now connected with this association. He will gladly answer inquiries or supply data for specifications.



Soft, easy-cutting texture and uniform grain of California Pines result in velvety-smooth surfaces under the planer.



Sharpest profiles and most finely graduated uniform curves are obtained. Lines and corners are sharp without splintering.



Soft "corky" texture enables nailing without splitting — even up to the very edge. Nails hold firmly.



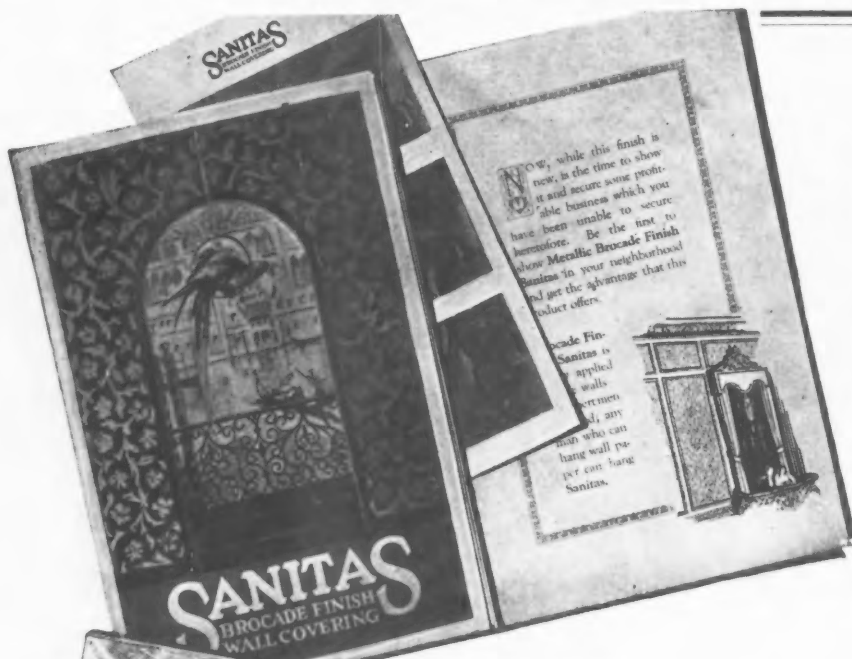
Grain of California Pines will not "raise" to disfigure or cause cracking or chipping of paint or enamel surfaces.

California White and Sugar Pine Manufacturers Association

656 Call Building • San Francisco

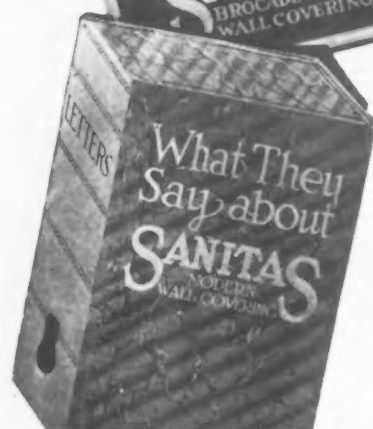
Also producers of

CALIFORNIA WHITE FIR • CALIFORNIA DOUGLAS FIR • CALIFORNIA INCENSE CEDAR



SANITAS MODERN WALL COVERING

How else can
you obtain
wall beauty
that is also
wall strength?



A strongly woven cotton cloth surfaced with several coats of durable oil colors, in either Enamel Finish, plain or patterned, Flat Finish, plain or patterned, or exquisite Brocade and Metallic Finishes—that is Sanitas Modern Wall Covering.

It can be hung on new walls as soon as the plaster is dry, on old walls when the cracks have been properly painted up, or any of the modern plaster-boards. It neither cracks, tears, peels, blisters or fades, and the phenomenal strength of the cloth back is a protection to the plaster, preventing many cracks and greatly restraining the progress of others. That Sanitas comes in styles for every room in the house, all of which can be cleaned merely by wiping occasionally with a damp cloth, are additional points a tenant appreciates. But it is the protective strength of Sanitas that makes it an investment, not an expense, and increases the ease of selling or renting the property.

Styles for every room in the house

Plain and Pastel Flat Finish

tints that can be hung as they come, or stenciled, frescoed or Tiffany blended

Decorative Flat Finish

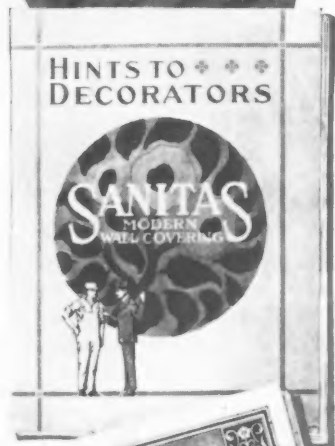
conventional and foliage patterns, stripes, mottles, and tapestry, grass-cloth, leather and fabric effects.

Brocade and Metallic Finishes

in embossed effects for paneled treatments and trimmings.

Enamel Finish

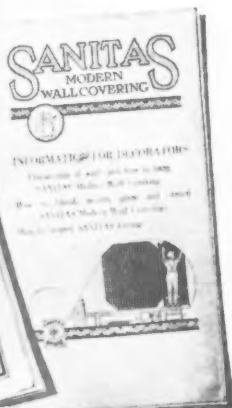
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Dept K.



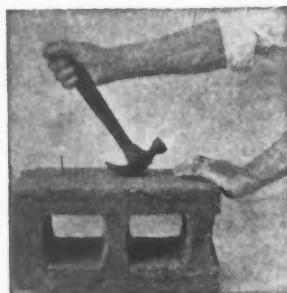
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and the nails hold



Pages 194-5

The Cinder Concrete Corporation has the authority to grant licenses under both the Straub Patent and the Bo Patent. It will promote new plants throughout the United States and Canada for the manufacture of block, brick and tile according to these well-known processes.

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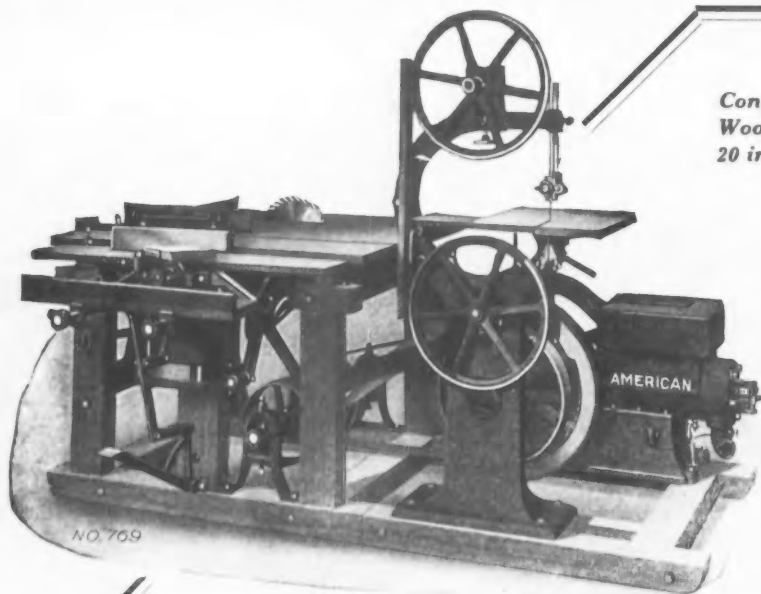
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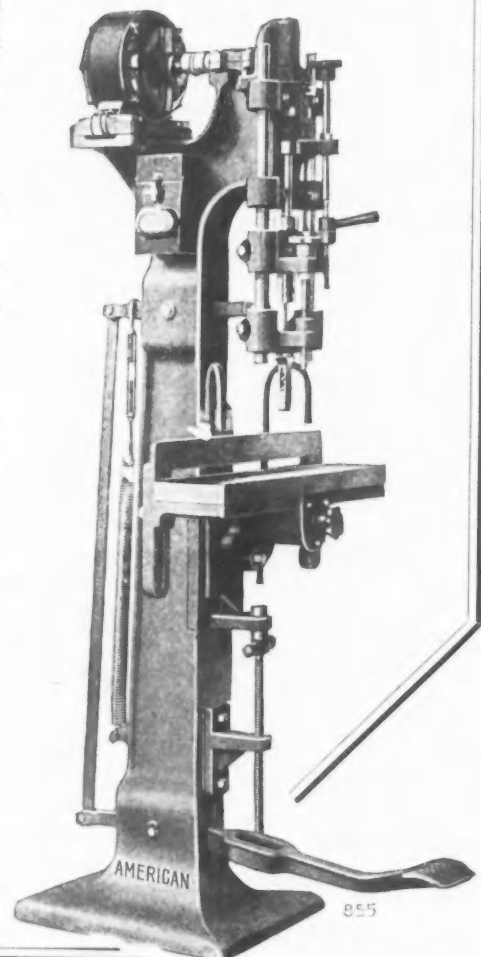
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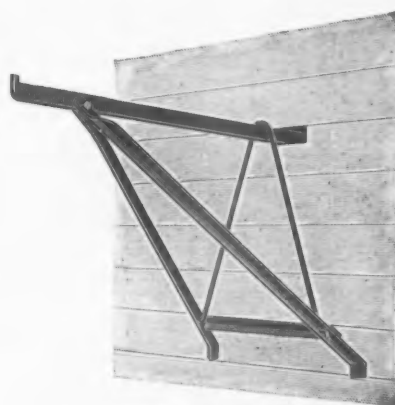
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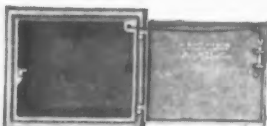
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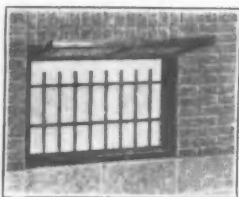
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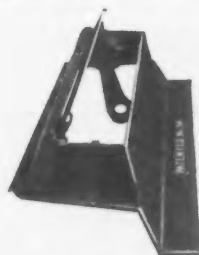
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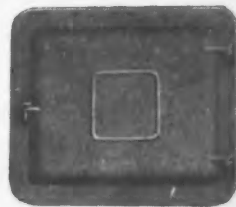
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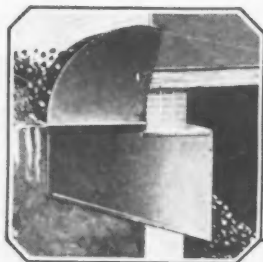
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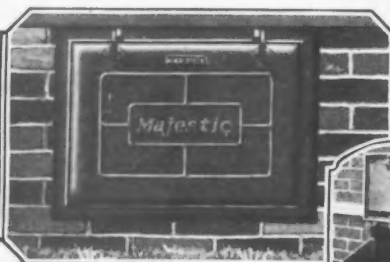
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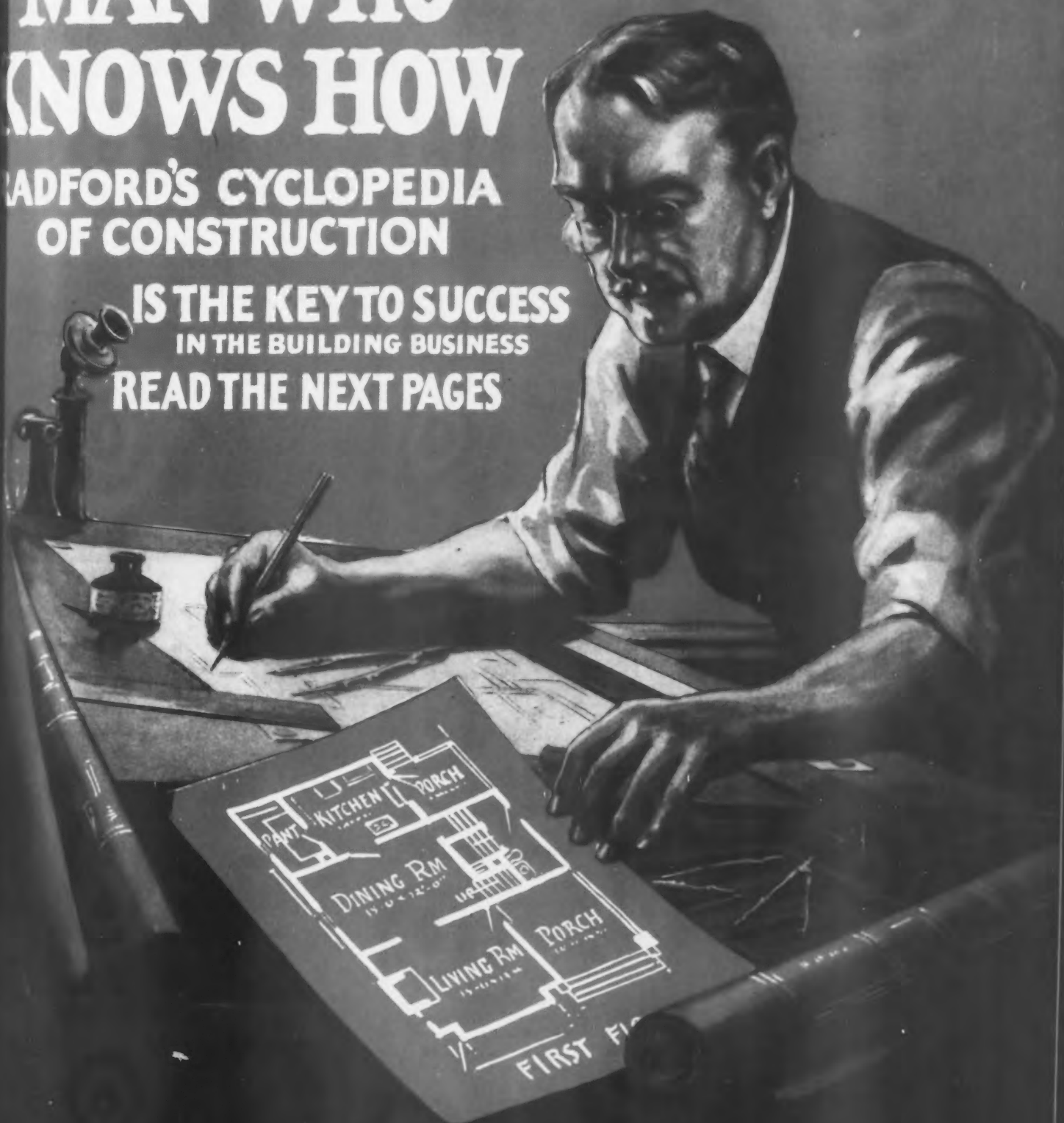
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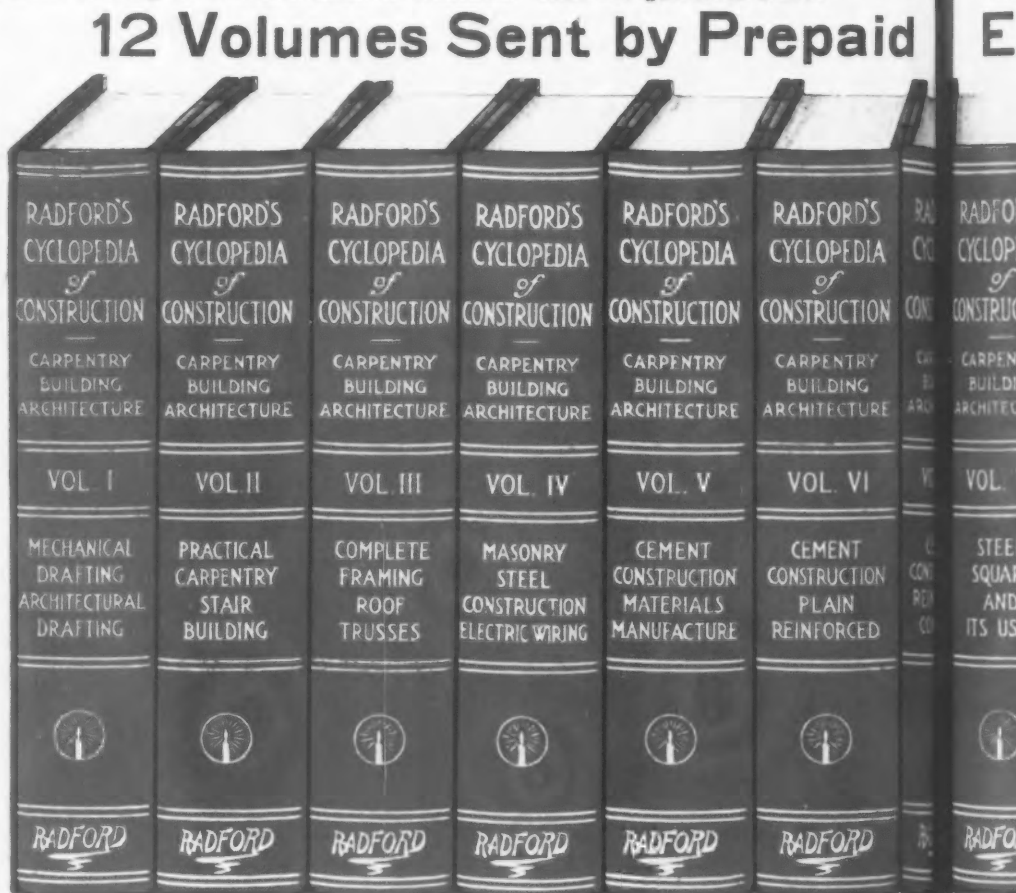
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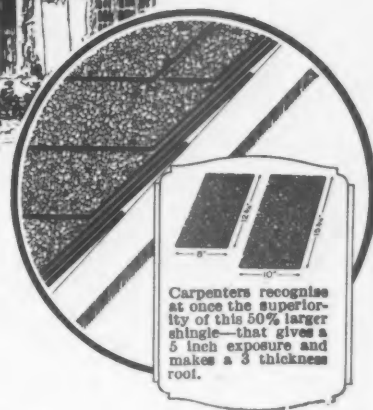
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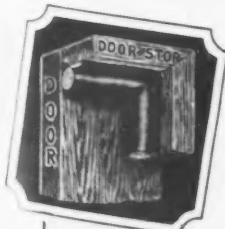
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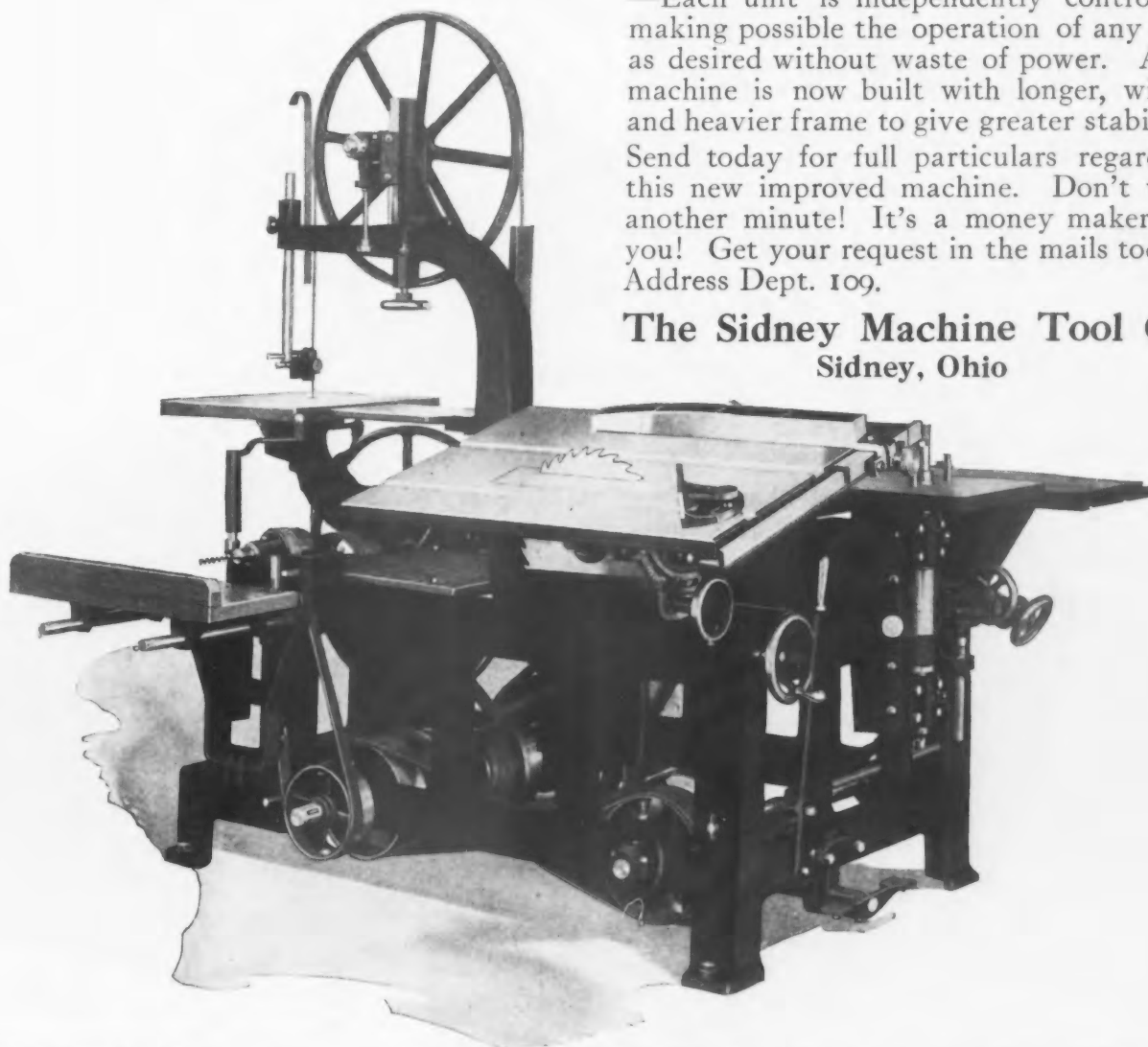
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- No Cross Belts!
- No Idlers!

—Each unit is independently controlled, making possible the operation of any unit as desired without waste of power. Also, machine is now built with longer, wider, and heavier frame to give greater stability. Send today for full particulars regarding this new improved machine. Don't wait another minute! It's a money maker for you! Get your request in the mails today! Address Dept. 109.

The Sidney Machine Tool Co.
Sidney, Ohio





Lupton Casements in Residence of
H. N. Foster, Esq., Ashland, Ky.
Tyson & Foster, Architects.

* Honorable mention "House Beautiful" Small House Competition.

You'll notice that most of the *Prize-Winning Houses have Steel Casements

IT'S quite natural, considering how casements of steel lend their slender lines to charming designs and their correct proportions to harmonious composition.

And when Lupton Casements are used, you have full assurance of long and satisfactory service. Owners give "honorable mention" to contractors who provide them with Lupton Casements of copper-steel.

Of rigid design, stoutly welded, with close weathering contacts and serviceable hardware, Lupton Casements appeal to good builders everywhere. They have set a new standard of window comfort and beauty, combined with lasting convenience. Let us send you our new Casement Catalogue C-122.

DAVID LUPTON'S

2203 E. Allegheny Avenue

Atlanta
Baltimore

Boston
Buffalo

Chicago
Cleveland



SONS COMPANY

Philadelphia, Pennsylvania

Dallas
Detroit

Los Angeles
Newark

New York
Pittsburgh

LUPTON

STEEL WINDOWS EVERYWHERE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

You Must See **NU-TILE**

Tapestry Asphalt Shingle

WORDS cannot describe nor brush paint the beauty of **Nu-Tile** Tapestry Shingles—you *must see them*—to appreciate the unobtrusive harmony of nature's own permanent colors, as they are blended in the six major **Nu-Tile** tints. These again are laid on the roof in innumerable artistic combinations, enhancing the attractiveness of any house.

But **Nu-Tile** Shingles are more than a beautiful roof covering. The same sturdy weather resistance,

which has been built into Amalgamated roofing products for so many years, is contained in **Nu-Tile** Tapestry Shingles. And in nature's non-fading minerals, marble, granite, slate and porcelain, lies the secret of the permanency of **Nu-Tile** tints.

Not until you examine actual samples of **Nu-Tile** Shingles can you get an adequate conception of their unusual roofing values.

You should have a set of **Nu-Tile** Samples to show your clients.



Beverly Country Club, Chicago
W. Gifford Uffendorf, Architect

Beverly Country Club

MR. S. K. MILLIGAN, President,
Amalgamated Roofing Company,
431 So. Dearborn St., Chicago, Illinois.

Dear Mr. Milligan:

I am sorry I was not at the office when you called, for I wanted to tell you of the many interesting and amusing comments of members of the club, since we laid our new roof of **Nu-Tile** Tapestry Shingles.

Several inquired whether a less costly roof would not have served as well—they reasoned it must have cost considerable.

The general comments are, however—it almost makes the club look like another building. I NEVER REALIZED A NEW ROOF COULD SO IMPROVE THE APPEARANCE OF A BUILDING. The club appearance is 100 per cent improved by the new roof.

I, personally, am highly pleased with the job. The weight of your **Nu-Tile** Shingles and their apparent wearing qualities, it seems to me, insures us against the expense of re-roofing the club for years to come.

Sincerely yours,

(Signed) C. R. WALGREEN,
President (1924)

CRW:PL

Nu-Tile Tapestry Shingles are manufactured by
THE AMALGAMATED ROOFING COMPANY
431 S. DEARBORN ST. CHICAGO, ILLINOIS

THESE SAMPLES
OF

NU-TILE
Tapestry Shingles
are for you



WRITE FOR THEM TODAY

THE AMALGAMATED ROOFING CO., (COUPON)
431 South Dearborn Street, Chicago.

Please send me full details and a complete set of **Nu-Tile** Tapestry Shingle samples.

Name.....

Firm.....

Address.....



Before



After



The Contractors' Market For "Overcoating" and Remodelling Frame Houses

HERE is the reason why, if I were a contractor, I would specialize in "overcoating"—

Of the 24,000,000 houses in the United States, 18,000,000 are frame!

America now builds only 200,000 houses each year—therefore it will take ninety (90) years at the same rate to build another 18,000,000 houses—

To build a *market* for your services as big as that which already exists!

Some day housing will catch up with demand—then what are you going to do? Building will gradually fall off—where will America's 75,000 contractors turn to employ their ability?

More than likely there'll be a lively scramble to get into the "overcoating" and remodelling business—to do what has been left undone in the past; that's all there'll be to do for a lot of people.

I'd get into the "overcoat" and remodelling business **RIGHT NOW**, because

1—You are not dependent upon other professional men for jobs.

2—In bad times the property owner must keep his house in repair, while the man-about-to-build can put it off indefinitely, and leave you out of work.

3—There's more money in "overcoating" now than there will be when more people get into it.

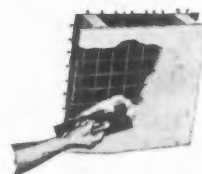
4—When a man buys an "overcoat" he is sure to do a little extra work here and there. We are about to begin the **BIGGEST** and **MOST COMPLETE** merchandising, advertising, and selling campaign ever undertaken by a building material manufacturer—

... And, every contractor has a part in it. Write us for the complete details of our 1925-1926 "OVERCOAT" CAMPAIGN.



"Overcoating" is simply covering a building with beautiful, permanent, weather-proof, fire-safe, inexpensive, exterior walls of man-made stone; namely Reinforced Stucco.

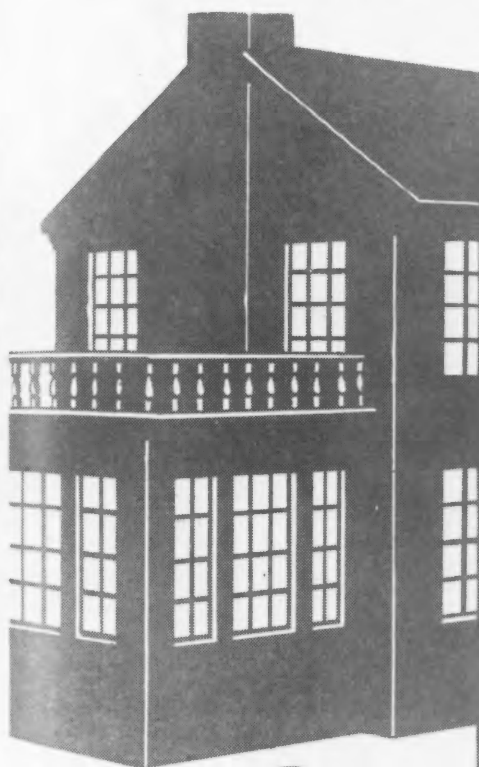
"Overcoats" are equally good for cottages, garages, apartments, duplexes, churches, halls, hotels, and all other aged and weather-worn buildings.



NATIONAL STEEL FABRIC COMPANY

706 UNION TRUST BUILDING · PITTSBURGH, U. S. A.

REINFORCE *for* **DURABILITY**
WELDED STEEL WIRE **FABRIC** NATIONAL STEEL FABRIC



Use this
Coupon

BEAUTIFUL
CLOTHES CLOSETS



Increase the Value of the Home

A few little touches of modern convenience and beauty will transform a commonplace house into a most valuable and attractive home. Clothes closets, for example, can easily be made roomy and wonderfully convenient at trifling cost through the installation of Knap & Vogt fixtures.

Our folder "Beautiful Clothes Closets" is truly a mine of closet information for the builder. It shows exactly how to save space, provide beautiful, convenient closet arrangements, and strengthen your reputation for resourceful capable work. Send the coupon today for this practical manual on modern clothes closets.

Knap & Vogt Mfg. Co. GRAND RAPIDS, MICHIGAN

Knap & Vogt Clothes Closet Fixtures are sold in hardware stores everywhere, but if you are unable to find your local dealer, order from the factory direct.

PRICES

14 inch.....	\$4.00	22 inch.....	\$5.20
16 inch.....	4.30	24 inch.....	5.50
18 inch.....	4.60	26 inch.....	5.80
20 inch.....	4.90	28 inch.....	6.10

KNAPE & VOGT MFG. CO., Grand Rapids, Mich.

Please send me your Free booklet, "Beautiful Clothes Closets," and your Free blue print folder of closet plans.

() Architect () Contractor () Builder

Name.....

Address.....

City.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Long-Bell Douglas Fir

Douglas Fir users find Long-Bell trade-marked Douglas Fir lumber and timbers regularly dependable. A half century of lumber experience, thorough care in manufacture and definite high standards of production have given this product the reputation of *uniform dependability*. The trade-mark is on the end of the piece.



Plans for Small Homes

One of the most varied and complete services available on small homes is that issued to retail lumber dealers by The Long-Bell Lumber Company. Your retail lumber dealer will be glad to show you this service, which includes designs and floor plans of more than 150 small dwellings. Ask your dealer.

The Perfect Flooring for Oak Floors

A desirable oak floor is the combination of good workmanship and good flooring. Contractors everywhere who have used Long-Bell trade-marked oak flooring have found it not only well manufactured and beautiful in grain—but *economical, as well, to lay and finish*. Builders recommend it because of this economy, beauty, perfection of manufacture and durability.

DOORS All-California-White Pine

Long-Bell doors, made throughout of California White Pine, cost less to fit, mortise and hang than doors made of other woods. They take any finish perfectly. Sold through retail lumber dealers.

Within these walls

THE same care with which home buyers naturally consider the charm and outward comforts of a home should be given to the unseen, hidden construction within the walls.

Within those walls are concealed materials and workmanship that affect so vitally the durability of the home—*how long that outward charm will last!*

Lumber is there, with the very important task of so strengthening the struc-

ture that it will hold its own against Time and undue depreciation. Good lumber can be the home owner's best investment asset.

For years Long-Bell trade-marked lumber has given home buyers and builders merited confidence in the durability of the home.

It is well manufactured—it is economical—it gives maximum building value—and for those important reasons Long-Bell lumber is trade-marked on the end of the piece for ready identification.

Ask your retail lumberman

THE LONG-BELL LUMBER COMPANY
R. A. Long Bldg. Lumbermen Since 1875 Kansas City, Mo.

Long-Bell

Trade Marked LUMBER

Douglas Fir Lumber and Timbers; Southern Pine Lumber and Timbers;
Creosoted Lumber, Timbers, Posts, Poles, Ties, Guard-Rail
Posts, Piling; Southern Hardwood Lumber and
Timbers; Oak Flooring; California White
Pine Lumber; Sash and Doors.

KNOW THE LUMBER YOU BUY

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Half the Coal!

"I had a hot air furnace in our 7-room house before I got the Bulldog and our house was always cold. With the Bulldog it only takes *half as much coal* and we had weather below zero, and the house was nice and warm in the morning when we got up. We never

have the draft on more than half an hour at a time, and it has the place red hot. It is easy to regulate and keeps the fire all day in mild weather.

JESS T. CONRAD,
1121 W. Arch St., Shamokin, Pa.

Furnace Heats Seven Rooms Where Stove Heated One

"Your letter received asking about the Bulldog furnace. We have had ours in about six weeks and so far it does all Babson Bros. claim for it. We have seven rooms, four on the first floor and three on the second, and it heats them fine. We find it takes a little more coal to heat the whole house than it did to heat one room with a stove using chestnut coal."—J. B. Smith, 19 Elm St., Somerville, N. J.

2½ Tons Heats 5 Rooms

"There is no heater to compare with the Bulldog. I burned 2½ tons of coal last winter and heated five rooms and a bath."—Walter Geary, Gloucester, Mass. **That's what the Bulldog does with coal! Now read, in the letter of Mr. Redetzke, what it does with about the lowest grade of fuel you can think of!**

Heats Home for 25c a Week!

"I can run my Bulldog furnace for fourteen days in normal weather conditions *on the actual cost of fifty cents.*" So writes F. R. Redetzke, of Cleveland, North Dakota, and

he adds: "Hard to believe, is it? That's what some of my neighbors thought until I showed them! We have an unlimited amount of grain screenings which I use for fuel."

No Money Down!

Comes Completely Erected. Install It Yourself

The Bulldog is sent to you for *free inspection*. Then, if satisfied, you make only small monthly payments at our remarkably low price. Write today! *Don't* miss this chance to cut down your fuel bills! **Install a Bulldog Furnace.** It comes to you completely erected—goes through any door—fits any height of basement—and you install it yourself in less than two hours! In fact, H. B. Keater, of Libertyville, N. Y., says he installed his

Bulldog in 28 minutes! *Don't* put up with the old fashioned stove heat or some outworn furnace—when you can so easily get the greatest advance in scientific heating at an astonishingly low price. The Bulldog burns almost *any* kind of fuel, from hard coal to cheap screenings. Keeps a wood fire over night. **We have factory connections in both east and west and ship from the nearest point.**

Send for Free Book

Learn how to have all the heat you want—where you want it—and save money! Remember the Bulldog is *different*—and *better*! Complete combustion of gases save 25% of your fuel bill. Exclusive Gable-Top Radiator receives *all* the direct rays of the fire. Exclusive oblong fire-pot is not only ideal for coal, but enables you to keep a wood fire over night. Remember—the Bulldog is sent for *free inspection*—then small monthly payments at an amazingly low price! Send for Free Book TODAY!

BABSON BROS., 19th Street and California Avenue,
Dept. 16-56 Chicago, Ill.

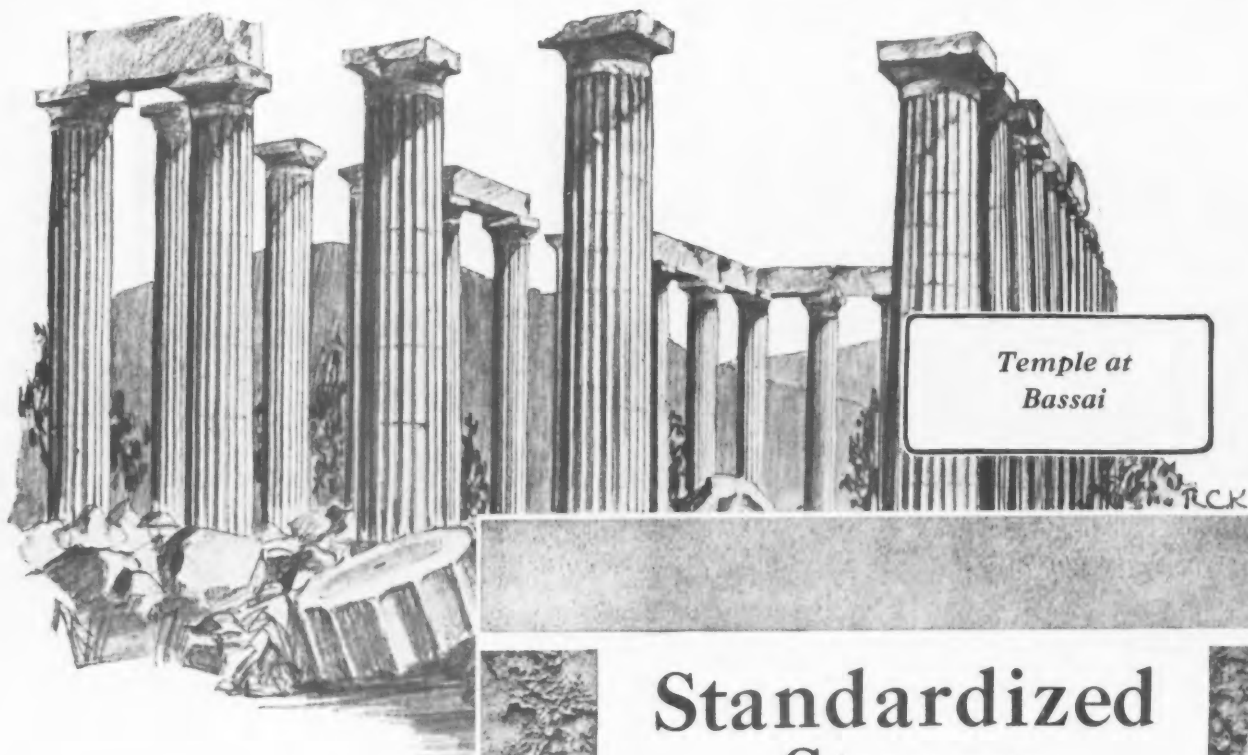
Babson Bros., Dept. 16-56

19th St. and California Ave., Chicago, Ill.

Without obligating me in any way, please send me your free catalog and special offer on the Bulldog Pipeless Furnace.

Name.....

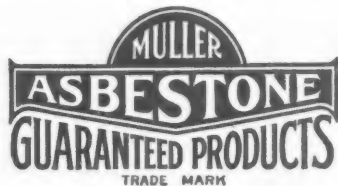
Address.....



*Temple at
Bassai*

The Story of **STUCCO**

The temple of Apollo at Bassai in Greece, built about 470 B.C. of yellow sandstone, was faced entirely, both inside and out, with Stucco. No better ground could be imagined for the decorative polychrome painting which at this period of Grecian history had reached a very high degree of beauty. Even the temple pavements were made of a specially resistant stucco and stained in various patterns with gay pigments. Without stucco, in fact, the early architect would have been hard put to it to secure his effects.



Standardized Stucco

**ASBESTONE Quality is Uniformly
High and Dependable**

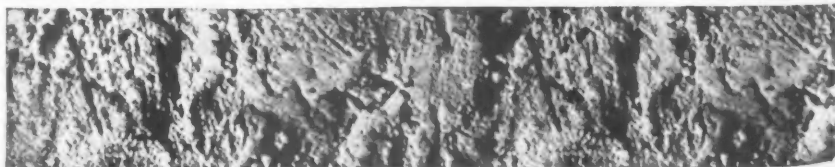
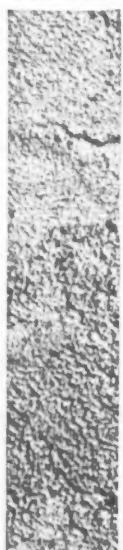
ASBESTONE Stucco cannot vary. Before it is shipped samples of each lot are given a laboratory test to ascertain its tensile and modulus of rupture strength. The only standardized stucco.

ASBESTONE Stucco is unequalled in tensile strength, elasticity and durability. It is weather and fireproof; a material economical and permanent. If applied according to our own instructions, it is guaranteed not to crack, expand or contract of its own volition. In remodeling old and building new structures, it meets every requirement.

Sold by most reliable dealers

If your local dealer cannot supply you, write for samples and prices. ASBESTONE stucco, quality considered is extremely low priced.

FRANKLYN R. MULLER, Inc.
908 Madison Street
Waukegan - - Illinois





REMODEL

Every home in your trading area that has old fashioned worn floors is a live prospect for the sale of Oak Flooring. Nothing spoils the appearance of a room, and makes the whole house seem run-down, more than a worn, uneven floor. Nothing is harder to keep clean. On the other hand, no other single improvement will make the house appear more modern, add to the attractiveness of furniture, and lessen housework, than a bright permanent Oak Floor.

Laid right over old worn floors

No woodwork is disturbed except the quarter-round at the baseboard. The work may be done one room at a time, with less disturbance to the household. Figure the cost for your customers by the room; they will be surprised at the reasonableness of the figure. Call their attention to the advantages of beauty and sanitation.

Beauty

Nature provides in Oak a beautiful floor, bright and lustrous, which may be finished in various colorings, to harmonize with walls or furnishings.

Sanitation

Dirt cannot collect, and a little regular attention keeps an Oak Floor in perfect condition. The housewife is relieved of back-breaking and unsatisfactory sweeping.

Add another room

The attic is an ideal place for the children to play, or it provides extra

accommodation for guests, when it is made attractive and usable by Oak Flooring.

Increased value

When the time comes to rent or sell, the owner will get more for an Oak Floored home. And as a permanent floor that never needs replacement, Oak is an investment, not an expense.

How we help you

We will supply you with free literature to show prospects, containing illustrations of the new color finishes, and suggestions as to how rooms may be floored and finished to suit individual taste. How to figure accurately and quickly the amount of flooring required on a job is contained in the booklet, "How and Where to Use Oak Floors." Also grading rules; standard measurements, thicknesses, and widths; handling, laying, and nailing Oak Flooring. Put your flooring problems up to our experts, who will assist you without obligation. Mail this coupon for valuable helps.



TEAR OUT AND MAIL

OAK FLOORING BUREAU
838 Hearst Bldg., Chicago

Please send me "The Story of Oak Floors,"
and "How and Where to Use Oak Floors."

Name _____

Address _____

City _____ State _____



THE destructive enemy of sheet metal is *rust*. An alloy of Copper gives to Steel Sheets and Tin Plates the highest degree of resistance to rust and corrosion. This is a fact, proved by actual time and weather. Keystone Copper Steel gives superior service and satisfaction for roofing, siding, spouting, gutters, culverts, tanks, metal lath—and for all uses in the contracting and building construction field. Insist upon Keystone quality.

Black and Galvanized SHEETS

AND HIGH GRADE ROOFING TIN PLATES



We are manufacturers of Sheet and Tin Mill products for all purposes—Black Sheets, Apollo and Apollo-Keystone Galvanized Sheets, Corrugated Sheets, Formed Roofing and Siding Products, Sheets for special purposes, Roofing Tin Plates, Bright Tin Plate, Black Plate, Etc. Sold by leading metal merchants.

Remember, when resistance to rust is a factor, it is important that you demand Keystone quality. Its greatest testimonial is its users:

Important railroads use Keystone for roofing and new car construction.

The U. S. Reclamation Service, the U. S. Forestry Service, and Bureau of Public Roads use Keystone for the construction of culverts, flumes and tanks.

Prominent septic tank and vault makers use Keystone for greater durability.

Successful architects, engineers, contractors, roofers and builders use Keystone for maximum wear and rust-resistance.

Leading burial vault and casket manufacturers use Keystone for increased permanence and protection underground, where both service and sentiment demand enduring quality.

Keystone Copper Steel demonstrated its excellence in the service tests of the American Society for Testing Materials. Could you ask for more thorough and impartial proof?

Users everywhere favor Keystone for all purpose requiring lasting service. Send for "Facts" booklet.

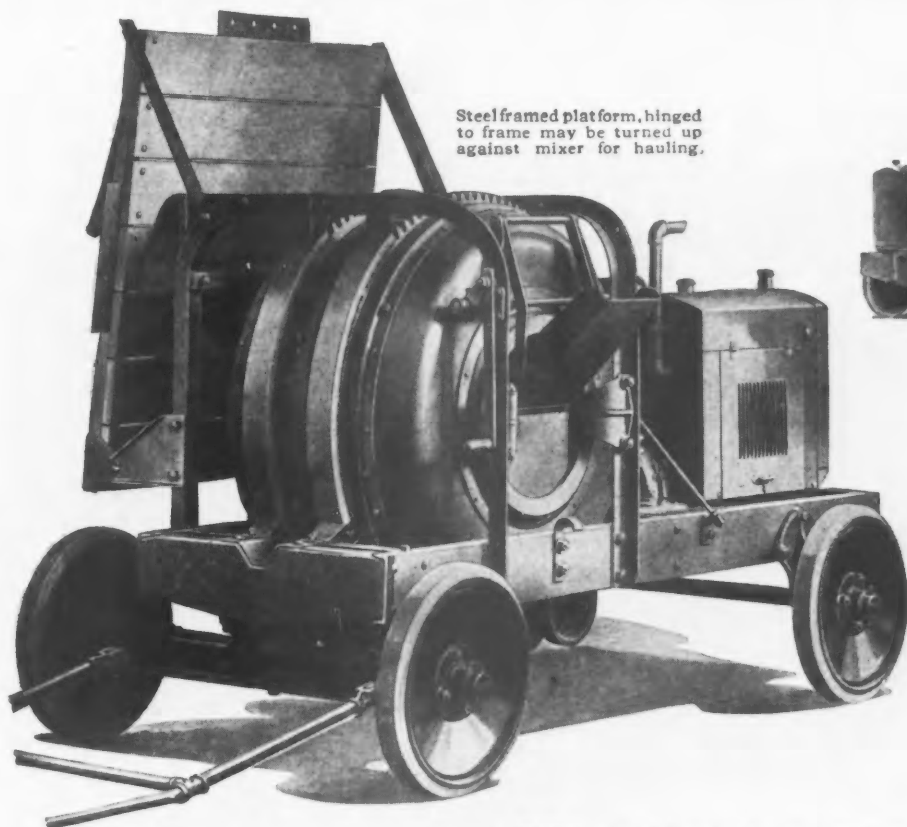
American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle



Steel framed platform, hinged to frame may be turned up against mixer for hauling.

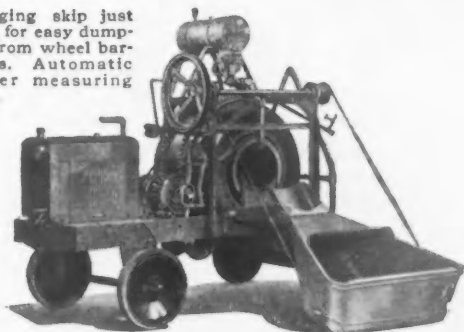
Wide charging hopper takes full batch! Shoots charge into drum at high speed!



Dandie Light Mixer

107-S. Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

Charging skip just right for easy dumping from wheel barrows. Automatic water measuring tank.



High charging angle shoots charge into drum in swift clean slide!

To send back the coupon at the bottom of this page is to find out how big volume and standardized production makes possible this extraordinary value in a light mixer—to discover that *fast charging, liberal drum dimensions, fast discharging, light weight, and great reliability have been combined in the*

KOEHRING

DANDIE

Light Mixer

Transmission mounted on roller bearings and running in oil bath! Drum rollers bevel-edged and chilled, and pinned to shafts that turn in big bearings!

Built to Koehring standards in every detail, the Dandie is not only a big producer, but will give long trouble-free service life. Yet, it is still within the price range for light mixers. Send back the coupon.

KOEHRING COMPANY MILWAUKEE WISCONSIN

PAVERS, MIXERS—GASOLINE CRANES, DRAGLINES AND SHOVELS

Sales Offices and Service Warehouses in all principal cities

Foreign Dept., Room 1370, 50 Church St., New York City

Canada, Koehring Company of Canada, Ltd.,

105 Front Street, East, Toronto, Ontario

Mexico, F. S. Lapum, Cinco De Mayo 21, Mexico, D. F.

Send Back the Coupon for Full Details!

Take our word for it, you will be putting yourself in the way of extra profits and extra value if you learn all about the details of this Dandie Model before you decide on a one bag light mixer. No obligations. Send back the coupon today!

A 2856-I

KOEHRING COMPANY, Dept. D-1

MILWAUKEE, WIS.

Without obligation to me of any kind, send me free information about the Koehring Dandie Light Mixer.

Name _____

Address _____

Do you know how to "figure" such items as these?

WHEN you get up against something unusual in "millwork" in a plan, such as a real Colonial entrance or bay window, how do you figure it? Do you pass the buck to the mill and let them guess at the cost of making the stuff? On competitive work they may throw you way out of line in your millwork bid.

Contractors and builders who know and use Curtis Woodwork avoid all the trouble and expense of made-to-

order millwork. They use standard designs in standard sizes. Their jobs are never held up because of the frames, doors, sash, trim, cabinetwork or stairwork. These items—in Curtis Woodwork—are delivered right from stock. In fact, often from the Curtis Dealer's own stock.

Figure them as Curtis Standard Designs

This is the practical way of handling

millwork on a house job. See that Curtis details are included on the plans and save yourself a lot of time and trouble figuring odd work, and all the grief that goes with made-to-order stuff.

Curtis Woodwork includes a complete line of standardized, architectural woodwork. Scores of different designs, in standard sizes, are ready for immediate shipment in the most-used woods. This well-known line of woodwork offers unusual profit-making opportunities to contractors and builders.

Curtis Woodwork is sold through lumber dealers. The Curtis Dealer nearest you will be glad to give you full information about the stock he carries and the availability from the mill of other designs and sizes. See him and ask him to explain the advantages of Curtis Woodwork for the contractor and builder.



At the left is Entrance C-101, which includes the frame, door, sidelight sash and transom for frame or masonry wall. For rough openings from 4' 11" by 8' 6" to 5' 10" by 8' 10". Below is Bay Window C-1110, which includes complete frame, brackets, moldings and sash. Over-all width 7' 8 7/8"; maximum projection from sheathing line 1' 10 1/2".

1866 CURTIS

Curtis Woodwork is identified by the mark above. Whatever you buy—sash, door, molding, or interior woodwork—see that it bears this trademark. Curtis Woodwork is sold under the "1866 Curtis Trademark" by Curtis Dealers east of the Rockies.



CURTIS WOODWORK

THE CURTIS COMPANIES SERVICE BUREAU

376 Curtis Building, Clinton, Iowa

Curtis Detroit Co. Detroit, Michigan	Curtis-Yale-Holland Co., Minneapolis, Minn.
Curtis & Yale Co. Wausau, Wisconsin	Curtis Door & Sash Co. . . Chicago, Illinois
Curtis, Towle & Paine Co., Lincoln, Nebraska	Curtis Sash & Door Co. . . Sioux City, Iowa
Curtis Bros. & Co. Clinton, Iowa	Curtis, Towle & Paine Co. . . Topeka, Kansas

Curtis Companies, Incorporated Sales Offices: Pittsburgh, New York, Baltimore

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

FAIRBANKS-MORSE HOME WATER PLANTS

You Can Be Assured of Economical, Dependable Water Service beyond the city mains



Home owners in increasingly large numbers are learning that water under pressure is one of the greatest modern aids to health and happiness in the home. Home owners who build or remodel beyond the water mains are always interested in knowing that they, too, can have running water in bathroom, kitchen, laundry, garage, barn, watering trough—**any place—at a cost of merely a few cents a day.**

When you are going over the specifications with your customers who will live beyond the water mains, this matter of water under pressure will be a welcome suggestion. With water always handy at the turn of a faucet—as compared with the drudgery of “pump, pail and carry” methods—the owner of the new home or remodeled home will be far better pleased with the modern living conditions.

No matter where the home is located there is a Fairbanks-Morse Home Water Plant to fit the requirements, in capacities from 120 gallons per hour to 5,000 gallons. There are electric and engine-driven plants for drawing water from any source—lake, spring, stream, shallow well, deep well, cistern. The electric plants are automatic in operation—self-starting, self-priming, self-oiling.

We shall be glad to send you, without obligation, our 32-page Home Water Service Book which is of particular interest to architects, builders and home owners.



200-gal. per hour plant
“It’s Automatic”



120-gal. per hour plant
“It’s Automatic”

FAIRBANKS, MORSE & CO.

Manufacturers

Chicago, U. S. A.

Fairbanks-Morse
Products



“Every Line a
Leader”

Branches and Service Stations covering every state in the Union

PRICES

120 gallons per hour capacity pump, 60 cycle motor, 8 gallon galvanized tank, complete, \$84.75 list.

200 gallons per hour capacity pump, 60 cycle motor, 35 gallon galvanized tank, complete, \$123.00 list.

Above prices are cash f. o. b. factory. Also larger sizes for engine or electric drive, correspondingly low priced.

FAIRBANKS, MORSE & CO., Dept. H-9
900 South Wabash Avenue, Chicago, U. S. A.

Send latest literature and complete information concerning Fairbanks-Morse Home Water Plants.

Name
Address
City State

Pin This To

Your Letterhead

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Each of the forty-two homes shown in the picture uses a

“MERION”

Automatic Gas Water Heater

The average gas bill for one month for these homes including gas for all purposes was \$4.78. (Artificial gas at \$1.10 per thousand.)



The “MERION” is made in three sizes and retails for

\$60—\$70 and \$90

It has the lowest gas bill of any automatic gas water heater.

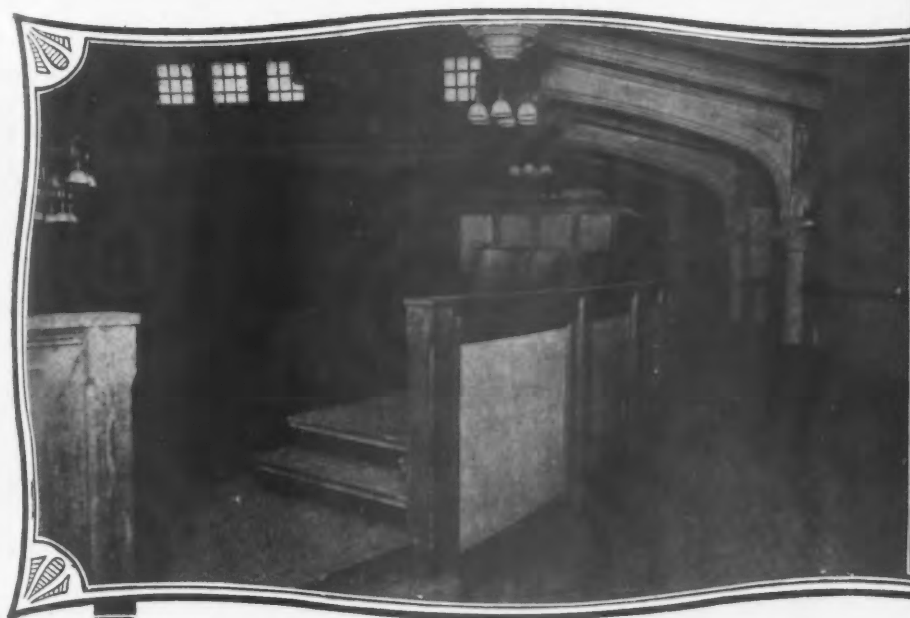
Every home can now afford an automatic water heater.

Sold by Leading Plumbers Everywhere

JOHN WOOD MFG. COMPANY

CONSHOHOCKEN, PA.

LOS ANGELES, CALIF.



There will never be a fire horror here

because the builder and architect provided this auditorium with partitions of Ambler Asbestos Building Lumber and Linabestos Wallboard—permanent materials that offer absolute protection against fire. Long-fiber asbestos and Portland cement have, in their original form, stood intense heat. They combine to make these sturdy materials. The finished products are as permanent as the primary constituents. Nothing to decay, they grow stronger with age.

Ambler Asbestos Building Lumber

is used for weatherproof and fireproof construction—exterior half-timbering, fire-doors, lining for elevator shafts and for a variety of other uses. The laws of Massachusetts, Connecticut, New York and Pennsylvania require that such material be used for all moving picture booths. We are pleased to furnish, free of any obligation,

blue prints and specifications for these booths. This material comes in a restful gray color that may be used without any special finish, although painting can be used wherever it is wanted. Furnished in sheets 42 inches wide and 48 to 96 inches long and in various thicknesses from 3/16" to 1" thick.

Ambler Linabestos Wallboard

is for interior construction and furnishes an ideal substitute for plaster. Buff in color, it comes in sheets 48" by 48" and 48" by 96" 3/16" and 1/4" thick to fit standard joists and studding.

Both materials may be cut with ordinary tools and can be handled by carpenters. Let us send you samples and show their application to some job now in hand.

Asbestos Shingle, Slate & Sheathing Company

Department A

AMBLER, PENNA.

Branch Offices:—Baltimore, Boston, Buffalo, Chicago, Cincinnati, Detroit, Cleveland, Minneapolis, New York, Omaha, Philadelphia, Pittsburgh, Washington, Wilkes-Barre; Toronto, Canada; Havana, Cuba.

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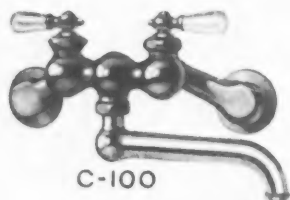
Please send me information and literature on Ambler Asbestos Building Lumber and Ambler Linabestos Wallboard as applied to the construction of

Name.....

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Some of the
CHICAGO FAUCETS
installed in the
BOOK CADILLAC HOTEL



C-100



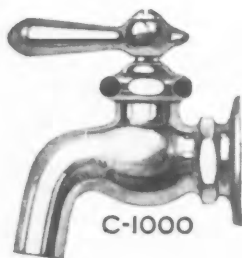
C-701



C-5000



C-2100



C-1000



C-5200



6,000 FAUCETS and this one unit fits them all

More than six thousand water outlets in the Book Cadillac Hotel are guarded by Chicago Faucets. All kinds of fixtures for all kinds of purposes are included.

One standardized renewable working unit fits each and every one of these faucets regardless of type or use.

The result is that a minute—no longer—is required to change a unit and stop a faucet leak.

The unit contains all wearing parts—seat and washer—both renewable quickly, easily and at a cost of a few cents. There is no wear on any part of the body casting. The fixture itself never need be removed for repair or

replacement. Since most of the fixtures are "concealed"—built into tile walls—the advantage of renewable unit construction is obvious.

By saving guests of the Book Cadillac from the annoyance of leaking faucets and service interruptions incident to repairs, Chicago Faucets would fully justify their selection. But in addition to this they will save the hotel thousands of dollars in repairs and replacements and be there as long as the building stands.

For illustrated catalog—complete information, prices, and a cut-out sample showing construction and operation, write

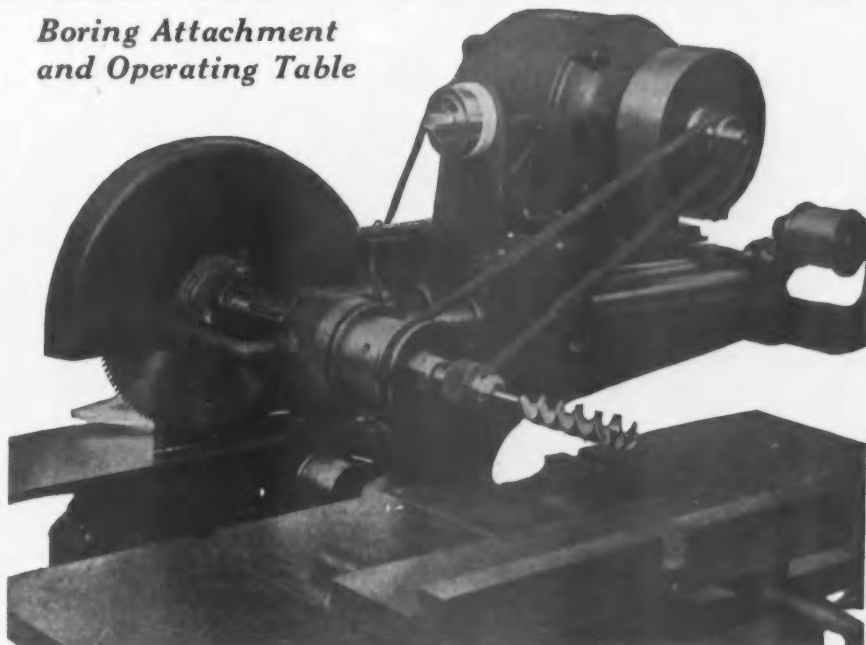
THE CHICAGO FAUCET CO.

2700-2722 N. Crawford, Chicago.

CHICAGO FAUCETS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

*Boring Attachment
and Operating Table*



"We finished the job way under estimated cost, and still made more money than we figured on"—

One way to make more profit in 1925:—Don't use manual labor on work which machinery will do better and more economically. By lowering building costs the 20th Century Woodworker will bring more business for you and more work for your men. It is far cheaper to use the 20th Century Woodworker than to get along without it. Within reason, you can buy it on your own terms. Mail the coupon now and get full particulars.

***Make your jobs come out the way
you figure them—or better—
Make shorter delivery promises,
and keep them—by having the***

20th Century Woodworker

No Motor to Pull

In crosscutting with the 20th Century Woodworker the operator pulls the saw only, the motor remaining stationary. This saves effort for the operator, reduces vibration, and makes for more accurate work.

With a 10-inch saw and a 1 H. P. Motor the 20th Century Woodworker will rip or cross-cut 3-inch hardwood. With a 12-inch saw and 1½ H. P. motor it will rip or cross-cut 4-inch hardwood.



**Ball-
Bearing
Construction**

Mail Coupon for Details →

Cresson-Morris Co.

18th Street &
Allegheny Avenue
Philadelphia
Pa.

The 5-in. Jointer on the 20th Century Woodworker in workmanship and finish is the equal of any separate jointer.

Cresson-Morris Company
Allegheny Ave. & 18th St., Philadelphia
Please send full particulars on the 20th Century Woodworker.

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Reduce Distribution Costs

by pouring concrete from an elevated
WONDER

A WONDER Mixer located five, ten or fifteen feet above your materials and discharging directly into the forms reduces the cost of mixed concrete distribution and largely eliminates wheelbarrow hauling.

The standard track loader used on a WONDER Mixer makes this possible to any reasonable elevation by simply extending the track rails. This extension may be added at any time.

This is a very desirable feature and thousands of contractors are using WONDER Mixers with extended loaders to reduce their distribution costs.

The WONDER catalog fully describes the WONDER track loader and its many advantages. It also contains illustrations of the various uses to which this extension feature is being applied.

Send for your copy today!

CONSTRUCTION
103 VINTON ST.

1910-1925
*The Original
and Standard
for 15 years*

MACHINERY CO.
WATERLOO, IOWA

Branch Offices With Stocks at

LOS ANGELES, INDIANAPOLIS, PHILADELPHIA

for ROOFS



Demand answers to these questions before you buy *any* roofing

DON'T be satisfied with such meaningless terms as "high quality," "durable," etc., when you select roofing. Get specific statements — and proof of them — when you buy. Ask these questions and prove the answers by actual demonstration:

1. *Is this roofing strong and husky?*
Twist it; bend it. See if it is tough, if it cracks or breaks. Has it enough weight and body to lie flat, without curling, in the face of sun, wind and weather?
2. *Is the slate firmly imbedded in the surface?*
Put it on the floor. Kick it, scuff it. Note whether the small particles of crushed slate stay on or come off. What will sliding ice do to it?
3. *How do extreme temperature changes affect it?*
Put it on ice; then pour hot water on it. Watch the results carefully. Does this extreme and sudden change of temperature impair it in any way?

4. *Will it "run" under extreme heat?*
Put a sample on a hot radiator. Whatever happens to the sample will happen when this roofing is exposed to blistering sun, on your home. Don't buy roofing that "runs."
5. *Will this roofing absorb water?*
Roofing should shed water — not absorb it. Soak a piece and weigh it. Avoid roofings that hold moisture.
6. *Is this a fire-safe roofing?*
Will flying embers ignite the roofing you put on your home? Ask if it is approved by the National Board of Fire Underwriters. Demand a demonstration.

These are exactly the conditions your roof must face and the "6 Daring Tests" we invite you to make of Beaver Vulcanite Roofing. Mail the coupon for a free sample and don't squander a penny for any roofing that fails to endure these tests. Know what "high quality roofing" means. Check the coupon for your sample now.



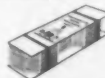
BEAVER

PRODUCTS

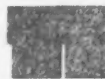
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Beaver Vulcanite Plain and Slate-surfaced Roll Roofing



Beaver Vulcanite Special Re-roofing Shingles in Beautiful Colorings



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Roof Paints and Cement

for
WALLS



Beaver Jumbo-Weight Fibre Wall Board



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Beaver Bestwall—the superior plaster wall board

Ask how you can
Re-roof or Remodel
Now

Take 10 months
to pay

FREE

samples and complete
details

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Dept. M-9, Buffalo, N. Y.

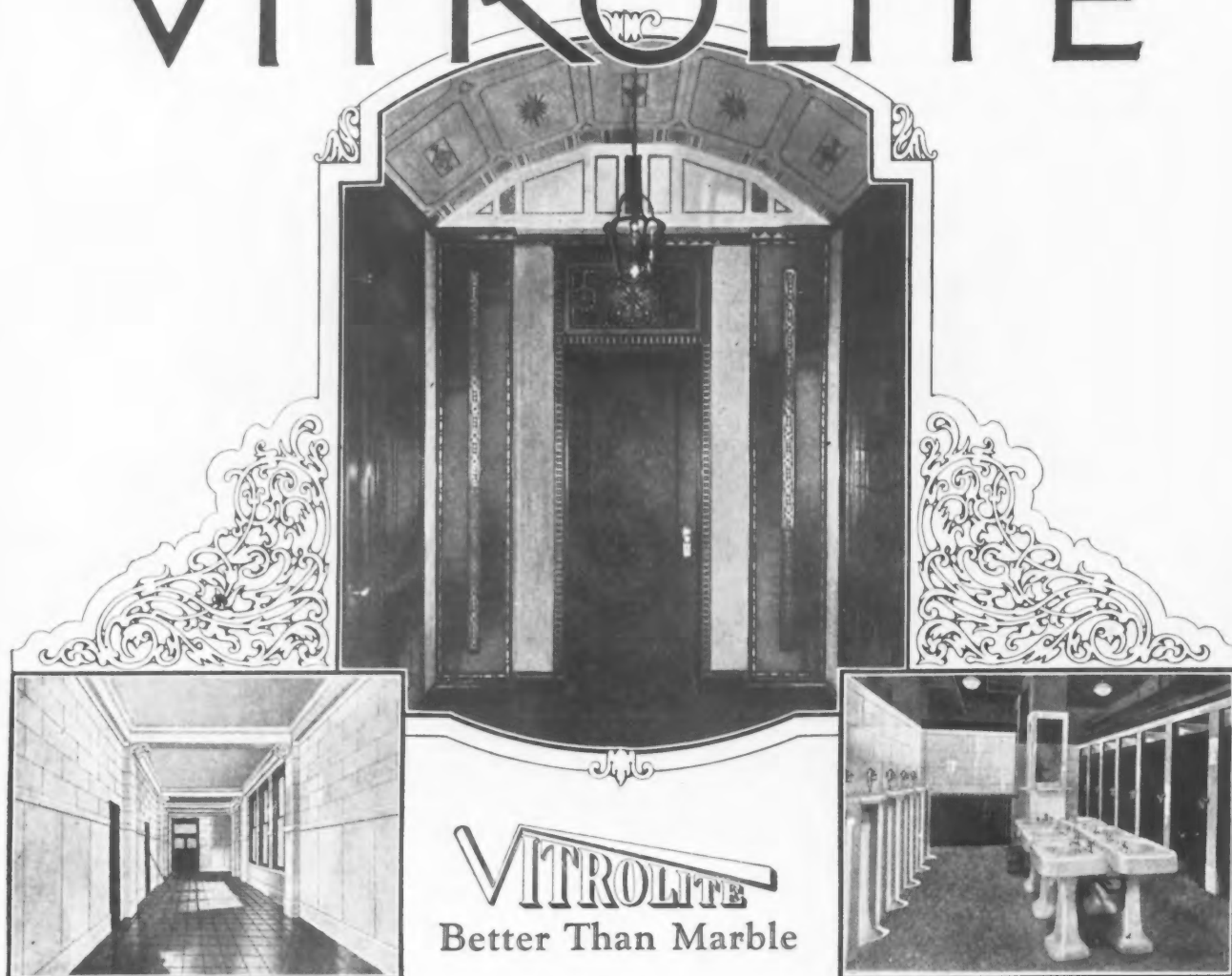
(or) Thorold, Canada
(or) The Beaver Board Co., Ltd.,
133-136 High Holborn, London,
England.

Gentlemen: Please send me samples
and descriptions of Beaver Vulcanite
Roofing and other Beaver Products
listed below.

Name _____
Address _____
City _____ State _____

☐ Check here if you want details on
how you can re-roof or remodel your
home now and take 10 months to pay

VITROLITE



VITROLITE
Better Than Marble

Makes Old Buildings New

OFFICE Building rents are increasing every year. But the tenants who pay these rents demand up-to-date buildings.

Dirty corridors, stained wainscotings, gloomy lobbies, unsanitary toilets—all of these help to drive tenants into newer buildings.

Make your building new and keep these tenants! Vitrolite will show you how. In new buildings, Vitrolite is accepted as the ideal wall surfacing material. And it can be put into old buildings just as easily as into new. It is the only material of its kind that can be put over existing walls without expensive rebuilding.

Factory-trained workmen, using a patented elastic cement, can quickly make your old building a new one by installing Vitrolite wainscotings and Vitrolite toilet rooms.

Vitrolite is a hard, fire-polished material. It is absolutely non-porous and, therefore, absorbs no odors. It cannot stain or discolor. There are no upkeep costs. A damp cloth is enough to keep it clean.

Vitrolite comes in four colors—white, ivory, jade and black. Beautiful effects can be obtained in decorated slabs.

Write for detailed information or let our nearest branch help you solve your remodeling problem for you.

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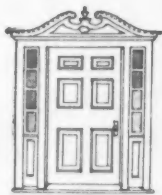
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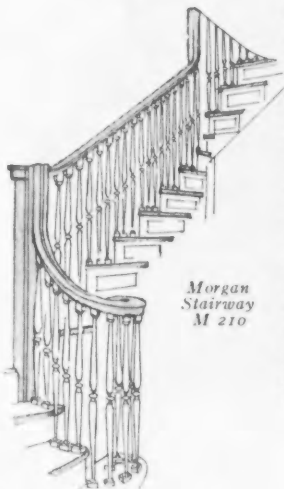
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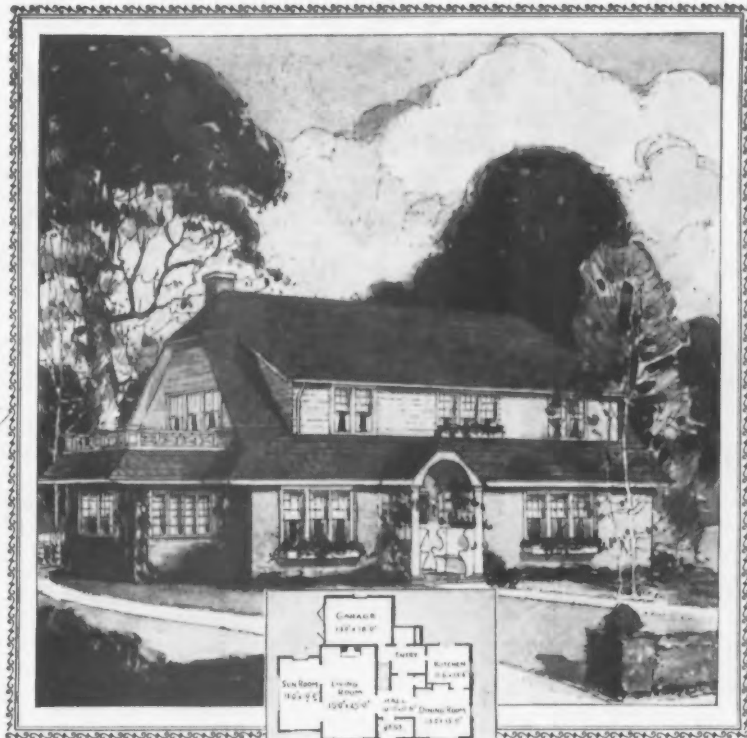
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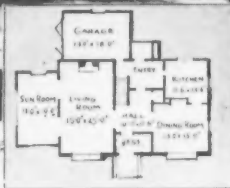
Morgan Entrance
M 50 1/2



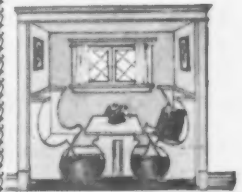
Morgan
Stairway
M 210



Morgan Plan
Suggestion No. 16 A



Main Floor Plan



Morgans Breakfast Nook
M 392



Morgan Mirror Door
M 888

*Unwisely chosen furniture
may be easily discarded—
not so with woodwork*



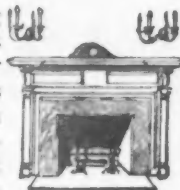
Morgan China
Case M 375

WHAT you build into a house is built to stay. The woodwork—the right kind of an entrance—the stairway, bookcases, china closet, mantel, cabinets, breakfast nook, to say nothing of the doors and trims. These are items which should be selected with care.

Therefore, experienced home builders specify their woodwork by name. And in many thousands of instances it is "Morgan-Quality." They insist upon having the genuine with this well-known quality mark stamped on every piece —MORGAN

To those familiar with the products of this concern, the name Morgan stands for (1)—Over 60

years of woodworking experience. (2)—Great organization of master craftsmen, factories and the most modern woodworking equipment. (3)—Vast acreages of timber, supplying lumber at lowest cost. (4)—A perfected system of standardized manufacturing which reduces "quality" production cost to a minimum. (5) — Highest standards, rigidly maintained through three generations of service to the home-builder.



Morgan Fireplace
M 514



There is no added cost for Morgan-Quality

Write for copy of our current Price Supplement. Or mail coupon for prospectus describing "Building with Assurance."

"MORGAN-QUALITY"

STANDARDIZED WOODWORK

MORGAN WOODWORK ORGANIZATION

Morgan Sash & Door Company, Chicago, Ill.; Detroit, Mich.; Cleveland, Ohio
Morgan Millwork Company, Baltimore, Md.; Jersey City, N. J.; Greensboro, N. C.
Morgan Company, Oshkosh, Wis., New York City



Look for this mark on every Morgan Product



220



Get This 440-page Master Book on Home Building

"Building with Assurance" (Second Edition) contains the information you need to help you cut costs, save time and avoid mistakes.

"Building with Assurance"

indorsed by over 15,000 authorities

This great book shows page after page of homes of all types in colors—with floor plans. The home illustrated above, for example, with complete floor plans, will be found on page 39. In addition, you get help on room arrangement, interior decoration, floor coverings, lighting, heating, plumbing and landscaping.

Mail coupon for prospectus

"Building with Assurance" is not for general distribution. It is for builders and earnest home lovers. Our prospectus tells all about it—shows beautiful homes in colors, with floor plans. The prospectus is gladly sent to those who mail the coupon.

Address nearest office, Dept. T-9

Morgan Sash & Door Company, Chicago, Illinois
Morgan Millwork Company, Baltimore, Maryland
Morgan Company, Oshkosh, Wisconsin.

Gentlemen: I am a contractor, so please send me at once a copy of your beautiful prospectus which describes, "Building with Assurance," and a copy of your Current Price Supplement.

Name.....

Address.....

Town..... State.....



ATKINS

SILVER STEEL SAWS

GROWTH and SERVICE

*A Business Grows
Only As It Serves*

The Atkins Factories and Branch House Supply Depots illustrated on this page, indicate that this company has been *growing* and *serving* the trade successfully for over 68 years.

The enviable position we occupy, having our Main Factory at Indianapolis, the acknowledged center of distribution of the United States, and with *Other Factories* and *Saw Supply Depots* at important strategic distributing points, is assurance to carpenters, contractors and other saw users that we can serve them promptly and well with Saws, Saw Tools, Saw Specialties, etc., through their local sources of supply. Insist upon being furnished with Atkins Products which are everywhere known as

"THE FINEST ON EARTH"

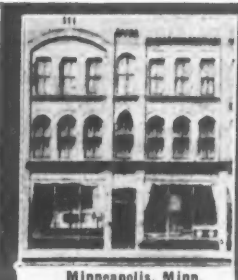
If you want to use the finest Saws, Saw Tools, Saw Specialties, Plastering Trowels, etc., that money and skill can produce specify ATKINS.

Enclose 35c for fine high grade nail apron and ask for useful souvenir and our book of facts, "Saw Sense."

E. C. ATKINS & CO.

Established 1857

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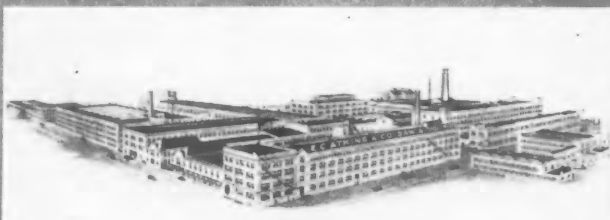
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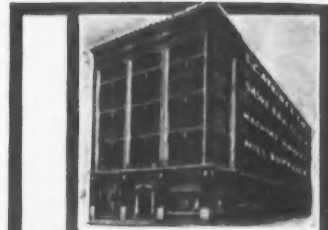
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Machine Knife Factory,
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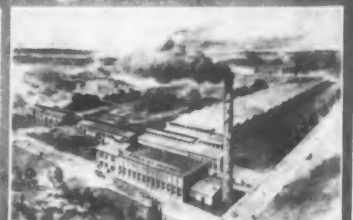
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BUILD HOMES THAT WIN PRAISE AND PROFIT!

How can builders make sure in advance that owners will be satisfied? How can builders help owners decide to build at once, without delay? How can the builder make each home so attractive that more customers will want his services? Here are almost 400 answers—and a blue print plan service that saves money for builders and owners.

Every builder knows that some people like one type of house, and some people want something entirely different. Some people like Colonial homes—others like the individuality of Spanish architecture. Some like frame or stucco—others, brick. Some like bungalows, others want two stories. Some are conservative—others want to "be different." And the builder who can satisfy them all—with homes which are truly good looking and true to good taste—can build not only houses, but a profitable reputation for himself.

You can satisfy every type of customer with the help which suggestions in Keith's Magazine give you. It is like talking over matters every month with an architect who has a national reputation for home-planning. For nearly 25 years Mr. Keith, the publisher, also

the President of Keith Corporation, Architects, has given his time to this work—he gives you the benefit of his experience through the pages of this magazine.

Get This Help

You will get 32 plans of small homes in each of the January, February, March and April issues—the months when spring building is at its height. In the 12 numbers you get almost 200 plans, with valuable discussions of new construction methods, application of building materials, new ideas in interior finish and exterior decoration—ideas worth hundreds of times the subscription cost.

Special Two-for-One Offer!

For a limited time only, we make you the following remarkable offer: To those subscribing for one year to Keith's Magazine we offer for the cost of mailing only, to send a copy of Keith's big De Luxe plan book—200 Beautiful Homes—a complete home builder's book handsomely illustrated with plans of 200 homes in the latest architecture. Gives you examples of all types of construction for the bungalow, cottage and two-story home.



MAIL THIS COUPON

KEITH'S, Dept. 123, 100 N. 7th St., Minneapolis, Minn.

☐ Send me Keith's Magazine for one year, also your 278-page De Luxe edition, "Beautiful Homes," postage prepaid, for which I enclose check [or money order] for \$3.25.

☐ Send me as above, C. O. D., for which I agree to pay the postman, upon delivery, \$3.00, plus a few cents postage.

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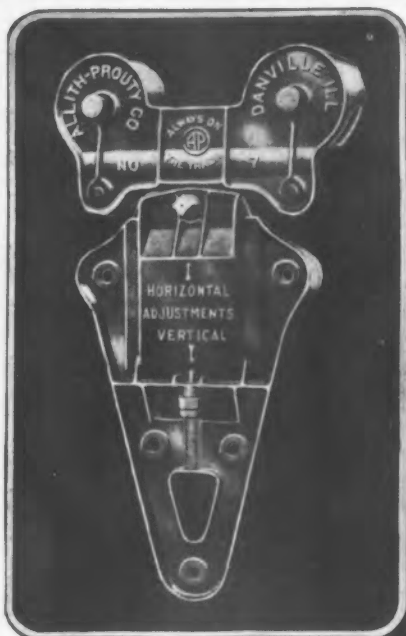
MAGAZINE

— on Home Building

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

ALLITH-PROUTY

Warehouse Door Hangers



No. 17

Many builders and architects who want "the right hanger for every door", specify Allith hangers and hardware.

The high carbon steel and malleable iron that goes into Allith designs insure long useful service, with maximum carrying weight for busy doorways.

Above is shown Allith No. 17 Warehouse Door Hanger for doors from $1\frac{3}{4}$ " to $3\frac{1}{2}$ " thick. Approximate carrying capacity 2,000 pounds.



No. 6

No. 6 double adjustable hanger is designed to accommodate doors from $1\frac{3}{4}$ " to $3\frac{3}{8}$ " thick with approximate capacity of 1,000 pounds.



No. 3

No. 3 Allith Fire Door Hanger—built of malleable iron with roller bearings. For doors $1\frac{3}{4}$ " to $2\frac{3}{4}$ " thick. Capacity of 1,000 pounds.



No. 68

No. 68 Hanger is shown above. For use with Allith No. 67 trolley track. Wheels are 3" in diameter—malleable and steel construction thruout.

Write for full particulars on any of the Allith designs, and be sure you have our new No. 91 Garage Hardware catalog.

"The right hanger for every door"

ALLITH-PROUTY COMPANY DANVILLE ILLINOIS

Door Hangers
Garage Door Hardware

Manufacturers of
Fire Door Hardware
Overhead Carriers

Rolling Ladders
Spring Hinges

Representative Jobbers Distribute A-P Products

"THE SIGN



OF QUALITY"



Home Buyers Know the Value of Cork Insulation

WHEN you can say "The walls and roof are insulated with Armstrong's Corkboard" your chances of selling the house are greatly increased. The buyer knows at once that it is a house built for comfort and economy.

Full page advertisements in such national publications as Saturday Evening Post, House Beautiful, House and Garden and The Small Home have told him why, as they have told hundreds of thousands of others who are planning to buy or build. He knows that a cork-lined house is warmer in winter and cooler in summer—that it takes a smaller heating plant and less fuel to keep it comfortably heated, and that it is worth more when on the market than houses of ordinary construction.

Line your house with Armstrong's Corkboard. It adds to your prestige as a builder as well as increases your profit. The cork-insulated house commands a higher sale price.

Armstrong's Corkboard is easily erected in any kind of construction. No furring strips or lath are needed. Armstrong's Corkboard is an ideal plaster base. It is rigid, moisture-and-vermin-proof, and a fire-retardant; it does not warp, swell nor shrink.

Write for full information about cork insulation. No obligation is involved. Address Armstrong Cork & Insulation Company (Division of Armstrong Cork Company), 196 Twenty-fourth Street, Pittsburgh, Pa. Canadian office, McGill Building, Montreal, Quebec.

Branches in the Principal Cities

Armstrong's

Nonpareil

Corkboard Insulation

for Residential, Commercial and Industrial Buildings



THIS SAW RIG SAVES BUILDERS TIME, TROUBLE, WORK AND WAGES

\$25⁰⁰-
BRINGS IT TO YOU

The Days of Hand Sawing for Progressive Contractors are Over

Why pay out of the profits that should jingle in YOUR OWN pocket, wages to unnecessary help—waste time that means money—expend your vitality, energy, strength, in back-breaking hand sawing, which, when equipped with this simple, inexpensive Portable Saw Rig, you eliminate, and accomplish in ONE hour what formerly took you TEN? Facts are facts. Old methods are costing you TOO much. Why continue in the old rut—with the old tool box on your back, when for 25 cents a day you can increase your prestige and income five-fold?

FREE TRIAL

The "JIFFY" SAW

Builder's Complete

The "Jiffy" is the simplest, most economical, most efficient, of any Saw Rig regardless of capacity. Rigid all-steel table, size 24x32 in., and frame; compact, simple, air-cooled power unit; mounted on rubber tired wheels that make it easily moved to the desired place on the job.

Take It Anywhere You Saw

You take it anywhere—up to the second floor or down in the basement. Just step on the lever and it is raised onto its rubber tired wheels and moved to any convenient place with ease and facility; weighs only 225 lbs. This feature alone makes it adaptable to the job at hand.

Cross-Cuts, Rips, Miters

You will find the "Jiffy" a "bear" for work. Comes fitted with an 8-in. all-purpose saw that cross-cuts, rips, miters with equal facility and efficiency. Takes any material up to 1x15 and 2x12 in., which is ample capacity for most any size job. With this saw you can work up 8,000 to 10,000 feet of lumber a day or 500 cuts an hour on rafters, joists and similar work.



Portable Gas Engine Saw Rig

Its distinguishing feature is the saw, which operates on the swing method—moving THROUGH the lumber instead of the lumber through the saw. Quicker, easier; no jamming of the blade. Starts easily. Runs smoothly; 10 hours on 1 gallon of gasoline.

For Big or Little Jobs

No job is too big or too small for the "Jiffy." You will use it all day for cutting rafters, joists, sheeting, siding, flooring, or whatnot. You will find much work it can do faster and better.

Powerful Motor

Gasoline Motor — $\frac{3}{4}$ horse power, single cylinder, 4 cycle.

Ignition — Built-in fly wheel magneto. Moisture proof.

Carburetor — Set jet type. Extremely simple.

Cooling — Air current.

Starting — Lever style.

"Step on it" and it's off.

Fuel Capacity—1 gallon.

The "Jiffy" Saw Will Work For You For 25¢ a Day

Doesn't it fairly make your arm ache and your poor back wince, when the day is done, to look at that little pile of saw dust under your trestles and what it represents—10 hours of back-breaking labor. Just think! For only 25 cents a day—the price of a gallon of gasoline and a little oil—you can save 85% of the hand-saw labor on an ordinary job, save 12% of the total cost to the owner, and do TEN TIMES as much work, and still be unfatigued when the day is spent. And the only accountable reason for continuing hand sawing is the long established practice, nothing more. What you formerly did by "elbow grease" can now be done economically by gasoline. You derive the difference. Think it over.

Investigate! This Means Much to You

So confident are we that you will find the "Jiffy" indispensable that we offer to send it to you on 10 Days Free Trial. If then you are dissatisfied you may return it and get your initial payment back. You take no risk. Sign and mail the coupon for our free booklet "Sawing With Elbow Grease or Gasoline." It gives facts and figures that will open your eyes to the savings and increased profit that comes from modern equipment. This is your opportunity to take a big step forward in your profession—to advance yourself in your own estimation and in the opinion of the building world. Don't pass it up. It means much to you.

621 Olive St. **A. S. Aloe Co.** St. Louis

FREE

SAWING
WITH
ELBOW GREASE
OR
GASOLINE?

MAIL COUPON NOW!

A. S. ALOE, 621 OLIVE ST., ST. LOUIS, MO.

Without obligation, send me your FREE book, "Sawing With Elbow Grease or Gasoline." Also full particulars about the "Jiffy" Portable Saw Rig and details of your easy payment plan.

Name.....

Address.....



THE transformation that Face Brick Veneer can make in an old house is strikingly illustrated by these two pictures of a residence at Streator, Illinois. Besides beautifying his home, the owner has materially increased the value of his property, and has eliminated future repair and painting bills.

Increasing the Investment Value of Old Frame and Stucco Houses

HOME owners everywhere are beginning to realize that it is expensive to keep up frame and stucco houses. The constant expense of painting and repairs, and their depreciation from the day they are built make them a much less desirable investment than a Face Brick house.

The way out for owners of frame and stucco houses is to veneer the old house with Face Brick. At one and the same time they eliminate needless future expense,

make the old home more attractive and increase the value of their investment.

Many contractors are finding it pays to suggest such remodeling jobs to their customers. Theatres, banks, stores and churches offer as big a field as homes.

Our free booklet, "A New House for the Old," tells the contractor all he wants to know about Face Brick veneering, and also gives complete instructions for doing a good job. Send for a copy today.

THE AMERICAN FACE BRICK ASSOCIATION

1763 Peoples Life Building • Chicago, Illinois



Nelson

MASTER • THATCH • ROOF

THE new Nelson Master Thatch Roof is designed according to specifications of some of America's leading Architects.

Since its completion it has the approval of a great many leading members of the Architectural profession as to color, design, quality, coverage and general artistic beauty.

Beautiful, permanent, subdued tones of Nelson natural rock colors are used in finishing Master Thatch—pleasing to the eye and lending distinction to any building when properly

selected. Hard and fast lines are completely eliminated. Thus a beautiful artistic effect is achieved together with a covering that is fire-resistant and is fabricated to outlast the building.

Master Thatch should not be confused with so-called "strip thatch" as it is made up of individual, reversible shingles with artistically curved edges, making it easy to lay. It supplies 5 ply coverage.

Nelson Master Thatch is the very roof the Architectural profession has so long desired but which until now has not been available.

The B. F. Nelson Manufacturing Co.

Minneapolis, Minn.

The building shown in this advertisement is reproduced from an original design by

Louis Boynton Bersback, Architect

Ralph Fowler Koch, Associate

411 West 15th Street, Minneapolis, Minnesota





The Endless Stream

DOWN the long sluiceways on the mountain side rush the giant Shevlin Pines of the western timber country. The constantly running stream of logs seems never ending. Each log hurries along as if it heard the call of the builders and was itself anxious to supply the ever increasing demand for pine of Shevlin quality. Whenever you need lumber which must endure, be sure to specify Shevlin Pine.

Shevlin, Carpenter & Clarke Company

900 First National-Soo Line Bldg., Minneapolis, Minn.

SHEVLIN



LOG MARK REGISTERED

Nelson

MASTER • SLAB • ROOFS

BEAUTIFUL as an old tapestry, durable as the quarried rock from which it is made, a Nelson Master Slab Roof embodies both artistry and scientific construction.

Pride of ownership lies in its skillfully blended colors, the economy of lasting protection in its sturdy fabrication.

We shall be very glad to receive your inquiry for color samples and descriptive literature.

The B. F. Nelson Manufacturing Co.
Minneapolis, Minn.



Notice the beautiful lines of a Nelson Master Slab Roof. The colors become softer and more harmonious with the changing seasons. Write for free samples of the six basic colors, moss green, autumn brown, Spanish red, velvet black, purple or maroon.

Through an aim to make Andersen Frames of greatest benefit to architects, builders, dealers and home owners, the Andersen Factory has become the largest in the world.

Write for latest information on Andersen Standard Frames, stating whether you are an architect, builder, dealer or prospective home owner.



Look for this trademark—it appears on every Andersen Frame.



Builders prefer Andersen Frames

We're thankful that our product brings bouquets instead of brickbats.

Mr. Frank Konfirst, Contractor, 2011 South Alport Street, Chicago, writes that he finds Andersen Frames satisfactory in every way and because of the genuine White Pine used in exposed parts they outlast any other frame.

We'll gladly show you in a booklet why builders feel that way about the Andersen Frame.

Andersen Lumber Company
Bayport, Minn.

Andersen **FRAMES**



Laid Like Cement

**Everlasbestos is the quality
Composition Preferred by
Builders and Owners**

Laid like cement $\frac{3}{8}$ " to $\frac{1}{2}$ " thick.
Hardens in 24 hours.
Can be laid in one piece with cove base or
wainscot.
Bonds with any foundation.
Good man can lay 200 sq. ft. per day.
Valuable Instruction Manual free with order.
Colors, Red, Buff, Gray.
Shipped in bags ready for use. Shipping
weight $4\frac{1}{2}$ lbs. per sq. foot.

Laying Everlasbestos Brings Regular Profits

Many Buyers— Steady Income

Your profit from laying Everlasbestos is sure to be big this year and every year, because this is an all-year-round business and because there are so many buyers of this flooring—stores—offices—churches—hospitals—schools—theaters—public buildings—apartments and homes for their kitchens, bathrooms, sunporches—factories for their washrooms, restaurants, offices.

Just As Good Laid Over Old Floors

Everlasbestos is every bit as durable and good looking laid over old floors as installed

in new buildings. There is no limit to your opportunities for permanent, ever-growing, most profitable business with Everlasbestos. Every Everlasbestos customer is a booster for you and your business, because this flooring is smooth, seamless, easily cleaned, sanitary, handsome and practically everlasting. It is tough, fibrous, quiet, resilient and easy to the tread. Three attractive colors—red, buff and gray.

Any workman who can use a trowel can lay Everlasbestos—it's just as easy as putting down cement. We furnish a complete and readily understood Manual of Instructions.

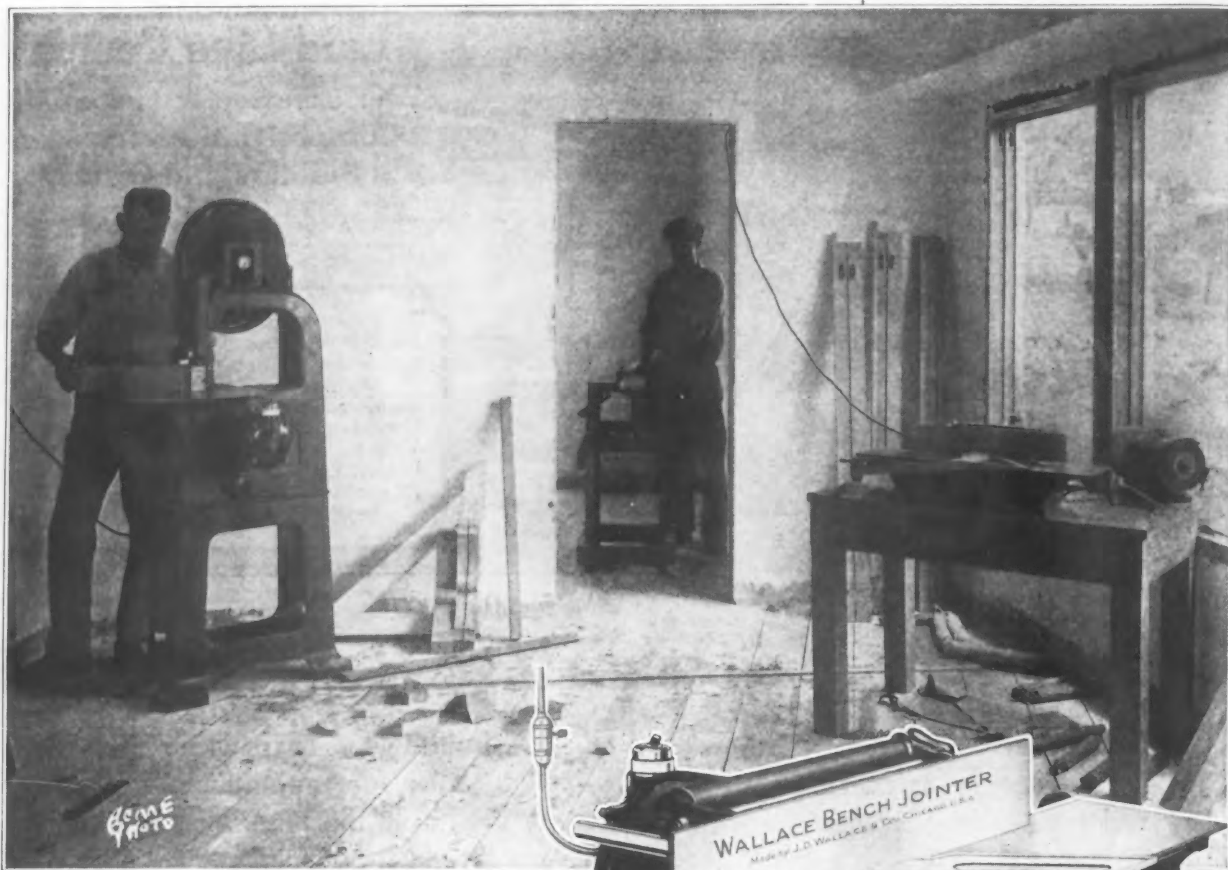
Investigate this every-day-working proposition that assures you a steady and constantly increasing income. Write now for Everlasbestos catalog, free sample and complete information.

EVERLASBESTOS FLOORING CO. ROCHESTER, N. Y.

Dept. B.

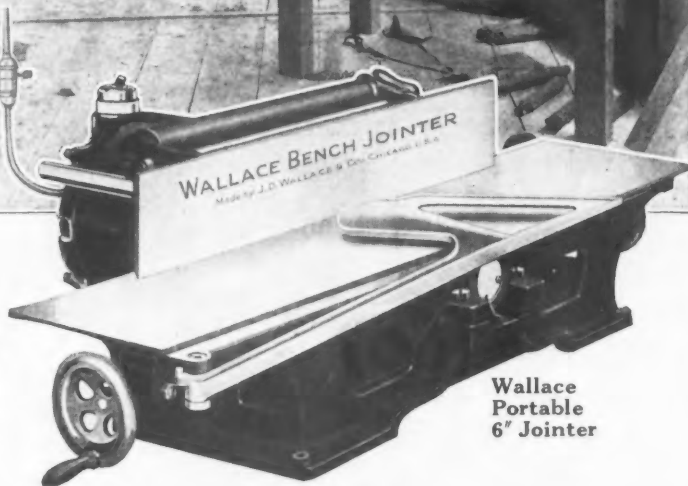
95 North Street.

Everlasbestos Flooring



Cashing in out in Kansas

C. A. Jackson, contractor, of Kansas City, Kansas, is one of the thousands of carpenters and contractors who appreciate the saving to be achieved by taking Wallace Portable Machines right out to the job. This illustration shows Wallace 16" Band Saw, Wallace Universal Saw and Wallace 6" Jointer helping to cut costs on one of Mr. Jackson's houses.



Wallace
Portable
6" Jointer

Wallace
PORTABLE MACHINES

Wallace Universal Saw
Wallace 16" Band Saw
Wallace Plain Saw
Wallace 6" Jointer
Wallace 4" Planer
Wallace 6" Lathe
Wonder Disc Sander
Wonder Spindle Sander
Wallace Glue Pot,
automatic heat control

Things That Sell Homes

USE Wallace Portable Machines to build into your houses the countless little comfort features that make homes. Such things as trellis fences, pergolas, arbors, and trellises outside, and cupboards, broom closets, clothes chutes, built-in ironing boards, and breakfast nooks can be built from waste material at little added cost on Wallace Machines, and they add tremendously to the selling values of homes.

Accurate and Speedy

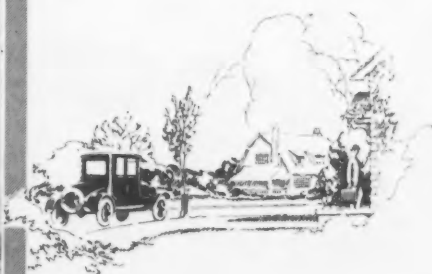
All Wallace Machines are precision built for absolute accuracy on large or small work. Their speed is a large factor in cutting down costs and speeding up completion dates, yet they are accurate enough for the finest cabinet work and interior finish. Drawers, cupboards, French windows, etc., can be made on the job.

Convenient and Economical

Wallace Machines can be easily taken out to the job and moved about as need arises. They are all direct-motor-driven, no belts to slip and dissipate power. And a full set of Wallace Machines can be bought for little more than the cost of one large machine of similar high grade construction.

Send for Catalog 402D and Price List.

J. D. Wallace & Co. 136 So. California Avenue
CHICAGO, U. S. A.



There's a growing recognition of the importance of weatherstrips. It used to be the general opinion that storm sash did everything that could be done to keep the weather out. Cracks around windows and doors were overlooked. Now people KNOW they must have weatherstrips. Men who sell them (and particularly Ceco Weatherstrip Agents) have scores of selling points.

Dignified work—your own hours—your own methods—your own boss

Work that you thoroughly ENJOY, besides a business that PAYS

The lately improved Ceco "Slide-Lock" STRIPS

do everything that any other strip will do, and besides are COMPLETELY CONCEALED.
"Keep the Weather Out."
Keep out dust, dirt, sand and soot.

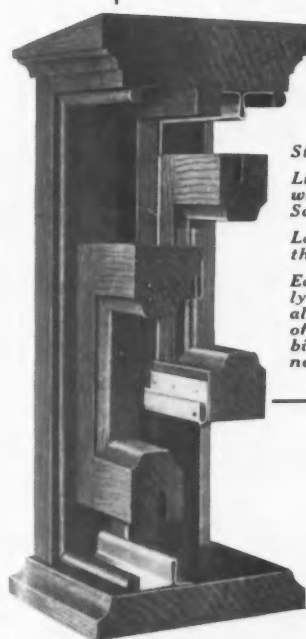
Watertight
Slide easily.
Locked tight
when shut.
CONCEALED
and not
unsightly.

Stop rattle.

Lighten house-
work.
Save fuel.

Last as long as
the building.

Easily and quick-
ly installed in
all types and sizes
of structures—
big, little—old or
new.



Weatherstrip Men Everywhere!

Don't be satisfied with anything but the BEST. Your easiest business is that which will come from recommendation of entirely satisfied users. We invite comparison of Ceco (improved) strips. You may just as well have the CREAM of the business. Write Us.

demonstrating, selling and
installing the new, improved

Ceco

METAL WEATHERSTRIPS

"Keep the Weather Out"

This
is the way our
agents write us:

From J. H. Robert:
"The exclusive features of Ceco Metal Weatherstrips place them in a field far ahead of competition. They have received the unstinted praise of Architects, Contractors, and Home Builders. We take pride in handling an article of such merit."

Whether you've had any experience in weatherstrip work or not, send for our proposition to you. Learn all about the Ceco line—about how we are helping others and how we will help you.

Little or no investment required. All you do is change over to this pleasant occupation, familiarize yourself with Ceco Metal Weatherstrips and how to install them, and have your OWN business. It's easy with our help.

Don't be satisfied to grind along. You owe it to your family or to YOURSELF to step ahead. Delay simply means "postponement or hindrance." Start TODAY—NOW!

**Get the Ceco Proposition—FIND OUT
SEND THE COUPON!**

CECO WEATHERSTRIP COMPANY

Dept. 19, 1926 S. 52nd Ave., Chicago, Illinois

Without obligation send me the Ceco Weatherstrip proposition.

I am an experienced weatherstrip man.

I have never sold or installed metal weatherstrips.

My present occupation is.....

NAME.....

ADDRESS.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Use it at once! No lime.
No slaking. No wasteful waiting. Use BRIX-
MENT mortar as soon as it's mixed.
Smoother, easier and quicker to spread.
Try it and know why more BRIX-
MENT is being sold today than ever.

BRIXMENT

is made according to a definite, invariable formula that insures a wall of maximum and uniform strength at greater economy of time, labor and material. Will not fade mortar colors. Sold through dealers. If there is no BRIXMENT dealer in your town, write us. Louisville Cement Company, Incorporated, Louisville, Kentucky.

for Better Masonry

BRIXMENT

AROUND THE FAMILY TABLE



Pay No Money to Strangers!

Subscription Crooks Pretend to be Representing American Builder

THE AMERICAN BUILDER employs no traveling subscription agents. No one is authorized to solicit your AMERICAN BUILDER subscription or to take money from you for the AMERICAN BUILDER.

It has come to our attention that a number of smooth-talking subscription men, "sheet writers," are showing copies of the AMERICAN BUILDER to get the attention and confidence of builders and are taking their money, giving a receipt which purports to be issued by the AMERICAN BUILDER, or a receipt, which, on careful reading, actually calls for the delivery of some other periodical not the AMERICAN BUILDER. This, of course, is fraudulent and a misrepresentation. These canvassers keep all the money and the subscriber is an innocent victim.

Almost every day we have complaints from builders who have been fooled into paying their money to some stranger who promised, in return, to send them the AMERICAN BUILDER. We don't want to see any of our readers victimized. We are doing all we can to run down each incident of this kind that is brought to our attention, and it is a satisfaction to know that some of these rascals are being apprehended and put behind prison bars. One of them has just been sentenced at Hamilton, Ontario, for two and one-half years.

The safe rule to follow is not

HAD BAD RECORD



Subscription agent known as W. L. Hitchens, G. W. H. Ball, W. H. Sibley, etc., who was sentenced to two years and six months by Magistrate Jelfs in police court to-day, on five charges of theft.

Clipping from the Hamilton (Ont.) "Herald" of Aug. 5, 1925. This subscription taker will be recognized by some of our subscribers in England and Scotland as the "E. Matthews" who was relieving them of £1 apiece about a year ago—and keeping the money. He also used the names of W. H. Lander and E. Lane.

to pay subscription money to a stranger, but to deal direct with the publishers of the AMERICAN BUILDER. You can send bank check, post office money order or currency direct by mail to the AMERICAN BUILDER, 1827 Prairie Avenue, Chicago, and be certain that your subscription will be properly entered. This is better than handing over good money to a stranger equipped with forged credentials and misleading or fraudulent receipts.

Of course this does not apply to our readers who have occasionally recommended the AMERICAN BUILDER to their brother builders and have organized a little subscription club among the builders in their own community. We are very grateful to these good friends who have recommended the AMERICAN BUILDER and as an accommodation to their friends have sent in subscription orders for one or more in addition to their own. These men are not *strangers*, however; so the advice still holds good—**PAY NO MONEY TO STRANGERS!**



HOLLAND, MICH.

AMERICAN BUILDER: July 15, 1925.
Your de luxe copy of the June AMERICAN BUILDER has come and is very attractive indeed. It does contain a great deal of useful information, too.

HOLLAND FURNACE COMPANY,
C. D. Karr, Advertising Mgr.

CHICAGO, ILL.

AMERICAN BUILDER: July 14, 1925.
I cannot help but congratulate you on this very beautiful and informative volume, and shall gladly give it a place in our reference file.
NORTH WESTERN EXPANDED METAL CO.,
E. Drage Browne, Adv. Mgr.



Bishopric Row—Bishopric Stucco over Bishopric Base in this row of Rochester, N. Y., houses.

The Beauty of Bishopric in Color and Texture Means Increased Business for the Builder, Because Every Job Sells Another

Economy, durability, permanence, beauty—all of these are possible when you build with Bishopric.

Houses built of Bishopric delight the eye, please the purse and make good in every way from low first cost and minimum of upkeep, to added sale value.

Briefly, *Bishopric Stucco*
over *Bishopric Base*



Bishopric Base is shipped in rolls 100 square feet to the roll. It is easily handled, quickly cut to desired size and there is no waste.

Bishopric Stucco is packed in air-tight metal drums preventing deterioration and loss, either in transit or storage, or on the job.

INSURES

Least cost for labor
Least cost for material
Speed in construction
Lowest maintenance cost
Strength—stability—endurance

IS

Waterproof
Weatherproof
Fireproof
Rich in insulation

You, as a builder, know what every one of these qualities means to your profit, to the satisfaction you wish your client to experience, and to your success as a builder of STRUCTURES THAT SATISFY.

Therefore, you need to know ALL about Bishopric Stucco over Bishopric Base. It is a wonderful story, this stupendous success of Bishopric products. Let us tell you ALL about it.

Write for Bishopric Booklet "For All Time and Clime"—beautifully illustrated—working details—specifications—let us help you with your Building Problems.

Bishopric is Sold by Dealers Everywhere

The BISHOPRIC MANUFACTURING CO.
8 ESTE AVE. CINCINNATI, OHIO
NEW YORK CITY NEW YORK LOS ANGELES CALIFORNIA OTTAWA CANADA

BISHOPRIC STUCCO *over* **BISHOPRIC BASE**

"A Complete Wall Unit for all Time and Clime"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Formerly AMERICAN CARPENTER AND BUILDER

Why the Building Activity?

HOMES valued at \$13,000,000 have been purchased by 3,400 employees of the Bethlehem Steel Corporation under that company's home owning plans, according to the current issue of the Bethlehem Review. In commenting on this fact, E. G. Grace, president of the company, expressed some views which are most interesting in the light of numerous prophecies that have been circulated to the effect that the housing shortage has been overcome and that building operations are due to take a decided slump. Mr. Grace said in part:

"Since the World War building operations throughout the country have increased from 3½ billions of dollars in 1919 to over 5 billions in 1924. Delayed building has been credited for most of this activity, but it is possible that new factors have now entered the building industry which are just as important as delayed building held over from the war.

"Increased buying power during the past ten years has made it possible for people in this country to realize to an increasing extent the desire to own their homes. Home building has accounted for nearly one-half of the building operations during the past year. It is not only a question of housing but of more and better housing. A demand has grown for additional space, for modern conveniences, for room for gardens and space for children to play in safety. New houses have been, and will be, required to meet this demand.

"The conditions are of such a fundamental nature that building activity with its accompanying demand for steel products and other manufactured goods of all kinds should continue for some years to come."



Contractors License Law

BUILDERS all over the country who are interested in the question of licensing contractors will now have an opportunity to study the effects of such a measure. On May 10, a license law became effective in the state of North Carolina. The North Carolina law applies to persons, firms or corporations undertaking to construct bridges, highways, buildings or other structures of \$10,000 valuation or over. The license board consists of five members appointed by the governor. Licenses run for one year. Violations of the law may be punished by a fine of not less than \$500, or imprisonment for three months, or both.



Standard Bidders Questionnaire

A METHOD of judging the ability of contractors to handle construction activities has now been made available and should receive the support of all who are interested in construction work. Laws governing public contracts usually provide that such contracts shall be awarded to the lowest responsible bidder but there is no generally recognized interpretation of the term "responsible" and it is commonly accepted as meaning any bidder who can furnish a surety bond. That furnishing a surety bond does not necessarily indicate responsibility is well

known. The surety companies have not presumed to guarantee that the bidders whom they bond are responsible but merely that their contract obligations will, by some means, be fulfilled.

In response to the need expressed by engineers, architects and public officials, for some means of gauging responsibility the Joint Conference on Construction Practices undertook to prepare a comprehensive uniform questionnaire covering the skill, integrity and equipment of bidders.

The forms which have resulted from this undertaking are now ready for use and should be adopted in the taking of bids. By the use of these standard forms it is hoped to go far toward removing the competition of irresponsible and dishonest concerns which often enter low bids, insufficient to cover the actual cost of the construction either through lack of ability to make an intelligent bid or with the intention of taking a profit by the skimping of work.

The forms consist of a financial statement which indicates the bidder's financial standing, an experience questionnaire designed to reveal his past record and a plan and equipment questionnaire giving information with respect to his qualifications for undertaking the project.



Record Cement Production

PRODUCTION of portland cement in May was the greatest on record while shipments were the highest ever recorded for any May and have been exceeded in only three other months. The total production for May was 15,503,000 barrels as compared with 13,777,000 barrels for May, 1924, and 13,807,000 barrels for April, 1925. Thus there was an increase for the month of 1,696,000 barrels over April and 1,726,000 barrels over May, 1924. Shipments for the month totaled 16,735,000 barrels as compared with 14,394,000 barrels for April and 14,551,000 barrels for May, 1924.



Big July Construction

JULY construction contracts reached the highest July total on record, according to the F. W. Dodge Corporation. Contracts in 36 states (which include seven-eighths of the total construction volume of the country) amounted to \$529,000,100. In only two previous months has this total ever been exceeded, April and June of this year. The decrease from June was only two per cent, while the increase over July of last year was more than 53 percent. There is usually a fairly considerable seasonable decline in July.

The July record included: \$224,712,500, or 42 per cent of all construction, for residential buildings; \$72,743,400, or 14 per cent, for public works and utilities; \$67,165,900, or 13 per cent, for commercial buildings; \$58,148,000, or 11 per cent, for industrial plants (including a 30 million dollar power development in Ohio); and \$57,572,000, or 11 per cent, for educational buildings (including large building projects for Harvard, Yale and Pittsburgh Universities).

July figures brought the year's total of construction started to date up to \$3,189,173,800, an increase of nearly 20 per cent over the first seven months of 1924. At the end of June this year was only 15 per cent ahead of last year.

Autocar Trucks

Sturdy - well-built - powerful



Four of the five Autocars operated by the T. C. Davis Building Supply Co., Baltimore, Md.

Mr. Henry S. Davis of the T. C. Davis Building Supply Co. recently wrote the Baltimore Autocar Direct Factory Branch as follows:

"Our Autocars have convinced us that for the type of work we require of trucks, your unit is the ideal equipment.

"We recently supplied material to the Roland Park Company for their Homeland Development. All kinds of conditions were encountered, but our trucks delivered the goods on the job.

"We are enthusiastic about your Direct Factory Branch service, especially its twenty-four hour feature, which enables us to have small adjustments and emergency work done without loss of working time."

The Autocar Company, Ardmore, Pa.

ESTABLISHED 1897

Direct Factory "Autocar Sales and Service" Branches or Affiliated Representatives in

*Albany	*Buffalo	*Detroit	*Los Angeles	*Orlando	*San Diego	Tampa
*Allentown	*Camden	*Erie	*Memphis	*Paterson	*San Francisco	Trenton
*Altoona	*Charlotte	*Fall River	*Miami	*Philadelphia	*San Jose	*Washington
*Atlanta	*Chester	*Fresno	*Newark	*Pittsburgh	*Schenectady	West Palm Beach
*Atlantic City	*Chicago	*Harrisburg	*New Bedford	*Providence	Scranton	*Wheeling
*Baltimore	*Cleveland	*Indianapolis	*New Haven	*Reading	Shamokin	Wilkes-Barre
*Binghamton	*Columbus	*Jersey City	*New York	*Richmond	*Springfield	Williamsport
*Boston	*Dallas	*Lancaster	*Norfolk	*Rochester	*St. Louis	*Wilmington
*Bronx	*Denver	*Lawrence	*Oakland	*Sacramento	*Stockton	*Worcester
*Brooklyn					*Syracuse	York

* Indicates Direct Factory Branch

Autocar

gas and electric trucks

EITHER OR BOTH - AS YOUR WORK REQUIRES

Building Against Earthquakes

Some Lessons Learned from the Santa Barbara Disaster

By HOWARD C. KEGLEY

THE occurrence of earthquakes of varying intensity in several parts of the United States and in other parts of the world during the last few months, has given rise to the belief, in the minds of many persons, that earthquakes are becoming more prevalent. Scientists say that more than 10,000 earth tremors were recorded in the world last year.

Perhaps it is not a fact that quakes are becoming more frequent, but anybody will admit that they are much more frequent than we care to have them. It is quite likely that they are no more numerous than they have been for centuries past, but that better facilities for detecting them have been provided, and that their visitations have been given greater publicity through the medium of the press, the telegraph and the radio.

It is a fact, however, that wider knowledge of earth quake conditions has given rise to a popular demand for construction work which will be more or less resistant to earth tremors and at the same time give the public a reasonable degree of safety when quakes occur.

Since the beginning of time it has been a generally



Edwin Bergstrom, a Leading Los Angeles Architect, Whose Report on the Effects of the Santa Barbara Earthquake Forms the Basis of Much of This Article.

accepted theory that experience is the teacher. Santa Barbara, the beautiful channel city of the coast of California, is just now conducting a summer school of experience in which contractors, builders and architects are learning how not to construct buildings.

Here is a city, in a definitely established earthquake zone, where, according to some of the best authorities in California, many buildings were erected without the slightest consideration of earthquake possibilities. Santa Barbara adopted a so-called earthquake building ordinance two or three days before her recent quake occurred. Before that the city got along with an old building code which met the requirements of the state house commission, and passed muster in regard to lighting, heating and ventilating, but no particular effort had ever been made to fortify buildings against heavy thrusts such as are suffered when movements of the earth's crust occur.

J. J. Backus, building inspector of the City of Los Angeles, who has spent much time in studying the effect of the recent earthquake upon Santa Barbara's buildings, charges most of the damage to "poor construction." Under this heading he lists the careless



Effect of the Earthquake on a Three-Story Hotel Building Where no Brick or Tile Cross-Partitions Protected the Structure Against Side Thrust.

pouring of concrete, the use of too much lime and not enough cement in brick mortar, failure to use enough anchor rods and put them in properly, and the utilization of beach sand for mortar and concrete work.

This latter objection is also raised by Edwin Bergstrom, one of the foremost architects in Los Angeles, a member of the American Institute of Architects, twice president of the Southern California Chapter of the American Institute of Architects, and now president of the Allied Architects' Association of Los Angeles.

In the opinion of Mr. Bergstrom, beach sand is unfit for use in building construction for the primary reason that it is too smooth. Subjected to incoming and outgoing tides, the sand gets polished more or less, and loses the sharpness which is necessary to properly tie cement and mortar together.

Another glaring fault in construction work at Santa Barbara, as well as at Inglewood, and at San Jacinto and Hemet, Calif., where quakes of varying intensity have been felt in recent years, has been the failure to keep brick and tile work wet for a sufficient length of time to let the binding material set thoroughly.

Mr. Bergstrom asserts that one of the chief construction sins of the west, where conditions are in certain seasons hot and dry, is the failure to handle cement and mortar properly. After many earthquakes that have occurred in this country it has been observed that the bricks which had been used in facing buildings had tumbled down in great heaps, a majority of them being almost as clean as the day they were laid. The obvious thing being that the mortar did not stick to the bricks.

This has been due in some cases to poor sand, in others to an excessive amount of lime in the mortar, and in most cases to the fact that the bricks or tile were not kept wet while the binder was setting. It frequently happens that the contractor on a brick job uses beach sand because it is cheap, throws too much lime in the mortar because lime may be cheaper than cement, and in his haste to complete the job at a low labor cost only requires his workmen to turn the hose nozzle on the pile of bricks and sprinkle them down a little as the work on the walls progresses.

Mr. Bergstrom's contention is that the bricks should actually be soaked immediately before being used, and that they should be frequently sprinkled while lying on



Showing What Happened to an Addition Built Onto One Building Without Any Visible Effort to Tie the Two Units Together. The addition was completely demolished.

the scaffold. Beyond this, the work should be kept wet for several days. He strongly urges the use of cement mortar instead of lime mortar, and insists that it should be kept wet enough to let it cure normally.

Building Inspector Backus advocates the use of a considerable amount of cement in lime mortar, and agrees that the bricks should be thoroughly soaked.

Another fault seen at Santa Barbara and other cities is the failure to use anchor rods in the proper manner, to tie brick store fronts in.

"In many cases of this sort, in Santa Barbara, where anchor rods were used—and I must say that in a large number of instances they were conspicuous by their absence—the anchors pulled out of the brick, exercising no tying power whatsoever," says Mr. Backus.

He says that in such work the anchor rods should project through the front of the brick facing and have sizable washers or S-shaped anchors on the ends of them, so they will exercise the maximum tying power.

Mr. Bergstrom points to one Santa Barbara structure—a hotel—which suffered greatly from the jar. This building, he says, was put up with walls 150 feet long without a single cross wall to support them. He asserts that the brick came down clean, with little if any mortar on them.

It is his belief that Class C buildings of brick and wood construction should not be carried more than three or four stories high, and that they should be tied clear through the building with anchor rods, should be tied at each partition and floor, and should have bands running entirely around the building, so that the stress upon unsupported lengths of brick wall will be lessened.

He expresses the conviction that heavy overhanging cornices or ornaments constitute poor practice, because he is convinced that they are always likely to fall, when tremblors occur, on account of swaying.

"Some of us have learned, from Santa Barbara's lesson, that we are not going to cut any more elevator or ventilator shafts through the main lines or thrusts of our



The Heavy Adobe Walls of the Old Santa Barbara Mission Made This Building More or Less Rigid and Only the Towers Were Wrecked by the Quake.



This Shows How Brickwork Sheared Away and Lack of Cross-Partitions and Brace-Rods Allowed the Building to Literally Pull to Pieces. The offset in the word "California" indicates the extent of the sway.

buildings," says Mr. Bergstrom. "We will arrange the masses of our buildings so they will more or less counter-balance each other, and where it is impossible to do that we will provide some place where the structure can crush and at the same time leave the columns and girders intact. Crushing in such a manner entails the minimum of damage and low repair costs.

"Builders in Southern California are quite well agreed that whatever the construction may be, if the building is properly designed and tied together in accordance with normal practice, it should withstand the strain of earthquakes such as have been experienced in the United States.

"One way to fortify a building against earthquakes is to build it so rigid that it will move as a unit when the ground moves," says Mr. Bergstrom. "In erecting tall buildings I believe that they should be made absolutely rigid up to five stories, and flexible from that point upward, so that in the sway they can crush at some point inside—perhaps at the partitions.

"Another way is to design the entire building so that it will sway. Build the partitions of hollow tile, brick or any other material which will permit them to fail if necessary. If they collapse they can easily be replaced. The



Temporary Bracing to Prevent a Heavy Cornice from Falling Into the Street. Cornices of this sort are dangerous in quake regions.

"All buildings should be braced against side thrust by means of substantial dividing walls, in both directions. No brick work should be laid in any wall unless a good percentage of cement is added to the lime mortar."

Mr. Backus says that the Santa Barbara shake, which wrecked a business street many blocks long and did perhaps \$8,000,000 to \$12,000,000 damage, should convince people in all parts of the country that it will pay them to spend a little more money on design and construction, and get better buildings. He thinks that if 25 percent more money had actually been put into the buildings at Santa

Barbara the repair bill would have been reduced to an enormous extent.

"It is as long as it is short," he declares. "You can build poorly, carry earthquake insurance, which is expensive as a rule, and lose your building, together with the income from it, in the event of a quake; or you can spend a little more and have a small repair bill in the event of a tremor."

Bergstrom tells of three buildings in Santa Barbara, which he designed in accordance with the Los Angeles building ordinance, and which came through the shake unscathed. He tells of two others, designed in the same manner, but which he was asked to re-design in accordance with some other building ordinance, which the contractors told the owners would not require as much steel as the Los Angeles specifications called for. These two buildings, Bergstrom

(Continued to page 141.)



The First National Bank, the Concrete Columns of Which Stood Intact While the I-Beam, Not Properly Tied, Fell Off.

Prize Winning Basement Plans

Results of a Very Interesting Architectural Competition

HITHERTO the basement of a house has been little more than a stoke hole, rendered useless for almost all other purposes because of space taken up by the heating plant and coal storage with its resultant smoke, soot and ash. Laundry and fruit or vegetable storage space form about the only exceptions to this wasteful rule.

The Peoples Gas Light and Coke Company of Chicago recently set out to try to salvage basement space and make it attractive and useful as living quarters by offering a prize to Chicago architects and draftsmen for the best designed modern basement in which beauty and utility would be the keynote of design. The importance of solving this problem is emphasized when it is remembered that the basement area of a bungalow is equal to the area of the living quarters. In a two-story house it is one-third of the available area, and though only used for eight months of the year by the heating apparatus, this condemns the entire basement, as far as "livable" conditions are concerned, for the entire year.

The reclamation of basement storage space into habitual parlors and rooms is made possible by the installation of a gas-fired central heating plant. The competition for the prize arrangement

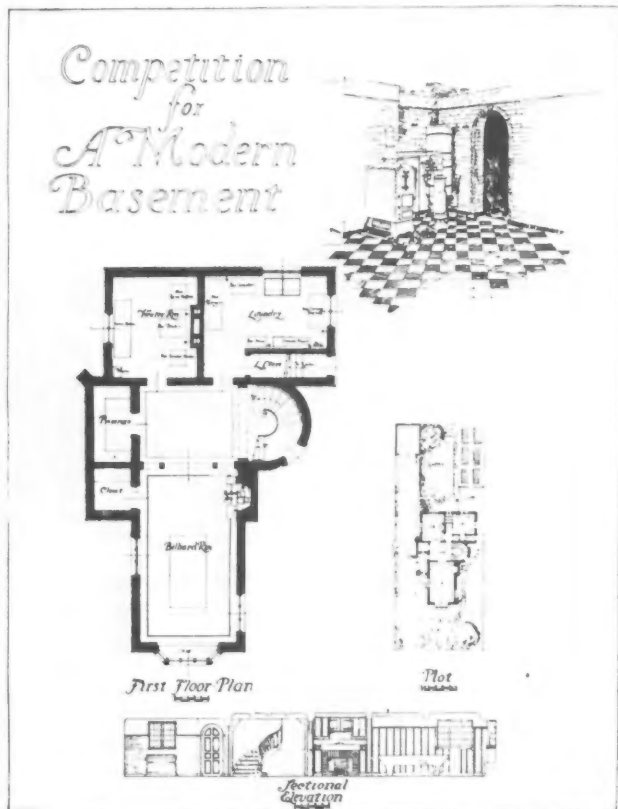
was confined to Chicago architects and draftsmen and the conditions provided that a central, gas-fired house heating plant, together with hot water service, refrigeration, laundry washing, drying and ironing, should all be taken care of in a practical manner, leaving the remainder of the basement space to be turned into an attractive room or rooms for recreation, rest or entertainment. The size of the lot specified upon which the building was to stand was 50 by 125 feet.

First prize was awarded to P. Donald Horgan. Four other prizes were presented to J. W. Turner, G. P. Lagergren, Margaret S. Jones and T. A. Butler, while honorable mention was given Alfred F. Schmiek. There were 364 entries. The competition was held under the auspices of the Chicago Chapter, American Institute of Architects, A. I. A. Earl H. Reed, Jr., A. I. A., G. A. Carnahan, American Gas Association, L. E. Lindsay, American Gas Association, with H. V. von Holst, A. I. A., acting as architectural adviser.

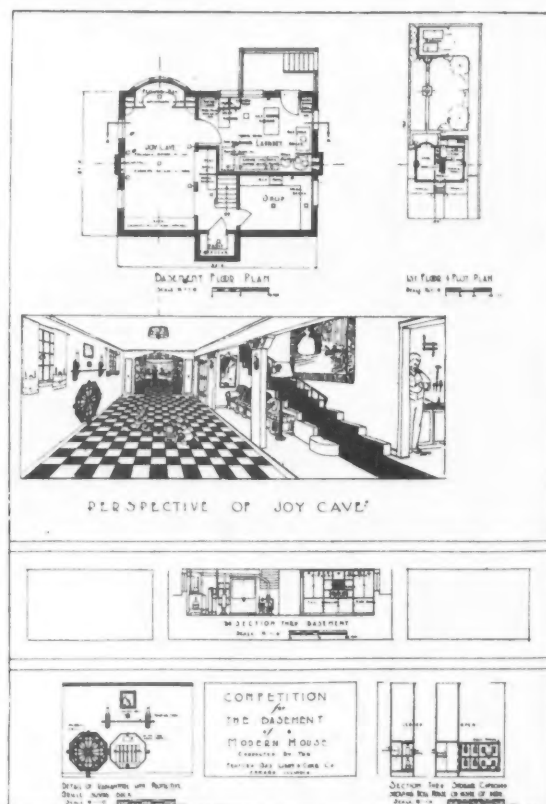
The prize winning plans were subsequently placed on exhibition in the main show room of The Peoples Gas Light and Coke Company, in The Peoples Gas Building, Chicago, where they attracted a great deal of attention.—B. J. MUL-LANEY.



P. Donald Horgan, Winner of the Architectural Contest for a Design for a Prize Basement That Would Be Beautiful, Habitable, and Useful.



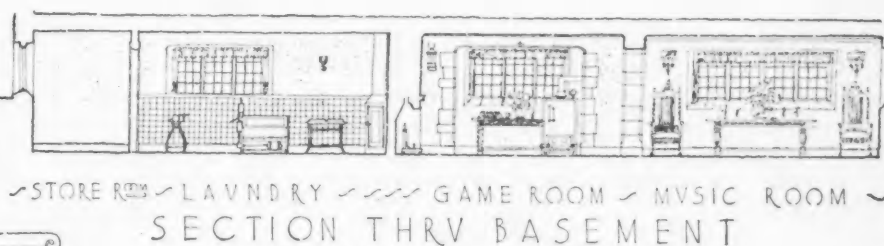
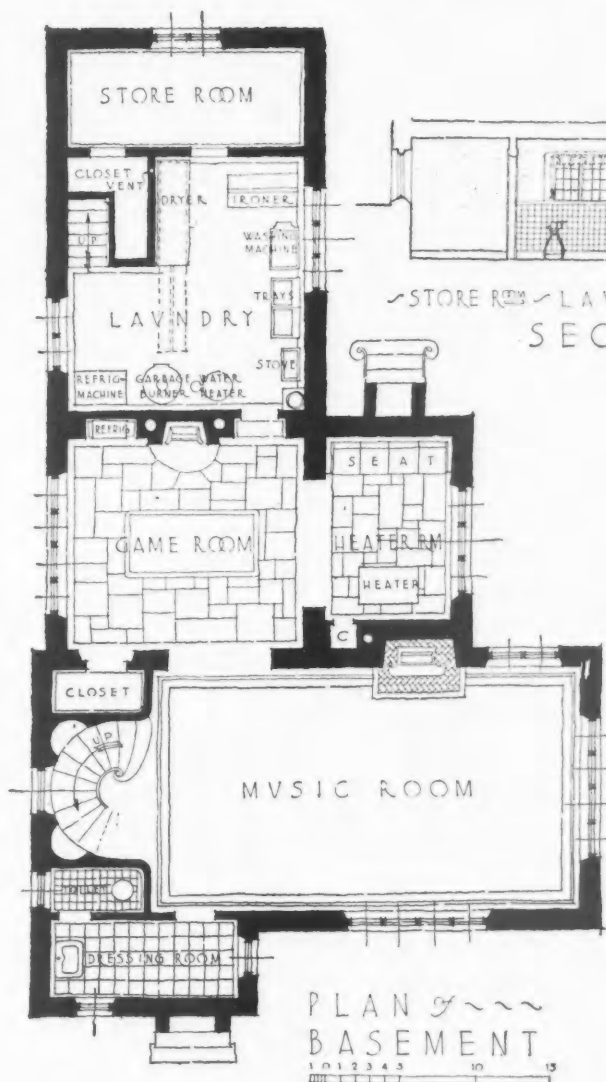
Second Prize Basement Design by J. W. Turner. A billiard room with spacious laundry, heater room, and closets, are the distinctive features of this plan.



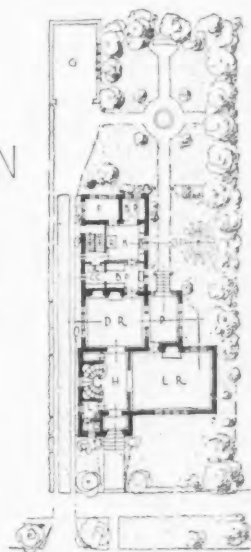
Honorable Mention Was Given to the Design Submitted by Alfred F. Schmiek, a Beautiful Playroom for the Children with a Bower of Flowers at One End and Flanked by an Attractive Staircase.



PERSPECTIVE IN MUSIC ROOM



COMPETITION
FOR A
MODERN
BASEMENT
SUBMITTED



First Prize Basement Design by P. Donald Horgan in Which a Music Room, a Game Room, and an Attractive Stair Case, Are Conspicuous Features of Beauty for Space That Is Usually Unsightly.

Majestic New Film Headquarters

Three Other Beautiful Perspectives in this Month's Selection Including
the Prize-Winning New York State Memorial

By **BERNARD L. JOHNSON**,
Editor, American Builder

THE architecture illustrated in this month's perspectives presents a wide variety of subjects and style, all handled in a notable manner. The Paramount Theatre and Office Building is impressive and costly and presents many novel features. The Roosevelt Memorial is particularly fine in its beauty and stateliness and the management of a Stock Yards Bank has honored itself by choosing a bank design which takes its inspiration from that fountain head of American liberty — Independence Hall.

Stock Yards National Bank Building, Chicago, Ill.

A. Epstein, Structural Engineer

Independence Hall in Philadelphia is known as one of the finest examples of Colonial architecture in the United States and this together with its historical value, is the reason for this design being adopted. It is hoped that the building will be of educational value to the people of Chicago.

One of the interesting features in connection with the design of this building is that while the original Independence Hall in Philadelphia is constructed of brick and wood, the Chicago building ordinance would not permit wood construction; consequently, the entire tower is designed in white terra cotta, cornice around the building in copper, window sills in marble, balustrade on roof in terra cotta and roof itself slate.

The entire floor construction is of concrete and the building is 100 per cent fireproof. The roof of the belfry is made of terra cotta shingles, closely imitating wood shingles as they appear in the original building. Copper cornice is painted white and from the outside it is almost impossible to tell that cornice, window sills, tower and balustrade on the roof are not wood.

The new building will have a 72-foot frontage on Halsted Street, with a depth of 190 feet along Exchange Avenue and will be two stories and basement high. The cost will be in excess of \$500,000.00. The exterior will be of pressed brick and terra cotta trim. Entire tower of terra cotta and window sills white marble.

Pacific Building, Portland, Oregon A. E. Doyle, Architect

The Pacific Building is to be a high grade store and office building. It will have a simple Italian exterior, the three lower stories of rusticated terra cotta forming a base, with a plain shaft, terminating in a rich cornice at the top. The first three stories will be faced with pinkish gray terra cotta. From the third story up, the facing will be of a warm gray brick.

A variegated red tile roof will extend over studios and offices on the attic floor, with space left in the center for housing the elevator machinery and for a court, which will be suitable for gardens. Each studio will have an allotted space in the court, which will be divided by garden walls. The tile roof will be broken by dormer windows for the studios and offices.

The main entrance will have an arched ceiling, and will carry through two stories. The lobby, which will be 75 feet in length, 17 feet wide and two stories high, will have marble floors and walls, and an ornamental plaster ceiling. The entrance doors, elevator fronts and lobby trim will be of bronze.

Paramount Theatre and Office Building, New York City C. W. and Geo. L. Rapp, Architects, R. E. Hall & Co., Engineers

This structure, which will cost \$7,500,000, will contain a theatre auditorium seating 4,000, a small private theatre, and thousands of offices. The total improvement will amount to \$13,500,000. The lot has a 200-foot frontage on Broadway, between 43rd and 44th streets, and extends 207 feet westward. Two buildings now occupying this site, the Putnam Building and Westover Court, an apartment house, will be demolished in the late summer.

An immense clock, with a face three stories high, facing Broadway, will be one of the salient features of the new building. It will have chimes imported from Europe. The main lobby will be unusually handsome, being 102 feet long and 47 feet wide. It will rise to a height of five stories, and will be finished in marble and bronze. In detail it will somewhat resemble the foyer of the Paris opera.

One feature entirely new to American theatres will be the promenade circling the upper part of the auditorium's interior. It will be reached by high speed elevators. Seats in the Paramount Theatre will be reserved. One whole section of the mezzanine floor will have the exclusiveness of the "Diamond Horseshoe" of the Metropolitan opera, and will be served by private elevators.

A nursery for non-dramatically inclined youngsters, and a radio broadcasting plant are also among the features of the new structure. The small private theatre is to be used for rehearsals, and private showings of new films.

A "Motion Picture Hall of Fame" contains portraits and biographical material of the more notable figures in the development of the industry is also planned.

The air-conditioning machinery includes a refrigeration plant for summer use. Great water tanks under the stage will also be equipped with refrigeration machinery, so that ice ballets can be staged in connection with exhibition of certain pictures.

New York State Roosevelt Memorial John Russell Pope, Architect

Adjoining the American Museum of Natural History, between 77th Street, Central Park West, 81st Street and Columbus Avenue, New York City, this beautiful and stately memorial will be erected. Mr. John Russell Pope has been appointed architect as a result of a prize competition won by him with a design, the entrance to which is shown. The jury of award consisted of the trustees of the New York State Roosevelt Memorial and two architects, one selected by the competitors and the other by the trustees.

Memorial Hall will be housed in a building which is to be directly back of the entrance arch illustrated. This building is six stories in height and the hall, which will extend to a height of four stories in the center section, will contain mounted trophies of the chase and other specimens collected on numerous hunting and exploration trips of the late Theodore Roosevelt.

Mr. Pope's solution of the architectural problem involved has been to give stately beauty to the conspicuous entrance arch while the Memorial Hall, in its interior treatment, conforms to the spirit of the American Museum of Natural History which it adjoins and to which "Theodore Roosevelt devoted the early and closing years of his life."

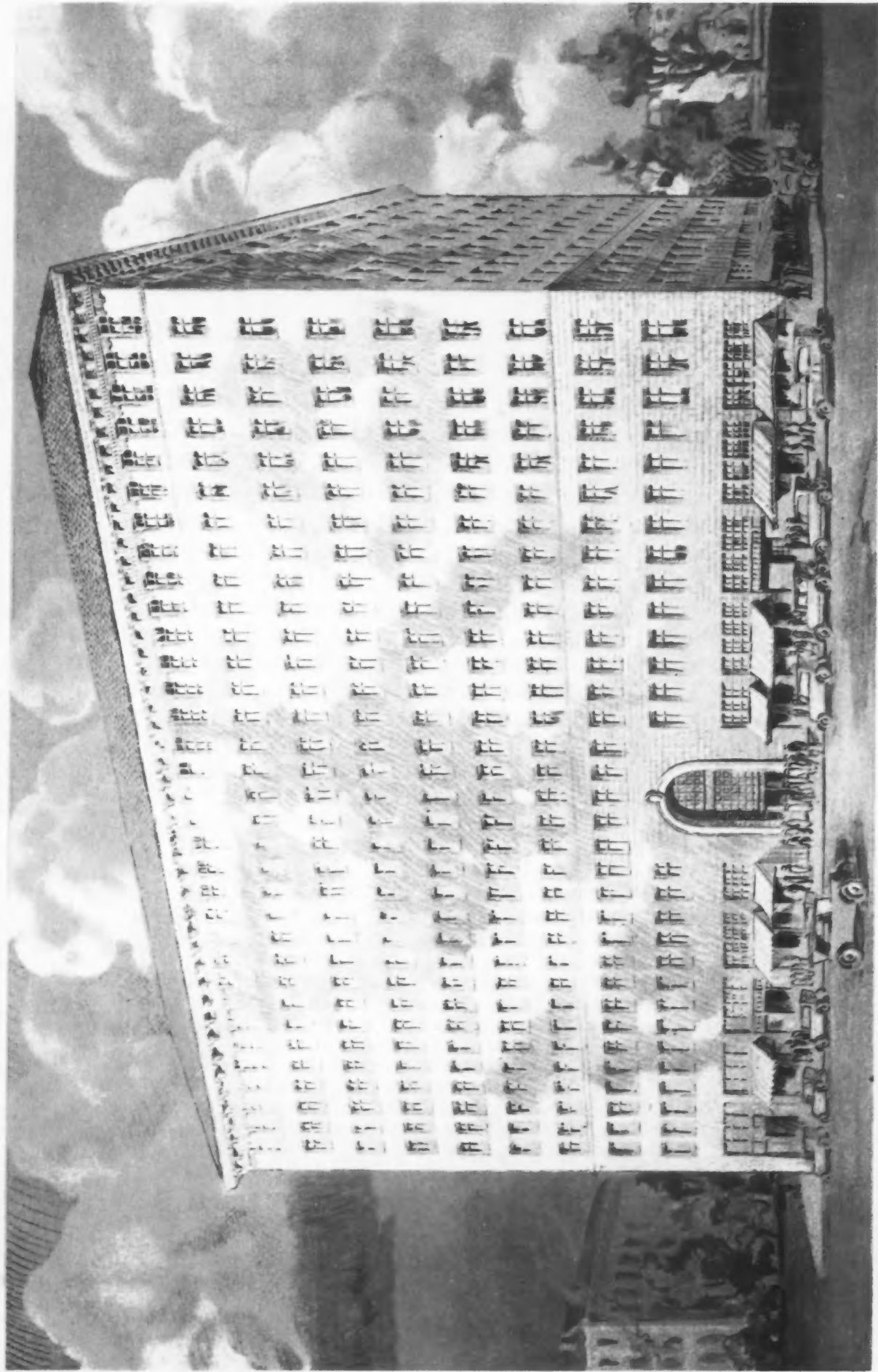
ART SUPPLEMENT *of* NOTABLE ARCHITECTURE



PLATE 49

*The STOCK YARDS NATIONAL BANK, Chicago's replica of Independence Hall;
A. Epstein, Structural Engineer.*

The AMERICAN BUILDER, September, 1925



The PACIFIC BUILDING, Fifth, Sixth and Yamhill Streets, Portland, Ore.;
A. E. Doyle, of Portland, Architect.



PLATE 51

The PARAMOUNT THEATRE AND OFFICE BUILDING, Times Square, New York City;
C. W. and Geo. L. Rapp, of Chicago, Architects.

A. E. Doyle, of Portland, Architect.

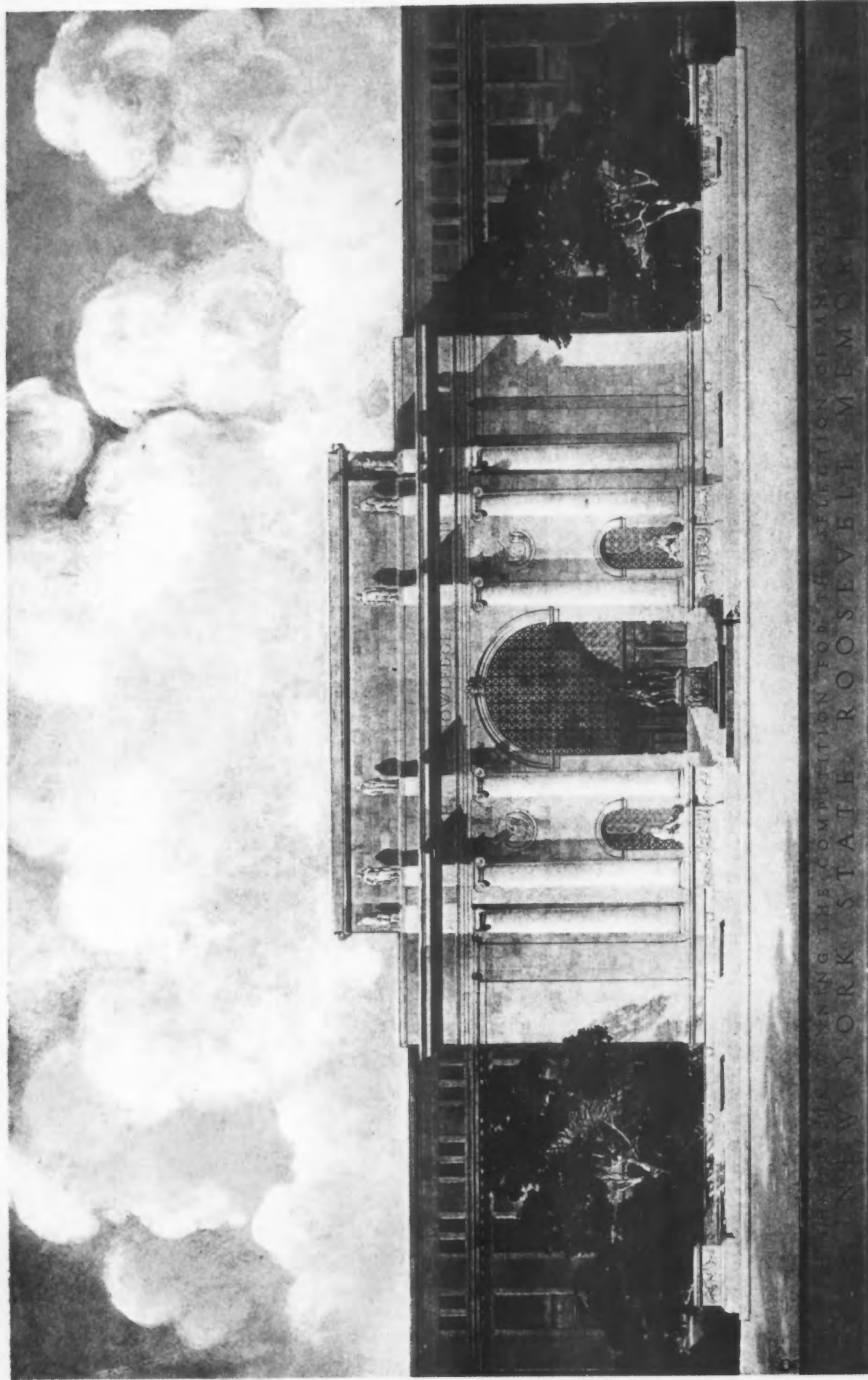
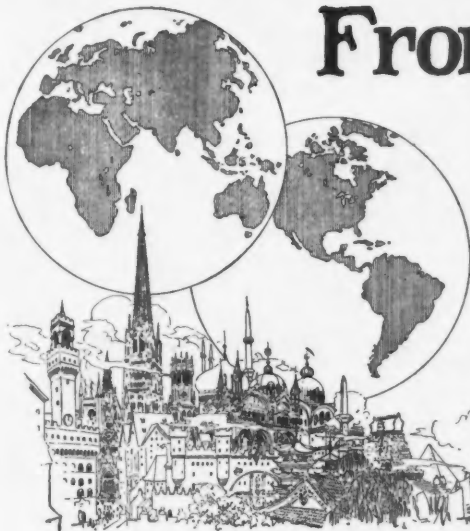


PLATE 52

The New York State Roosevelt Memorial, winning design by John Russell Pope, Architect. This Memorial will be built in connection with the American Museum of Natural History, New York City.



From Our Daily FOREIGN MAIL

Conducted by Wm A. Radford, Jr.



William A. Radford, Jr.,
Vice-President of the Rad-
ford Publications, in a two-
year investigation, has person-
ally visited forty-nine foreign
countries in the interest of the
American Builder and World
Trade for our advertisers.

FROM MANCHURIA

(Example of Foreign English, exactly as written)
Moukden, Manchuria.

AMERICAN BUILDER:

Your comprehensive proposition is called to the admirable facilities as we are in a position to handling of materials you have written in the journal, you kindly given us dated on the April 30th, and many thanks.

If you will kindly furnish us with the best quotation C.I.F. American port, or submit specifications on the attached papers we cut down, with which we see exceedingly induced by your advertisements, we shall make special efforts to initiate business with your esteemed firms. We are interested in all merchandises which can be marketed in this territories, also we have been close connection with those American goods, Standard Varnish, Certain-teed production, Farm Machine of International Harvester Company, Leather Belting of Graton & Night Co., Electric Apparatus of International General Electric Company, and already established a gratifying reception among the Chinese men. We are particularly interested in goods the sale or purchase of which assures a large yearly turnover.

We enjoy very close connections with manufacturers whom a reputation of integrity have been so well founded in your country, and have unexcelled facilities for producing business and satisfying the firms we represent. We solicit the privilege of your correspondence, being perfectly satisfied to allow continuations of business to be determined by our ability and by result shown in trial transactions.

Your prompt reply will be greatly appreciated, and we remain,
Yours faithfully,
FUJITA & Co.

FROM INDIA

Surat, India.

AMERICAN BUILDER:

We are in the market for cut iron and galvanized nails, also slop sinks, sewer pipe, clothes dryers and washing machines, as checked on your inquiry sheet.

(Signed) MR. EBRAHIM ABLULCAR EBRAHIM,
No. 8, Begumpura Street, Bhajiwalli Pole.
Dealer.

HE RECOMMENDS PERUVIANS LEARN "U. S."

La Oroya, Peru, S. A.

AMERICAN BUILDER:

An executive who shortly is returning home to The States with the intention of building a large home on his estate, has consulted us about certain standard goods, permit me, therefore, to request from you the following catalogs:

Curtis Woodwork,
Ludowici Roofing Tiles,
Algoma Walls of Wood,
Pioneer Fireplaces,
Bertelson Woodwork,
Ideal Hanger Co.

Should there be any charge against these catalogs, kindly bill me for any expense you may have on account of this request, and I'll be only too glad to remit by return mail.

The AMERICAN BUILDER is making a considerable hit with this native element here in Peru, and unless I keep my copies locked up, they seem to disappear faster than they arrive. They are deploring the fact that such a high grade publication is not printed in Spanish, although I have told them many times it would simplify matters considerably if they themselves would study and learn "U. S."

Thanking you for your courtesy, I am

Very truly yours,

(Signed) JOHN BENDEL,
Mechanical Engineer.

FROM CHINA TO THE WORLD'S GREATEST BUILDING PAPER

Tsingtau, China.

AMERICAN BUILDER:

We received the AMERICAN BUILDER of November, 1924, with many thanks. Enclosed please find cheque for \$10.00 as subscription, to start, if possible, back with December, 1924.

For Hiraoka Gumi,
(Signed) R. WATANABE, Master.

It is interesting to note that this check is made out in favor of the World's Greatest Building Paper—a reputation which the AMERICAN BUILDER evidently enjoys in the Orient the same as in the United States.—EDITOR.

FROM AUSTRALIAN ARCHITECTS

Brisbane, Australia.

AMERICAN BUILDER:

We have received a copy of the AMERICAN BUILDER, for which we thank you very much. We find this a very fine publication and it has found a prominent position in our library, as we are sure much of the information contained therein will be of great benefit to us in our work.

We also thank you for your offer for getting any information from American manufacturers for us.

(Signed) T. R. HALL and G. G. PRENTICE,
Architects and Real Property Valuers.

TRANSLATES OUR LETTER INTO PORTUGUESE

Pernambuco, Brazil.

AMERICAN BUILDER:

In my hands your letter of May 4th and also copy of your nice building paper. I went through the pages of this well made review and found it so interesting that I presented the sample to the library of our Engineers' Club, where I am sure it will be very much appreciated by the members directly interested in construction purposes.

I am also sending you a list of our club members who are interested in construction lines. I think it would be advisable for you to send a letter to each written in the Portuguese language and to assist you I have translated your letter to me into Portuguese. I suppose you could use it as a circular letter to the engineers on list enclosed.

I myself am interested in agricultural and industrial machinery, being a member of the Committee on Railways and Highways. Will you be kind enough to put me in touch with any maker of good material for railroad construction and any editor or bookseller that can send information on books on construction and maintenance of railroads?

(Signed) SAMUEL PONTUAL, JR.,
Engenheiro.

FROM VENEZUELA

Caracas, Venezuela.

AMERICAN BUILDER:

Receipt is hereby acknowledged of your June magazine which has been preserved for reference. The Consulate will be pleased to receive copies of the AMERICAN BUILDER any time.

(Signed) DAYLE C. McDONOUGH,
American Consul.

FROM BURMA

Rangoon, Burma.

AMERICAN BUILDER:

We are in receipt of your letter for which we beg to thank you. We look forward with much interest to the receipt of the copy of the AMERICAN BUILDER.

(Signed) C. S. BEHARA & SONS...

FROM GERMANY

(Translated from the German)

Berlin, Germany.

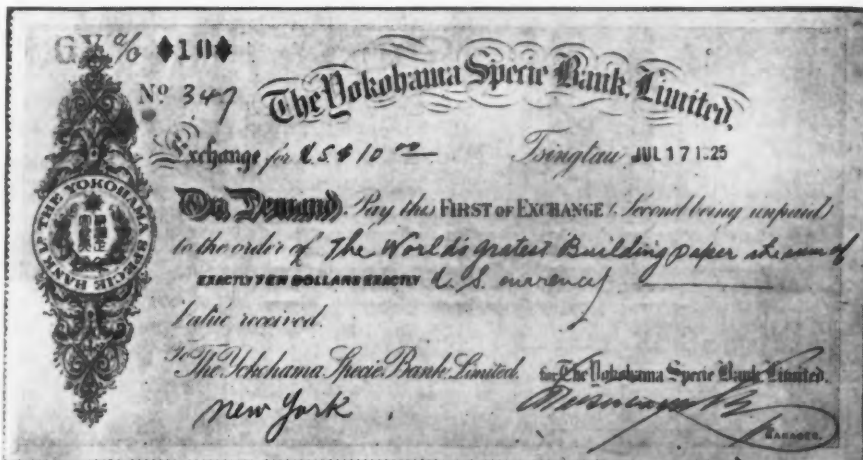
AMERICAN BUILDER:

We have received your letter together with sample copy of the AMERICAN BUILDER, the valuable and extended contents of which we have read with great interest.

We thank you for your special offer permitting us to use the information contained in your publication which we will do as occasion permits.

Kindly send us your regular subscription blank as we want to be entered as a regular subscriber at \$4.00 per year.

(Signed) KOCH & KIENZLE,
Doktor-Ingenieure.



Photograph of Cheque from Tsingtau, China, to Pay for 2½ Years' Subscription to the World's Greatest Building Paper

Note: For the benefit of our advertisers we will, without charge, translate any foreign language letters referred to us.

AMERICAN BUILDER.

Construction Uses of Short Lengths of Lumber

Report of Survey by Department of Commerce and Central Committee on Lumber Standards

By F. Y. DAWSON, Special Agent

AS a part of the program of the American Lumber Standards a survey of the Construction Uses of Short Lengths of Lumber was made by the Department of Commerce and the Central Committee on Lumber Standards to determine the practicability of buying short lengths of softwood yard lumber for use in the construction of small and medium sized houses of lumber construction. A preliminary report was made at the May 1, 1925, General Lumber Conference in Washington.

This study shows that in twenty houses, taking 46,842 pieces of lumber:

32.70 per cent of the lumber is under 8 feet

10.90 per cent of the lumber is under 8-9 feet (both inc.)

56.40 per cent of the lumber is over 9 feet

That is, one-third of the lumber, which was delivered to the jobs in long lengths was cut into lengths less than eight feet during the process of construction while an additional eleven per cent was cut into eight to nine foot lengths.

Data and charts prepared by the National Lumber Manufacturers Association and presented at the May, 1, 1925, Lumber Conference show that 5.3 per cent or about 1,350,000,000 feet of the total softwood yard lumber produced is under 8 feet and 6.6 per cent or approximately 1,680,000,000 feet is from 8 to 9 feet. The National Lumber Manufacturers Association further reported that lengths less than 8 feet can be purchased at an average reduction of about \$6.00 per thousand for common lumber and about \$12.50 for select lumber, these prices being f. o. b., mill.

Additional quantities of short lumber, mostly 8 feet and under aggregating about 4 per cent of our total softwood yard lumber production, might be saved by manufacturers if it were salable. Thus it is obvious that the purchase of short length lumber would result in national economy through closer lumber utilization as well as a saving in the price.

The possible exceptions to the use of short lumber, are joist and rafters. However, a saving of from 6 to 8 per



Photo 1—Here Is an Avoidable Lumber Waste in the Overlapping of Joists Which Are Longer Than Required.

cent can be made in these items if odd lengths are made standard.

Softwood flooring should be made in multiples of 16 inches, especially that under 8 feet, and end matching would be an advantage.

It was found that 89 per cent of the lumber delivered to the job in lengths of from 8 to 16 and in some cases up to 22 feet was cut into shorter lengths by the carpenters during the process of construction.

Experienced builders were found to have worked up their material very closely and what was left over was moved to the next job. Waste occurred with inexperienced builders or carpenters who built only one house and had no place to use their left over.

Four districts were selected in which this survey was conducted, namely: Washington, D. C., Philadelphia, Chicago and Kansas City. Houses in Washington and Kansas City Districts were within the city limits. Those in the Philadelphia district were at South Ardmore, Pa., and Haddonfield, N. J. In the Chicago district they were located at Hammond and Gary, Ind.

The program of work limited the survey to lumber houses, that is those using siding, shingles, stucco, or brick veneer over lumber. In the two Eastern districts it was found that this limitation confined the survey to practically one size house which was a six room and bath dwelling. When a more pretentious house is desired, brick, stone or tile is used. In the Mid-West district larger lumber houses are built. The largest was found in Kansas City.

Grouping of Material

The material of the houses was divided into ten main groups and one

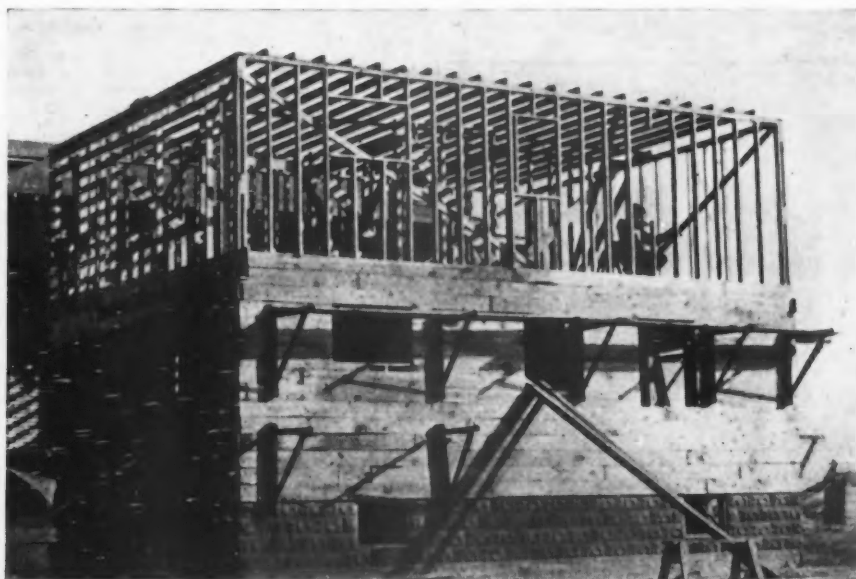


Photo 2—Cutting 18-Foot Studs for Windows Is Another Unnecessary Waste.

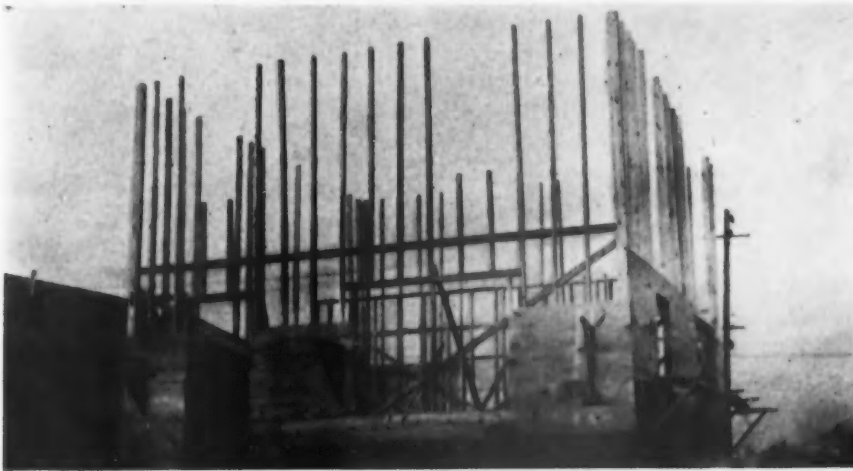


Photo 4—Short Sheathing and Studs Can Be Used Just as Well as Long Ones Between Windows.

miscellaneous group. Only one group was considered at a time when taking measurements. The groups were taken in about the order of erection as follows:

- (1) Joist including joist, sills and girders when built up.
- (2) Studding which are all exterior and interior studs, plates, heads and cripples.
- (3) Rafters including show rafters or barge boards.
- (4) Sheathing including that used on dormer windows and all other vertical walls.
- (5) Roofing including roof boards and shingle strips, except ceiling over eaves.
- (6) Sub-flooring including that used in bath rooms where tiled and on stair platforms.
- (7) Siding including drop and bevel.
- (8) Flooring including all interior top floors where made of soft wood.
- (9) Porch flooring including all exterior floors.
- (10) Ceiling including that used over eaves of houses and elsewhere.
- (11) Miscellaneous including all other softwood lumber not mentioned above.

No inside trim, window or door frames, porch columns, stair trim, or other millwork or hardwood floors were considered; they being otherwise covered. It was observed that only two jobs used mill-made columns and that two of the builders made their own window and door frames. All cellar door and window frames were made on the job with but one exception.

Table No. 1 shows:

(a) The percentage of board feet in lengths up to and including 7 feet 11½ inches (under 8 feet).

use of shorter pieces unless odd lengths are furnished. The ends of the joist are usually lapped on the girder or bearing plate as shown on Photo No. 1. It is claimed by some builders that this lapping adds strength to the structure but as these laps were not spiked together on any of the houses surveyed this claim is doubtful. One house had 12 per cent waste by lapping of joist. Most of the waste could have been avoided had odd lengths been available.

An example of odd-lengths use was cited by a Washington builder as having taken place in 1914 where there were a large number of houses being built on lots which were 17 feet wide, the houses being built in a row with party walls between and the length of the joist and rafters being about the width of the lot, or 17 feet. These joist and rafters had been cut from 18 foot lengths with a loss of nearly 6 per cent until an enterprising lumber dealer procured 17 foot lengths. By so doing he saved the builder and the ultimate owners many dollars, while at the same time he expanded his business greatly on these lengths.



Photo 3—Here Is an Example of 7-Foot 11½-Inch Studs and Short Length Sheathing.

TABLE NO. 1

Percentage in Board Feet of Lumber Used in the Construction of Twenty Small and Medium Sized Houses in the East and Middle West

	% B. F. Over 9 Ft.	% B. F. 8 to 9 Ft.	% B. F. Under 8 Ft.
1. Joist.....	84.41	4.25	11.35
2. Studs.....	28.92	28.22	42.86
3. Rafters.....	75.66	5.34	20.00
4. Sheathing.....	47.50	6.87	45.63
5. Roofing.....	61.74	9.32	28.94
6. Sub Floor.....	74.39	4.04	21.57
7. Siding.....	50.53	8.09	41.38
8. Ceiling.....	39.38	5.17	55.45
9. Porch Floor.....	1.57	22.98	75.45
10. Flooring.....	65.34	5.78	28.88
11. Miscellaneous.....	44.88	6.51	48.61
12. Total Framing.....	57.70	14.41	27.84
TOTAL AVERAGE.....	56.40	10.90	32.70

Comparison of Percentages used in Eleven Houses in the East and Nine in the Middle West

% Over 9 Ft.		% 8-9 Ft.		% Under 8 ½ Ft.	
East	Mid-West	East	Mid-West	East	Mid-West
85.37	85.15	3.86	4.87	10.77	9.98
36.49	21.80	23.25	31.90	40.26	46.30
78.73	67.68	5.10	5.95	16.17	26.37
54.61	40.52	5.36	8.42	40.03	51.35
59.08	63.46	11.37	6.17	26.55	30.37
74.33	74.41	3.33	4.39	22.34	21.20
52.87	44.45	5.57	14.82	41.58	40.73
45.81	25.44	4.44	7.56	49.75	67.00
00.00	3.57	20.00	26.77	80.00	69.66
67.75	75.36	6.59	1.24	25.66	23.40
34.04	50.30	1.94	8.91	64.02	40.78
64.99	55.25	11.74	16.80	23.27	27.94
54.50	50.53	8.54	11.48	36.69	37.91



Photo 5—Cutting 8-Foot Lengths from 16-Foot Pieces. The shorter lengths would serve the purpose just as well and effect a considerable saving of lumber and labor.

Rafters

In the case of rafters there being no chance of lapping as in joist the ends were cut off. One house observed required 16 foot 6 inch rafters which were cut from 18 foot lengths with a waste of 1.5 board feet per rafter or 8.3 per cent. A 17 foot length would have reduced this loss to 2.95 per cent, or a gain of 5.38 per cent. Roofs that are broken, such as hip, Jirkenhead and valley, require more short lengths than the plain gable roof. As the former generally have a better appearance than the latter it would be well to encourage the building of those types in preference to the latter. Where gable roofs are built the use of dormer windows would lead to the use of more short lengths.

Studding

There was found to be considerable difference in the length of studding in the Eastern districts and the Mid-West. This was due to three causes:

- Ceilings were higher in the East.
- Roofs were plainer in the East requiring less gable studs.
- Balloon framing was extensively used in the East (See Photo No. 2), with two story studs while the platform type construction was used in the Mid-West using one story studs (See Photo No. 3).

On several of the balloon framed buildings all of the out-

side studs were set up full length, the window and door openings being cut in after sufficient sheathing had been nailed on to support the short pieces. (See Photo No. 4). The short pieces that were cut out were used in the openings where possible for heads and short side studs. (On one house 27 per cent of these full length studs were cut.)



Photo 6—Here Is a House Which Is Sheathed and Roofed with 1-Inch by 6-Inch by 5-Foot $\frac{1}{4}$ -Inch Car Roofers.

by trimming them to a standard length so that when delivered on the job it would be only necessary to nail them up. As window and door frames together with the spacing of studs are already standard, door and window heads, studs and cripples could be cut to standard lengths.

If standard length studs were used the height from one floor to the next would be standard thus allowing the use of standard stair framing.

These standard lengths would probably be 7 feet 9 inches, 8 feet 3 inches, 8 feet 6 inches, this being a sufficient range to cover houses as usually constructed. This would insure better construction as it is well known that a cut-off saw will trim more accurately than a man with a hand saw.

Sheathing

The place where a large number of short lengths were utilized was in sheathing, as a large percentage of the long lengths delivered on the job were cut to go between window and door openings as shown on Photo No. 3. One house in Washington was sheathed and roofed with car roofers which



Photo 7—Eight-Foot Sheathing and 2-Foot 3-Inch Ceiling Were Used in This House.

were 1 by 6 matched 5 feet 1½ inches long (see Photo No. 6), the studs being especially spaced to take this length. After this was on the builder was asked how he made out, he said, "Say, do you know, I saved money on that job. Those roofers were so bundled that one man could easily handle them and they went on just like laths. I'm ordering enough for three more houses I'm building." Another house in Kansas City was sheathed with Byrkit laths which were 1 by 6 to 4-8 feet long the majority being about 6 feet.

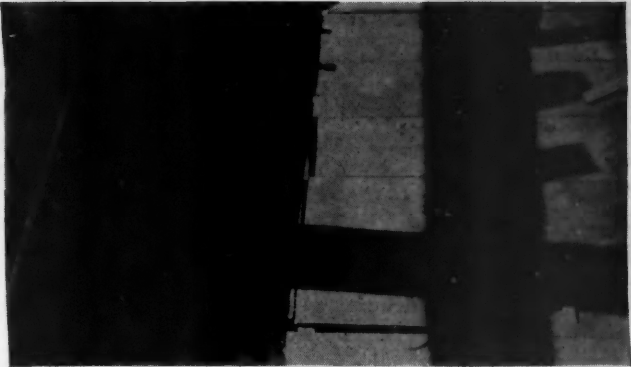


Photo 8—In This Sub-Floor 30 Pieces of 1 by 8 by 16-Inch Lumber Were Used Satisfactorily.

This was put on by the builder without comment or complaint, see Photo No. 7.

Wide sheathing was preferred by most of the builders because of the quick covering capacity but also several preferred it for the better bracing effect due to the nails being farther apart thus increasing the lever arm and making the building stiffer. Their contention seemed to be well founded for the nails in a six inch board would be from four to four and one-half inches apart while in a twelve inch board they would be about ten inches apart or a mechanical advantage in the latter case of 2½ to 1. Diagonal sheathing which has this desired bracing effect was not used on any of the jobs surveyed. It is understood that diagonal sheathed houses stood the cyclone in the Mid-West in March better than those with horizontal sheathing.

Roofing

The first houses surveyed were roofed solid to receive composition shingles. These houses were located in Washington and all the short ends left over from sheathing and sub-flooring were worked into these roofs. In the latter houses shingle strips 1 by 2 and 1 by 3 were used to support wood shingles. As such strips were not used, except a small amount of ends used for bridging, on any other part of the house, there were no short ends to work up, and therefore the lengths were longer and the percentage of short lengths less.

The use of short lengths on roofs is practical as may be seen under "Ceiling" where one man preferred 8 foot lengths for use over eaves. It was observed that short lengths were more easily handled on roofs when the wind was blowing and that they could be applied much quicker if cut to exact length in multiples of 2 feet, the rafters being spaced this distance.

Sub-Flooring

Another place where short lengths could be utilized was in sub-flooring, for though the percentage of short lengths shown in the table is not high it is due to the fact that sub-flooring and sheathing were usually from the same pile. The sub-floor being laid on a surface with few openings will accommodate long lengths and as it is usually laid before the sheathing, the left over ends were reserved to use as sheathing between windows. The possibilities for the use of short lengths in sub-flooring is shown on Photo No. 8 which shows some of the 30 pieces of 1 by 8 by 16 inches laid in one floor. There were also as many more pieces each 32 and 48 inches.

The waste due to laying sub-floor 45 degrees to the joist was estimated by different builders to vary from 5 to 20 per cent. No one seemed to know how much extra to order over the square measure of the floor. The general rule was to "order plenty."

A careful laydown of 8-foot sub-floor on approximately the plan of house No. 20 shows:

Loss where laid 90° to joist	3.62%
Loss where laid 72½° to joist	3.62%
Loss where laid 45° to joist (With square butts).....	8.40%
Loss where laid 45° to joist (With diagonal butts)...	14.50%

The reason for including 72½ degrees is that one builder in Gary laid sub-floors at this angle on about three hundred houses for the Gary Tube Works. The inspector on these houses stated that the top floors laid over sub-floors at this angle were more satisfactory than some that were laid over a 45 degree sub-floor. This method due to the slight angle used no more material than if laid at 90 degrees to the joist with the advantage of having the top floor cross the joist of the sub-floor as in the case of the 45 degree. The above estimates do not take into consideration losses due to surfacing edges.

Porch Flooring

Porch flooring shows the greatest percentage of short lengths used. There is only a small amount of this used and most of which was selected from flooring used in the interior. There was some objection to using butt joints in porch flooring due to the liability of their retaining moisture, thus causing decay. As most porches were about 8 feet wide it would seem inadvisable to purchase this in shorter lengths.

Ceiling

More short lengths were used in ceiling than in any other item, as a large number are used over projecting eaves of buildings. Photo No. 9 shows part of four hundred pieces 15 inches long which were cut from 18 foot lengths of Douglas Fir. The practice of cutting these short pieces was common with nearly every job surveyed, though the lengths cut from were usually from 8 to 16 feet. Photo No. 7 shows a workman nailing these short pieces to rafters. One builder used 8 foot car siding for ceiling. He said, "I like this because it is accurately cut to length and I can nail

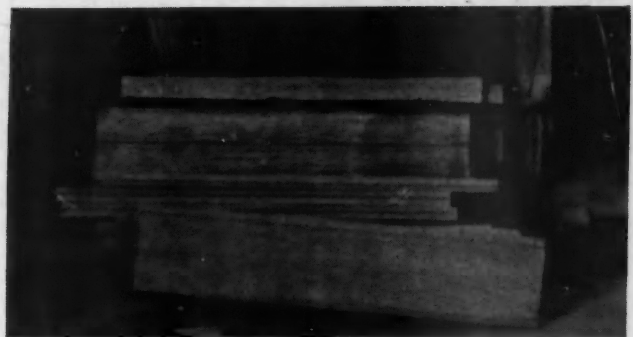


Photo 9—Short Lengths Could Have as Well Been Used to Cut 400 of These Pieces of 1 by 4 by 15-Inch Ceiling Which Were Cut from 18-Foot Lengths.

all of it without cutting my rafters which are spaced 2 feet on centers. I also made my porch ceilings the right width to take it without cutting." Most of the builders in Kansas City ran their ceiling on front porches across the long dimension to avoid unsightly butt joints. This if done elsewhere would promote the sale of more short ceiling.

Flooring

As in the case of hardwood floors, there seemed to be no objection to the use of short lengths of softwood flooring. Much of this softwood flooring was laid directly over the joist (without sub-floor). In opinion of several of the

builders flooring should be made in multiples of 16 inches, especially those pieces under 8 feet.

House No. 6 used hardwood flooring laid directly on the joist. This flooring delivered on the job was found to contain a large percentage of short lengths many of which would not reach from joist to joist. This lot was rejected by the builder and was removed and another lot delivered. It was found that the second lot contained longer lengths and that there were none under 16 feet, however it was observed that nearly every piece had to be cut to permit of the joint coming on the joist, thus the good feature of end matching was entirely lost as nearly all the end matching was cut off. The waste in laying this floor was fully 8 per cent. If this floor had been made in multiples of 16 inches there would have been very little waste and the floor would have been superior as the end matching would have come into play. It was learned that some carpenters lay this flooring on the joist as it comes from the pile, thus very few of the joints rest on the joist.

Miscellaneous

In the two houses stair carriages or horses were made by nailing triangular blocks which were cut to the proper

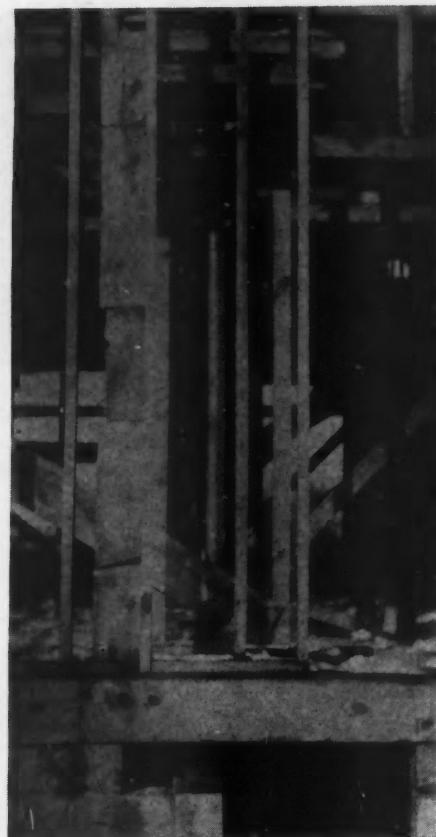


Photo 10—Showing How Odds and Ends of Joist and Studding Are Used for Backing.

angle to give the required pitch on one edge of a 2 inch by 4 inch. These blocks were cut from ends of 2 inch by 6 inch with little waste as they came from alternate sides of the piece. When carriages are cut from solid dimensions the pieces or "points" are wasted.

The percentage of loss of solid over built up is as follows for one carriage:

(a) Cut from solid 2" by 10" by 18' = 30 board feet

(b) Using one 2" by 4" by 18' = 12 board feet

Using one 2" by 6" by 7' 6" = 7½ board feet 19.50 board feet

Total loss... 10.50 board feet = 35%

Belt courses and cornice boards were usually selected from sheathing and roofing material as it was found there were a sufficient number of pieces good enough to be used for this purpose. Bridging was made from ends of sheathing and roofing and in two cases from ends of flooring. Stair platforms were constructed from ends left from studding and sheathing.

In every case, as soon as the builders and carpenters understood the object of this survey, they were ready and willing to help in the majority of cases were of the opinion that short lengths from 6 feet up could be used and in many cases to better advantage.

Table No 2 shows for each house the average length of each item tabulated, and for all the houses, total average length, and number of pieces per item

House	Joist	Studs	Rafter	Sheath	Roofing	Sub. Floor	Siding	Flooring	P. Floor	Ceiling
No. 1.....	9.00	5.50	9.00	6.33	7.33	8.58	5.58	7.08	6.66	5.33
No. 2.....	12.15	6.24	7.66	6.07	9.91	7.16	Shingle	13.13	7.21	5.74
No. 3.....	12.16	6.25	7.66	6.08	5.41	7.66	Shingle	7.50	5.41	3.16
No. 4.....	14.83	7.00	15.08	9.16	6.58	6.83	Stucco	10.00	7.41	4.00
No. 5.....	10.83	6.00	13.08	6.50	8.16	7.00	7.00	None	7.66	4.00
No. 6.....	9.08	6.25	15.26	6.58	8.82	None	6.52	14.00	4.08	3.50
No. 7.....	9.81	6.00	12.08	6.33	8.58	11.00	None	6.91	6.50	5.83
No. 8.....	11.16	6.92	9.00	None	9.41	10.16	7.16	9.50	5.41	2.00
No. 9.....	12.33	7.91	10.58	7.00	12.00	9.17	Stucco	7.66	4.08	3.66
No. 10.....	8.95	5.87	7.22	5.03	9.64	8.17	Stucco	8.41	Cement	7.27
No. 11.....	9.94	4.49	8.68	5.67	8.90	None	Shingle	9.07	3.60	5.08
No. 12.....	9.00	5.25	9.17	None	10.92	9.50	4.17	9.50	6.66	None
No. 13.....	7.82	6.28	6.03	6.70	7.87	8.14	Shingle	None	Cement	None
No. 14.....	15.50	7.41	8.50	6.66	6.42	6.16	6.58	H. W.	7.25	8.17
No. 15.....	9.92	5.32	6.10	4.08	4.48	8.92	Shingle	4.36	8.00	Not finished
No. 16.....	11.50	5.92	8.15	4.58	7.00	8.25	Stucco	H. W.	6.50	4.76
No. 17.....	8.29	6.34	14.45	7.07	6.68	12.08	4.48	H. W.	5.17	3.57
No. 18.....	11.04	4.45	9.71	5.72	6.69	9.06	Shingle	H. W.	Cement	2.01
No. 19.....	12.17	4.48	8.66	6.38	9.22	15.80	Shingle	H. W.	Cement	3.21
No. 20.....	12.25	5.58	9.25	9.33	9.08	10.66	Stucco	H. W.	Cement	3.33
Average Length Items.....	10.94	5.95	9.74	5.75	8.15	9.12	6.92	8.92	6.12	4.38
Average Length All Items.....	7.59									
No. Pieces.....	3,744	12,020	2,069	6,297	4,696	3,107	3,099	3,939	1,452	6,419
Total Number Pieces.....	46,842									

Table No. 3 gives the (a) builder, (b) location, (c) type of house, (d) number of rooms, (e) size of foundation and price of house not including lot.

No.	Builder	Location	Type	Rooms	Foundation	Garage	Price
1	J. C. Smith.....	Washington, D. C.	Lumber, 2 story Semi Bungalow.....	Six.....	24x30	In cellar	\$8,500
2	H. L. Thornton.....	Washington, D. C.	Shingle 1 story Bungalow.....	Six.....	22x35	None	8,000
3	C. M. Chaney.....	Washington, D. C.	Shingle, 2 story Semi Bungalow.....	Six.....	24x34	None	9,000
4	J. B. Higdon.....	Washington, D. C.	Stucco, 2 story Box.....	Six.....	21x34	In cellar	8,650
5	B. Lightbown.....	Washington, D. C.	Lumber, 2 story Box.....	Six.....	22x28	None	7,300
6	John King.....	Washington, D. C.	Lumber, 2 story Box.....	Five.....	17x25	None	5,000
7	T. L. Funkhausen.....	Washington, D. C.	Lumber, 1 story Bungalow.....	Five.....	25x30	In cellar	7,300
8	D. M. Keys.....	Washington, D. C.	Lumber, 1 story Bungalow.....	Five.....	28x30	None	6,000
9	Scroggins & Sons.....	Ardmore, Pa.	Stucco, 2 story Dutch Colonial.....	Six.....	22x28	On lot	6,500
10	S. Schiffer.....	Ardmore, Pa.	Stucco, 2 story Dutch Colonial.....	Six.....	24x28	On lot	7,250
11	W. H. Andrews.....	Haddonfield, N. J.	Lumber, 2 story Dutch Colonial.....	Eight.....		None	6,900
12	Witter Bros.....	Hammond, Ind.	Lumber, 1 story Cottage.....	Six.....	24x43	None	4,800
13	J. R. Charter.....	Gary, Ind.	Shingle, 2 story Dutch Colonial.....	Nine.....	32x33	On lot	9,500
14	A. M. Imes.....	Gary, Ind.	Lumber, 2 story Box Duplex.....	Six.....	22x30	None	6,300
15	M. Geromettia.....	Gary, Ind.	Shingle, 2 story Box.....	Six.....	20x22	On lot	4,600
16	H. W. Ruttingeb.....	Kansas City, Mo.	Stucco, 1 story Bungalow, elev. sleep. porch.....	Seven.....	24x48	In Cellar	8,500
17	C. White.....	Kansas City, Mo.	Lumber, 1 story Bungalow.....	Six.....	24x40	On lot	4,700
18	L. C. Bergsten.....	Kansas City, Mo.	Shingle, 2 story Dutch Colonial.....	Eight.....	24-6x31	Oh lot	10,250
19	H. H. Harris.....	Kansas City, Mo.	Shingle, 2 story Modified Dutch Colonial.....	Eight.....	32x32	On lot	8,800
20	F. E. Kraft.....	Kansas City, Mo.	Shingle, 1 story Bungalow, elev. sleep. porch.....	Seven.....	35-6x37	In cellar	7,950
							145,900

Low Price.....\$ 4,600
High.....10,250
Average.....7,295

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Better Plastering

Lime Plasters, Their Preparation and Application

This Is the Fifth of a Series of Authoritative Articles on This Subject

LIME is one of the most ancient of the known building materials and has a very interesting history. Indeed, its use is so old that evidently it was known long before recorded history. Evidences of the use of mortar are found, not only in the older countries of Europe, Asia and Africa, but also on the Western Hemisphere, where the remains of works of ancient artisans show its use. These ruins prove the enduring qualities of the material as well as the skill of the workmen.

One writer considering the possible discovery of lime declares it possible that some savages, having used stones composed of lime rock to confine their fire, noticed that the stones were changed by the action of the heat. He believes it possible that a passing shower slacked the lime to a paste and the discovery was made that the paste was smooth, easily worked and made a better material for filling up the cracks and crevices in the crude dwellings of the savages than did the clay they had been using.

The ancient pyramids of Egypt reveal one of the earliest uses of mortar. Vicat in his work on "Mortars and Concrete" states:

"The Egyptian monuments present without a doubt the most ancient and remarkable examples which we can cite of the use of lime in building. The mortar which binds the blocks of the pyramids, and more particularly those of the Cheops, is exactly similar to our mortars in Europe. That which we find between the joints of the decayed buildings at Ombos, at Edfou, and in the Island of Phila, and on other places give evidence by its color, of a reddish, very fine sand mixed with lime in the ordinary proportions."

Lime mortar used for binding bricks and other masonry units differs from the lime used for interior plastering only slightly, the main difference being in the plasticity of the mortar. Some of the finest interiors of ancient Rome and the interiors of religious structures, where the height of Renaissance construction was reached, were of plaster which endures to the present day.

As stated in previous articles in this series, plaster, to give that satisfactory and durable service which has proved it to be the most pleasing and utilitarian interior finish yet known, should be three coat work on a proper and permanent base.

This applies with equal strength to lime as to the other plastering materials in common use. It is worthy of repeating and remembering that no matter how high grade the materials and how careful the workmanship, only three-coat work on a permanent base will produce the best wall.

Lime for plaster now is most generally used in two forms: quick-lime which requires slacking, careful preparation and aging on the job, and hydrated lime. Ready mixed lime mortar is also now available in some cities from central mixing plants and is delivered on the job ready to be applied to the walls.

Lime, used in plastering, is a chemical combination of calcium and oxygen. Lump lime, or quick lime, is made by taking limestone, chemically known as calcium carbonate, and burning it in a kiln. The limestone crumbles and disintegrates, losing a gas in the process that leaves the product of the kiln in the form of an oxide of calcium or quick lime. However, in this state it is very susceptible to



An Example of the Beautiful Results Which May Be Obtained in Plastering Where Proper Materials and Skilled Workmanship Are Employed. Plaster is still one of the most beautiful and satisfactory interior finishes yet devised after centuries of building experience.

the influence of moisture and air and has a tendency to resume its original form, so it must be protected against moisture and contact with the air.

For lime plastering, the plasterer begins with this product of the kiln—quick-lime—and takes it through a series of operations by which it reverses the decomposing or breaking down process ending at the kiln, so that on the wall the setting element of the plaster proceeds to resume, as nearly as it can, its original state, namely limestone.

The first operation is quite simple and is called "slacking," which is done merely by adding water to the quicklime. From this slacking process is produced lime putty which is the basis of all lime plasters. (The use of hydrated lime in producing lime putty will be described later.)

Lime putty produced from quicklime must be of the correct stiffness and must be free from lumps which are lime that has not been disintegrated and thoroughly combined with the water. An additional precaution must be taken in that this putty must be aged so that the chemical process are completed before it is used on the walls. This aging varies with different limes and must be learned by experience with the lime used.

Ordinarily in slacking lime, enough water is added to produce a thick paste after the reaction of slacking is completed. Sufficient water should be used in order that it may come into contact with all parts of the lime. If too little water is used some parts of the mass become dry and are "burned" in the process. "Burned" lime works tough and non-plastic in the mortar. If an excess of water is used slacking is retarded and the paste is thin and watery. This is known as "drowned" paste.

A quick slacking lime requires a large amount of water and this must be added quickly and the lime must be turned over rapidly so that the water may get to all parts and there will be no "burning" from the temperatures generated by the chemical reaction. Slower slacking lime requires less water and in their use, care must be exercised to avoid "drowned paste."

The amount of water to be used in slacking varies with the lime. The quick slacking limes, known as high calcium limes, usually take from 28 to 32 gallons of water to a barrel of lime, while the slower slacking limes, known as dolomitic limes, average about 24 gallons to a barrel. These figures, however, can be only accepted as approximate.

The necessity for allowing time for aging after slacking is due largely to the fact that all limes contain some over-burned particles or some which have combined chemically with silica or clay in the limestone. These particles slack very slowly.

A rule which comes from the ancient Romans will be interesting and possibly instructive to the workman. Vitruvius says: ".....take a hoe and apply it to the slacked lime as you would hew wood. If it sticks to the hoe in bits, the lime is not yet tempered, and when the hoe is drawn out dry and clean, it will show that the lime is weak and thirsty, but when it is rich and properly slacked, it will stick to the tool like glue, proving that it is completely tempered."

Hydrated lime differs from quick-lime in that it has sufficient water added to satisfy the calcium oxide. This product arrives on the job in the shape of powder and from it lime putty is made by adding sufficient water so that standing over night it will produce a stiff paste. No heat is generated in this process and therefore there is no danger of burning. Also there is no danger of lumps or unslacked lime in the putty. From this point the treatment of the lime putty is the same for both products.

There now remains to be considered the manner in which this lime putty is to be mixed for application to the walls of different types. In the Standard Specifications for Lime Plaster, from which the following information is taken, it is specified that:

"The mortar shall be a mixture of lime, paste or putty, prepared from properly slacked quick-lime which has been allowed to age, either neat or sanded for at least three days, or hydrated lime with sand" in the proportions given for each type of wall.

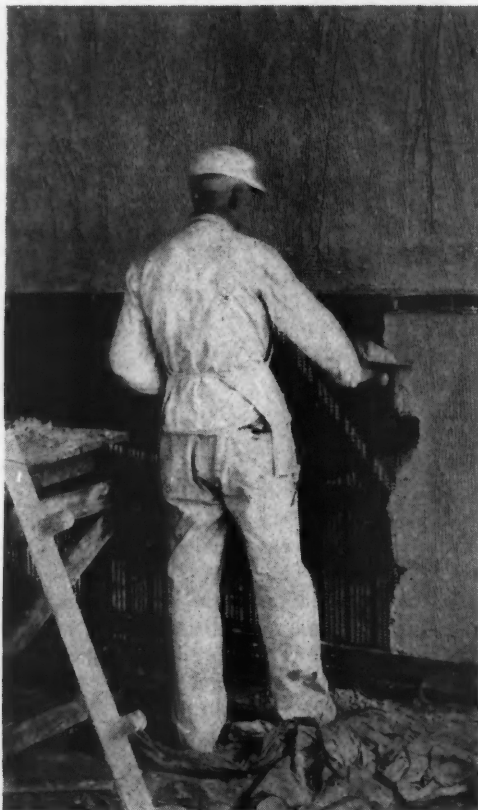
In giving the proportions for the various types of work, those for the brown and scratch coats will be given now while the various types of finishing coats, which may be applied to any of the base coats, will be treated later.

For two-coat work on wood lath known as double-up work, since the brown coat is applied immediately after the scratch coat, grounds of five-eighths inch are specified. For the scratch coat is mixed: stiff lime putty one part by volume, plastering sand two parts by volume, hair or fibre one and one-half bushels per cubic yard of sand. The brown coat is composed of one part of stiff lime putty by volume to three parts of plastering sand.

The first coat of mortar is applied with sufficient pressure to insure a good key at the back of the lath then the plaster is brought out to grounds by doubling on this coat. The rod and darby are used to bring a true even surface for the finishing coat. It should be observed in passing that two-coat work is never recommended on wood lath except on cheap construction as with five-eighths inch grounds the plaster covers the lath only one-fourth inch. Where economy is desirable, two-coat work on certain types of ribbed metal lath is preferable as the plaster covers the lath to a greater depth and this reduces the tendency toward plaster cracks.

For three-coat work on metal lath, the first coat is of the same proportions as for two-coat work on wood lath, except that the hair or fibre is added in the proportion of one bushel per cubic yard of sand. The brown coat is the same as for the two-coat work on wood lath except that here one-half bushel of hair or fibre is used to each cubic yard of sand. The grounds for this work are seven-eighths inch.

The scratch coat is applied one-quarter of an inch thick, care being taken to insure a good key at the back of the lath. As soon as this coat has become firm, but not fully dry or hard, the entire surface should be scratched diagonally, deep enough to provide a good bond for the following coat but not deep enough to injure the keys. The



The First, or Scratch, Coat of the Plaster Should Be Applied Firmly, to Insure a Good Key with the Lath.

second coat is applied when this coat is dried, and used to bring the plaster out to the grounds. This coat should be well worked and the surface, although brought to a true even plane for the finish should be left sufficiently rough to insure a good bond with the last coat, which is applied when the brown coat is dry. The same specifications are given for three-coat work on wood lath, excepting that less hair or fibre is needed in the scratch coat, and more in the brown coat.

Sometimes, it is found advisable to use gauged lime plaster. This is especially true of three-coat work on metal lath where the lath is furred out on metal furring. In such cases, it is preferred that the lime, putty, sand and hair be mixed thoroughly by machine if possible. When hydrated lime is used, the materials may be mixed by hand if desired. Just before the order is delivered to the plasterer, the proper amount of gauging should be added and well worked in. No more plaster should be gauged at one time than can be applied within one and one-half hours after it is added. The proportions for the scratch coat for this material are as follows:

The stiff lime putty eighty per cent, gauging cement twenty per cent, one part by volume, plastering sand two parts by volume, hair or fibre one bushel per cubic yard of sand. For the brown coat the stiff lime putty is ninety per cent and the gauging cement ten per cent. This should comprise one part by volume of the mixture, plastering sand three parts by volume and hair or fibre to be added at the ratio of one-half bushel per cubic yard of sand.

The plaster should be applied to seven-eighths inch ground. The first coat should be applied one-quarter inch thick with sufficient moisture to make a good key. As soon as this coat has become firm, but not fully dry, the surface should be scratched as described previously for three-coat work. When the first coat is hard, the second coat is applied. This is applied to bring the surface out to the ground. It is important that this coat should be well worked. When the second coat is dry, it is ready for the finish coat. For two-coat, doubled-up work on brick, tile, gypsum block and like surfaces, the proportions are: stiff lime putty one part by volume and plastering sand two and one-half parts by volume for the brown coat. For the brown coat, the stiff lime putty is used in the proportion of one part by volume to four parts by volume of plastering sand. This plastering is done to five-eighths inch grounds. The mortar joints of the walls to be plastered should be cut flush and the surfaces should be cleaned and be free from oil, grease, or soot. All masonry surfaces should be well wet before plastering but there should not be a film of free water present when the plasterers begin.

One-quarter inch coat of mortar is applied with sufficient force to secure a good bond to the masonry and then the plaster is brought out to grounds by doubling up on this coat with the brown coat. Rod, darby and float are used to bring a true even finish for the finished coat.

The same proportions for the ground and brown coat are used in two-coat plaster work on concrete. The plastering is to the same grounds, five-eighths inch. All concrete surfaces to be plastered should be cast in rough boards so as to provide a good bond for the plaster. If the concrete surface is smooth or glazed, it should be hacked or roughed so as to provide a sufficient mechanical bond, or ten per cent by volume of Portland cement should be added to the bond coat mix. Just before plastering, the surface should be wire brushed and scrubbed clean in order to be free from oil, grease, or soot. The concrete should be practically dry but if bone dry should be moistened with a brush shortly before plastering starts.

No mortar should be applied to wet or frozen concrete. The brown coat is applied one-quarter inch thick. Before this coat has hardened it should be deeply double scratched. When the brown coat is hard but not dry, the plaster is

brought out to grounds with the brown mortar coat. When this coat is dry, the finish is applied.

Finishing coats are usually of four kinds, hard white coat, the white sand finish, the brown sand finish, and the white skim coat. In all cases where quick-lime is used for finishing it should be thoroughly slacked in a water-tight box and should be run through a No. 10 sieve (10 meshes per inch), and allowed to cool before being applied. Where hydrated lime is used, it should be made into a putty and allowed to stand over night before using.

For the hard white coat, stiff lime putty three parts by volume is mixed with plaster of paris, one part by volume. The white coat is applied evenly and troweled to a hard smooth finish. This finish should be true to plane and free from all brush marks and other imperfections.

The white sand finish is composed of stiff lime putty three parts by volume, white sand three parts by volume, and plaster of paris one part by volume. This sand finish coat should be applied in a thin, even coat and troweled or worked, or rubbed to the desired even finish and texture. For the brown sand finish, stiff lime putty, one part by volume. To this is added plaster of paris or portland cement as required, usually about twenty per cent.

It is important to know that the proportions of sand given above cannot be accepted as absolutely correct. The quality of the sand has a large bearing upon this matter and only experience with the sand can guide the plasterer accurately in this matter.

Special features and problems in plastering will be taken up in later articles.



Building Against Earthquakes

(Continued from page 125.)

says, were considerably damaged.

Building Inspector Backus, of Los Angeles, is the man who mapped out, after the San Francisco disaster, the building ordinance which fixes the height of any structure in Los Angeles at not more than 150 feet and the number of stories anything up to and including thirteen.

This building ordinance is regarded as one of the best in the country, but Mr. Backus is planning to offer some slight amendments to it in the near future as a result of what he has observed at Santa Barbara.

"I am convinced," says he, "that it is possible to build against earthquakes as we have known them in years gone by. Had the country in general built to meet them, damage in the past would have been greatly minimized.

"I do not believe that the owner of a piece of property has a moral right, nor should he have a legal right, to erect a building which is likely at any time to become a menace from earthquake or fire."



Progress of A. I. S. C. Standard

AT a meeting of the American Institute of Steel Construction held in Boston on the evening of June 24, members of the building professions and others interested in the use of structural steel heard what the Institute has already accomplished, and what it hopes to accomplish as a result of its campaign to benefit both the fabricator and the public by securing the general adoption of its new standard specifications of unit stress, and by the further introduction of construction economies together with better business methods among the fabricators of structural steel.

A standard manual to facilitate the work of the designer and the draftsman in the execution of the contract after it has been secured is now in course of preparation. A Bureau of Technical Research is being formed. The campaign to bring out the advantages of structural steel and to secure the wider adoption of the 18,000-pound unit stress is being vigorously pressed.

	<p style="text-align: center;">LANDSCAPE ARCHITECTURE AND THE HOME A DEPARTMENT CONDUCTED BY F.A.CUSHING SMITH LANDSCAPE ARCHITECT CHICAGO</p>	
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The Fall-Blooming Flower Garden

This is Number Seven of a Series of Articles

By F. A. CUSHING SMITH, Landscape Architect

WITH the heat of summer come and gone, and with the cool fall days to greet us, we remember with joy the beauties of the June garden, and take new interest in finding new flowers for the fall garden. We need not despair of color and masses of bloom for the September and October days. You need but plan in advance in the planting of your perennials, to provide varieties which will plentifully blossom late in the year.

Among the annual plants which can be depended upon to enliven the fall border are the fine varieties of asters, with their feathery and tight blooms in reds, pinks, white and blue. Phlox if planted late enough can also be depended upon, and the quaint straw-flowers with their papery petals, if hung up to dry just before they reach full bloom, will combine brightly with the dried grasses and weeds which of late have formed the basis for many a cheery fall bouquet.

The perennials, the permanent back-bone of every garden which is to last, also offer much variety in color, habit, height of bloom. To simplify their use, particularly in

the fall, the accompanying design for the simple fall blooming garden is suggested.

Outside the living room of our home, is a terrace, enclosed by a low brick wall, upon which we sit of a fall evening having tea. The garden is reached by two low wide steps, and a hedge about the garden gives us further privacy. A turf center down which we can stroll to the summer-house, is bordered at either side with a group of perennials, all of which are flowers which bloom in the autumn.

For those who are at home without a vacation during the summer, the garden borders suggested may be of interest, although it usually proves to be more satisfactory, if the arrangement is carefully studied to give us a continuous bloom throughout the season.

For the hedge enclosure we can well use the Amoor River privet, unless we do not wish a clipped hedge. The Van Houttei's spirea, or bridle-wreath, or perhaps rose of Sharon will also give us an informal, flower-laden hedge,



A Wall Enclosed Garden Is Made Attractive in the Autumn by the Use of Late Blooming Plants Well Placed to Add Their Touch of Color.

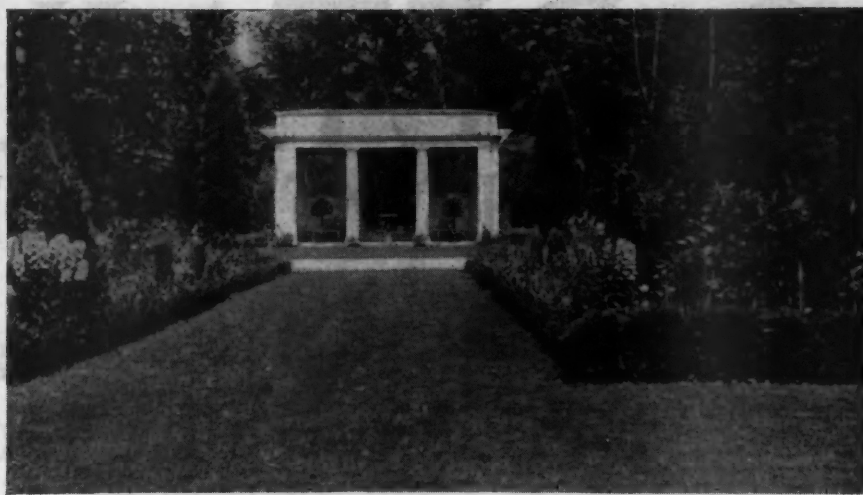
if they are not to be clipped. A seat at the side of the garden also makes a sojourn there a restful one. Here in quiet peace we can glimpse beneath the rose-covered arch the sun-flecked lawn area beyond, in which the fine old elm and oak bring strength and dignity to the scene.

The summer-house may take many forms, but should harmonize architecturally with the style of the residence. Built-in seats, and a folding table are inviting for tea or luncheon.

The tall spicy blooms of the chrysanthemum in yellow and pink clusters, faced with the shorter and more compact white anemone, flank the garden steps at either side of the terrace entrance. Back of the seat at the left, where they will need to be carefully tied up, is a group of pink New England asters, while at either side of the seat, the soft colors of monks-hood and the mist-flower blend into the greens of the hedge enclosure.

The pink boltonia or daisy, and the white boltonia will help to strongly emphasize the garden corners, and serve as an adequate setting for the summer-house. These plants are especially effective against the dark green of the privet. The white rose-mallow or perennial hibiscus, like the fall blooms of our old favorite, the rose of Sharon forms a pleasing color combination with the aster-like boltonia. At the foot of the rose-covered arch to the lawns are the blue salvia, with its erect and sturdy blue flowers, and we can use either the climax aster or Feltham's blue aster to balance the color on the opposite side of the grass walk.

A most attractive color combination is assured with the use of the helenium or sneeze-weed, with the blue aster,



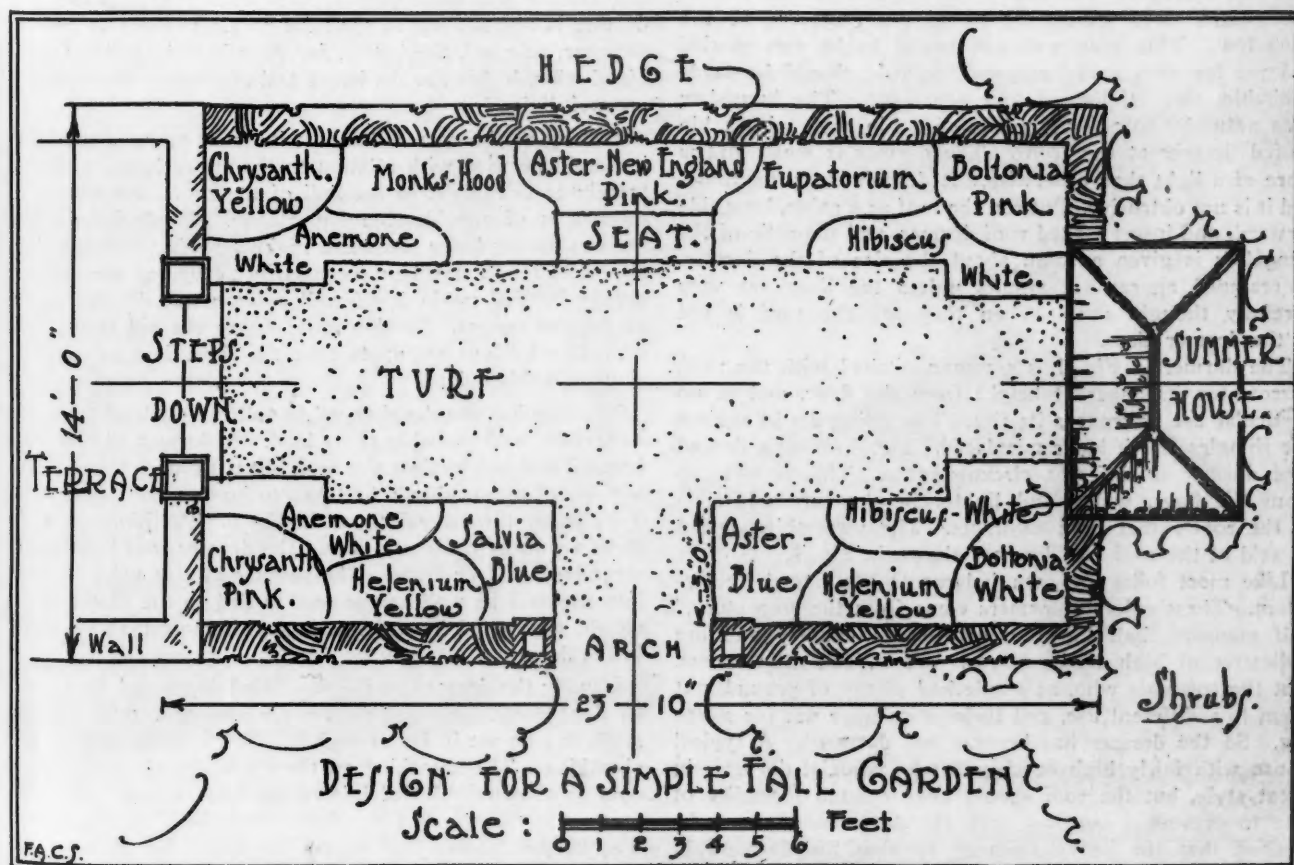
A Flower Bordered Grass Panel Leading to the Summer Retreat with a Vista of a Broad Lawn Beyond.

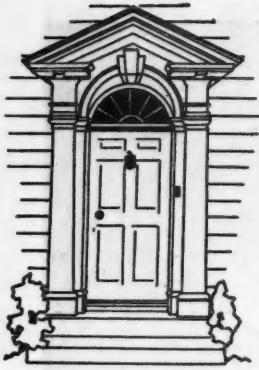
for the slender yellow spikes offer a contrast pleasing and striking.

About the garden, and back of the summer-house should be grouped shrubs which will have either attractive blooms in the fall or else twig or fruit characteristics which make them effective in our fall garden. August and September bring blooms in many varied colors to the rose of Sharon, one of the finest of the old-fashioned shrubs. Until then the shrub has been unnoticed and but a green background for the summer blooms. Some seasons the Japanese rose will bloom again in the fall, and at times even the weigelia with its red and pink bells will again burst forth in color.

Fruits may also be inviting at this season of the year. The viburnum family to which the common snow-ball belongs, gives us scarlet fruits on the high-bush cranberry,

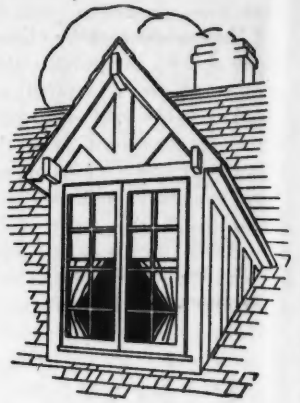
(Continued to page 182.)





DETAILS of HOME BUILDING

by V. L. SHERMAN
Lewis Institute of Technology



Detail 6—The Dormer

"YOU see some traces of our doings here. Salisbury Cathedral from the north. From the south. From the east. From the west. From the southeast. From the northwest."—Mr. Pecksniff.

The dormer, like Mr. Pecksniff's Salisbury Cathedral, should be taken from many angles, two at least. You will observe that the sketch, Fig. 1, has a pernicious, flat look. Fig. 2, which is just as stiff in line, is different. You see the outside. Unconsciously you assume the inside.

When a house is considered the same holds in a slightly different way. One eye is physical and the other mental. You see the outside. Unconsciously you assume the inside. When, as in Fig. 1, there is no character, or reason, or even a suggestion of anything within, then your mental vision registers a blank, and depth is lost. It looks flat. You wonder, perhaps, why such a dormer is put where there is so little headroom. Ergo, it's an attic. Then why put such a hole in the roof to provide a dormer. This is all cogitation as your thoughts bounce from the flat surface after you have really appraised the house.

Before taking up the large dormer as shown in Fig. 6, the smaller ones should be considered. Start with the bungalow. This type was not meant to be two storied and yet for very sound reasons the attic should be made habitable, that is, lighted and ventilated. The bungalow runs naturally to a low roof, often a hip roof, with a hip roofed dormer at the front. The dormer is small and is more of a light than otherwise. It doesn't imply anything, and it is not obtrusive. But run the roof as a gable, long side forward, and insert a shed roof dormer, and the attic of the bungalow is given a room about the size of the dormer. A cramped appearance results unless the lines are very carefully thought out. When they are the roof is not of the dormer class.

The dormer in Fig. 1 is common pitched with the roof, narrow for its apparent height from the floor, and of no particular use as regards its size. The siding fits ill against the shingles and it looks misplaced. Fig. 4 shows a decked roof dormer in different circumstances. This is well up from the floor, wider, and lighter in structure. It adds to the roof rather than subtracts. The same thing might be said of the roof and dormers shown in Fig. 5.

Like most folks my own judgments are tinged by tradition. These colonial dormers come from the "top story," half mansard, half hip roof of the old country and are indicative of high walls, narrow streets, and attic rooms. But the colonials who, as a rule had plenty of ground, put them to a different use, and their attics were not for sleeping. So the dormer has become not dormant. A typical house with fairly high eaves will take colonial dormers in great style, but the roof should have enough formality of line to prevent a contrast with the dormers. It may be noticed that the heavy chimney topping the dormers in Fig. 6 has rather too homely an appearance for the roof.

The dormer then should fairly match the roof, and if its face rises from the house wall (as it should have in Fig. 1) it should match the house and roof. It is then a roof projection. Such a projection is not always a dormer, but in its present day use the dormer classes with it. Take the shed roof dormer of Fig. 4. Then drop to the corner case-ments in the same sketch. The extended eaves provide a break and spread in the lines and cover a sort of oriel. Now go down to the bay in Fig. 7, which escapes the oriel only by its lack of corresponding floor space, but sets off the double hip roof and increases the breadth of the wall. You will notice that the comparatively narrow bay, lower roof, and upper roof all unite in emphasizing the main roof. Dormers, windows, and roof shapes are all used for the purpose of putting room location to advantage and taking advantage of windows. Dormers should be put to their very best use, but should be omitted if they are of really no use.

In Fig. 6 there is a long dormer. A miss is as good as a mile so it isn't a gambrel. The main roof is retained and the house remaining gabled in outline. The house wall is low and the roof high pitched. The class is typical and the dormer is not too big to spoil the roof. If there is one to the rear, so much the better, for their bulk is seldom combined when looking at the house and the second floor rooms are well lighted.

So long as the dormer has lost its trade mark of the loft, it should be used with relation to the entire house and not merely as dead-light in the hull of the roof. Framing the dormer is of considerable importance. Weak framing is responsible for leaky roofs and sagging roofs. The framing shown in Fig. 2 may be unnecessarily heavy but the dormer should be tied up in itself well enough to take the place of the cut rafters. In this same figure the sill could rest on a two by four set up to take the short foot rafters the same as a ridge piece.

The framing may be changed to suit the pitch of the roof, its weight, and probable snow load. A dormer of ordinary breadth will not weaken the roof, but with more than ordinary spread means should be taken to insert a well supported plate under the cut rafters as in Fig. 6. Partitions in such cases are to be made use of and the dormer roof becomes a secondary roof or truss. The dormer of size must be tied into the roof as well as the roof is tied to the plates since weight subtracted from the main roof is more than made up in the dormer.

Usually the dormer studs are carried down and supported by floor joists. If single rafters are used as trimmers these studs can be set in far enough to allow a seat for the roof sheathing. The sheathing on the dormer wall can be diagonal as shown in dotted line or level as shown. The first closes the triangle but has less spiking-hold on the studs. The dormer should not depend so much for its strength on its roof or wall sheathing.

FIG.1. GABLE ROOFED DORMER;

FRAME .FIG.2.



FIG.3. DECKED-DORMER FRAME



FIG.5. COLONIAL DORMERS



FIG.4. DECKED DORMER, and Casement Corner.

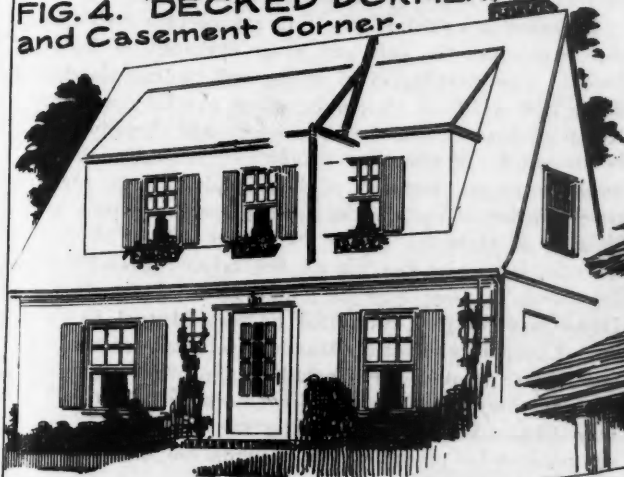
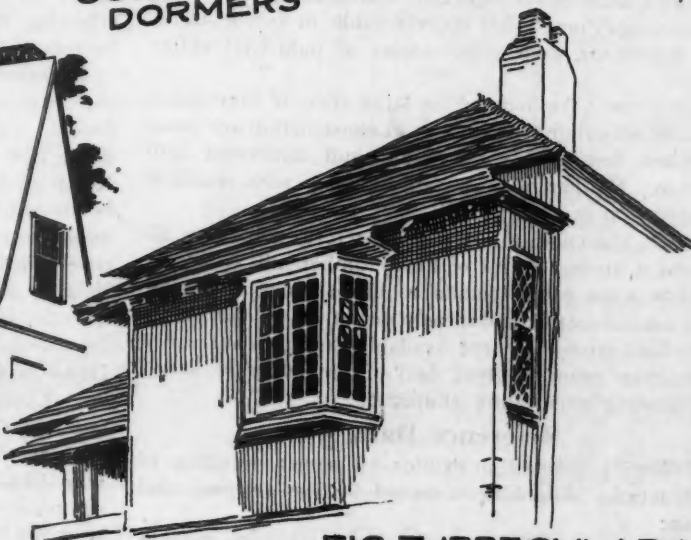


FIG.6. LONG SHED ROOF DORMER & SECTION

FIG.7. IRREGULAR HIP.



U.P. Sherman 2-6-30.



HEAVY TIMBER MILL CONSTRUCTION

*Details prepared and copyrighted by
The National Lumber Manufacturers Ass'n*



Plate No. 1 of a Series of Six

With Explanation and Discussion by Dudley F. Holtman, Construction Engineer
of the National Lumber Manufacturers' Association

THIS series of six plates illustrates good practice in heavy timber mill construction detailing. So far as is known, standard construction details in this field are not elsewhere available in simple form. Occasional searches which designers and draftsmen make for such details are likely to fail to reveal the kind of material desired. Lost time is bound to result, poor proportions and relationships of hastily improvised details are sure to be noticeable in the finished production, and features which are actually essential in this type of construction are often omitted.

Heavy timber detailing has become a specialty. Those who specialize in mill construction have sets of details designed especially to meet their needs. Those who only occasionally are called upon to design buildings of this class usually improvise details as the need develops. This series of plates is intended primarily for this latter class, though its use by specialists as well would help standardize procedure. Its use in the drafting room should save the time of draftsmen and designers and help toward a more widespread knowledge of good practice in timber detailing. Proper detailing is the essential feature of most types of construction. The general design may be sound in every respect, but unless the connections are properly proportioned and secured, lack of stability and sometimes actual failure occurs.

These details are based upon a careful field examination of recently erected buildings built in conformance with well established design principles. As a consequence they reflect current practice in its highest and best form.

As originally practiced in the textile mills in New England, standard mill construction is no longer suitable for the congested areas of our modern industrial cities. Close column spacing, though not objectionable in textile mills, seriously handicaps some other forms of industrial enterprise.

In order to meet the demand for large areas of floor space unobstructed by columns two types of construction are used; the so-called semi-mill construction and laminated mill construction. Neither of these types comply with standard mill construction in every detail.

The details shown in this series, therefore, will cover all three of these distinct forms of heavy timber mill construction. Many more useful details could be added but those given are representative and clearly depict the fundamentals of the various types. If kept available for quick reference in the drafting room, a great deal of time may be saved and aggravating uncertainty eliminated.

Reference Data

The following general principles of proper detailing of heavy structures should be observed by the designer and draftsman:

The method of framing girders is important. Sometimes double beams with an air space are substituted for the closely bolted girders shown in these details. The idea of the air space is to facilitate drying and thereby prevent the rotting of the timber. It more frequently does just the

other thing, that is, makes a culture chamber for fungus and also encourages the progress of a fire where it is impossible to get at it and where it can quickly weaken the entire frame of the building. Where it is impossible to get beams sufficiently large in a single section to carry the girder loads, it is generally considered better practice to bolt them solidly together than to leave a small air space.

Post caps of structural steel are sometimes used. These caps when they support the entire load of the girders make the building no better than one with a structural steel frame. Whereas, when the columns are carried through the floor with iron pintels with the beam supported largely on the column below, the slow-burning qualities of the heavy timber are more fully utilized. But, as a matter of fact, many of these structural qualities have not been thoroughly tried out due to the fact that with complete automatic sprinkler protection the structure is rarely exposed to sufficient heat to test it seriously.

The corbelling of the brick work about the edges to make a tight joint between the wall and floor prevents the shrinkage of the plank floor leaving a wide crack next to the wall which can quickly carry a fire from floor to floor. Drafts in this position can cause the rapid burning off of ends of supporting timbers. This is a matter worth emphasizing to show that the tightness of this joint is of more importance than simply the support of the floor planks. It should be noted that clearance has been allowed next to the wall to provide for swelling of floor.

A detail of an interior floor drain is shown. Such drains are sometimes used instead of a scupper. They have certain advantages and are an acceptable alternative.

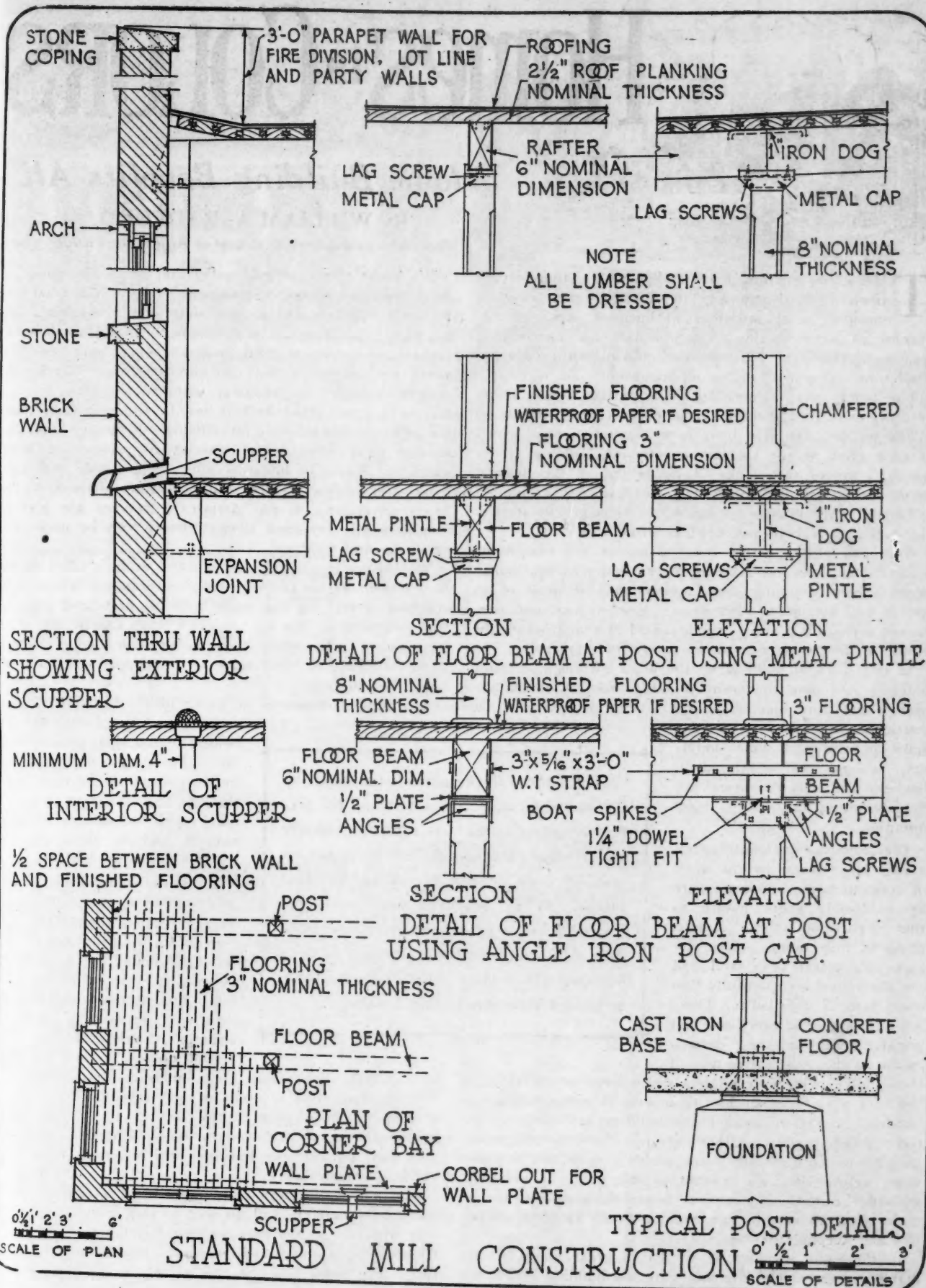
It should be noted that the supporting girders are not bolted to the wall plate. Such girders should be self-releasing and, as indicated, held in place by a rib in the bottom of the plate fitting into a groove cut into the girder.

Attention is called to the importance of providing suitable protection for belt and shaft openings in walls and floors. The installation of swing and sliding tin-clad fire doors and windows should be given careful consideration. Room enclosures for electric motors and dynamos should be provided. Steam pipe protection, protection of beams under bearings, location of hose pipe casings for cellar pipe, location of stock racks to keep sprinklers free, interior tin-clad shutters for severe exposures—all of these items have an important bearing on fire safety. Booklets covering these features may be obtained from the Inspection Department of the Associated Factory Mutual Fire Insurance Companies, Boston, Massachusetts, under the following titles: Rules for Installing Sprinkler Equipment; Specifications for Tin-clad Fire Doors and Shutters; Beltway Fires (Experience showing the urgent need of, and suggestions for providing non-combustible sprinkled enclosures for main belts).

NOTE: Dimensions are given whenever they are of significance in the practical application of the detail.

Plate 2 of this series will appear in the October American Builder.

Detail
Sign



MILL CONSTRUCTION DETAILS—PLATE No. 1

Detail Drawings of Various Features of Proper Mill Construction with Dimensions Given Wherever They Are of Significance in the Practical Application of the Detail. American Standard Lumber Sizes and Grades Should be Used.



Homes in COLORS

Home Building Benefits All

By WILLIAM A. RADFORD,

President and Editor-in-Chief of American Builder

THE entire building field—and home building in particular—is, to our way of thinking, the sweetest, cleanest, most satisfying of business activities. It benefits all parties to the transaction and is a constructive, creative force in every community, making for prosperity, wholesome enjoyment and good citizenship.

The family that is building or acquiring a new home becomes more thrifty, more contented and better neighbors.

The builders are kept busy in a productive way, which in turn gives steady employment to the building trades workers, moves the stocks of goods out of the dealers' yards and stores, and keeps the factory wheels turning.

This all spells prosperity; and it has its origin, its start in the building of homes and other structures.

But back of the actual construction of the new home always must come the forming of the desire for the home, because home building costs money and for most of us means real sacrifices, other things done without and consistent savings laid away over a period of years, before the home building enterprise can be safely undertaken.

In this work of building up the home owning and home building sentiment the entire building industry should co-operate and work together, and it is very gratifying to the AMERICAN BUILDER to see the fine spirit of team-work which builders, dealers, real estate men, bankers and manufacturers are demonstrating in many communities.

We ourselves are contributing a very large factor to this work of creating home building desire by publishing every month in this department these sixteen pages in full colors. These designs are selected so well and are illustrated so beautifully that every taste is appealed to. There are homes here of every size and popular style; and these designs in the hands of the active men of

the building field, both builders and dealers, are brought to the attention every month of thousands of prospective home builders. Some of these home builders are ready to go right ahead at once. Others are more remote prospects; they are in the beginners' class; and it may be two or three years before they get around to the point of breaking ground. But these beautiful home designs are having their effect all of the time, making home building attractive and keeping the idea alive.

In the same way we know that a great many of the manufacturers of building materials and building specialties have gone to large expense in the production of beautifully illustrated catalogs and circulars and display advertising which has a strong popular appeal and which promotes the idea of home building in a broad, constructive way, in addition to giving specific information about the particular material or commodity offered.

We know of no other industry that offers the public so much free information. The manufacturers of the building field are certainly doing their full share. Booklets and illustrated circulars are sent direct to the general public and a large variety of catalogs and booklets have been prepared for dealers to use and to distribute. Every man directly engaged in building, whether a dealer, a contractor or a real estate builder has the opportunity to make his office a headquarters for reliable information and persuasive sales literature of interest to prospective home builders. Books of home designs are available and hand books and catalogs can be secured. Many of the manufacturers advertising in the AMERICAN BUILDER are glad to furnish neatly prepared samples which can be made into an interesting display.

We believe that every builder's and dealer's office should be a service station and a center of information where those thinking of building can easily turn for first-hand information and advice. We do not think there can be too much information or too many boosting for such a good thing as home building, or too many well equipped with all the latest information.

The lumber dealer is in many places the most logical center for the distribution of home building ideas and information. The people naturally turn to their local lumberman when thinking of building; and his office and salesrooms are the natural meeting place for contractors and home builders.

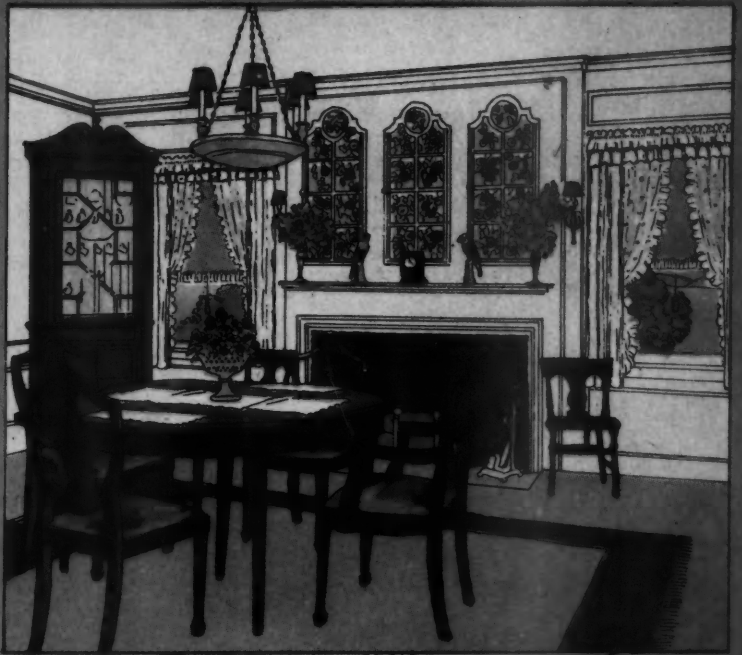
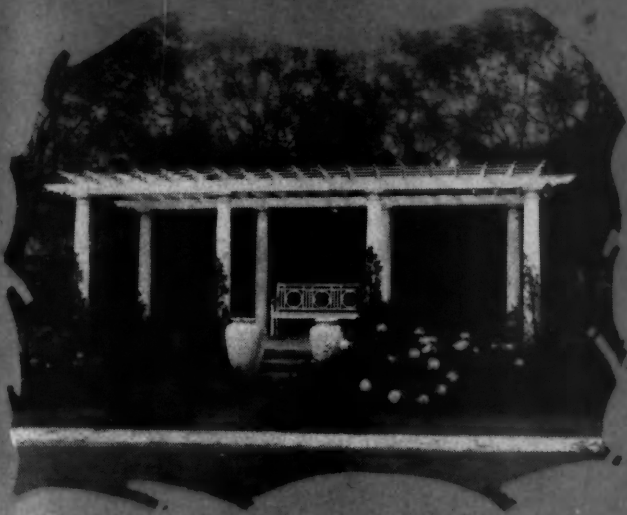
We know of hundreds of lumber dealers in every state who have equipped themselves with plan books and other helpful material calculated to increase the public's interest in home building. Among these probably the best liked are the 12-sheet poster calendars in beautiful colors illustrating modern homes, and similar

calendars illustrating farm buildings. Also there are monthly magazines of home designs in colors for distribution among those about to build. The best lumber dealers are distributing these calendars and home design magazines, and they are creating business which benefits the entire building industry.

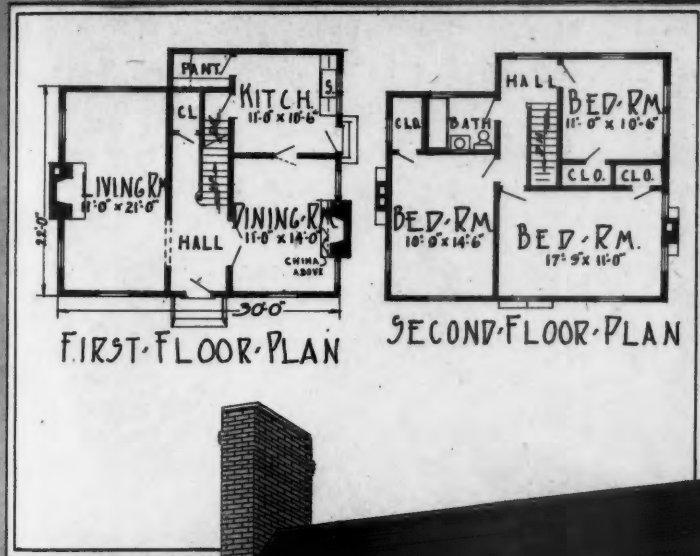
Building contractors, carpenters, real estate men and investment builders will do well to co-operate wholeheartedly with the dealers who are spending their money to distribute this beautiful and persuasive home building literature. The home building and home owning idea is being sold to your community and business in time is sure to result.

AMERICAN BUILDER readers are armed with similar good home selling ammunition in every issue of this magazine—in our 16-page Homes in Colors section. We hope you are using these beautiful designs to the utmost.

Check through the advertising pages of this magazine and take note of all the different concerns that are offering samples and books, catalogs and circular matter calculated to interest the home building public. Write to these manufacturers; you will be surprised and pleased at the help they stand ready to give you in your big job of selling, planning and constructing homes and other buildings.

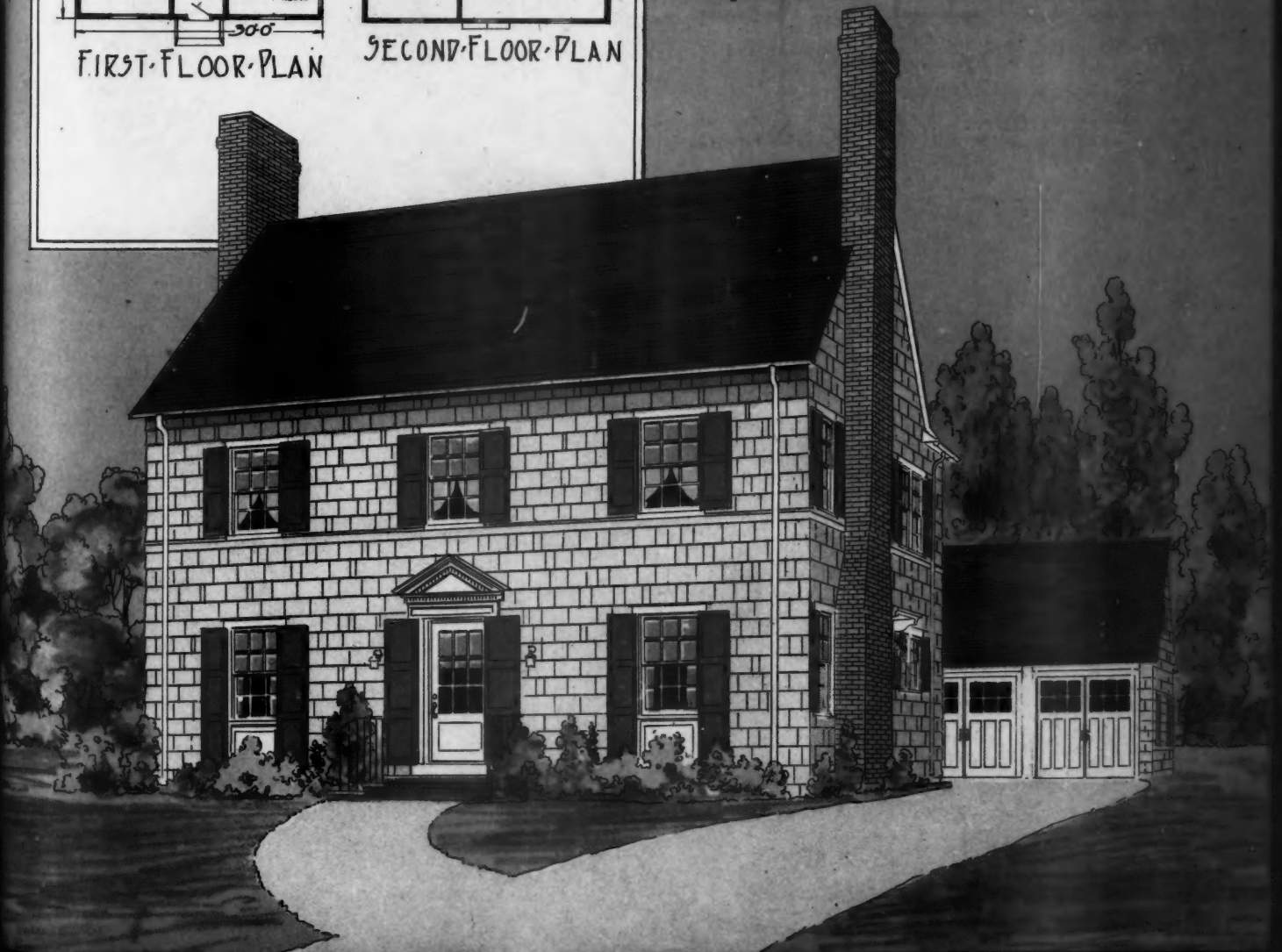


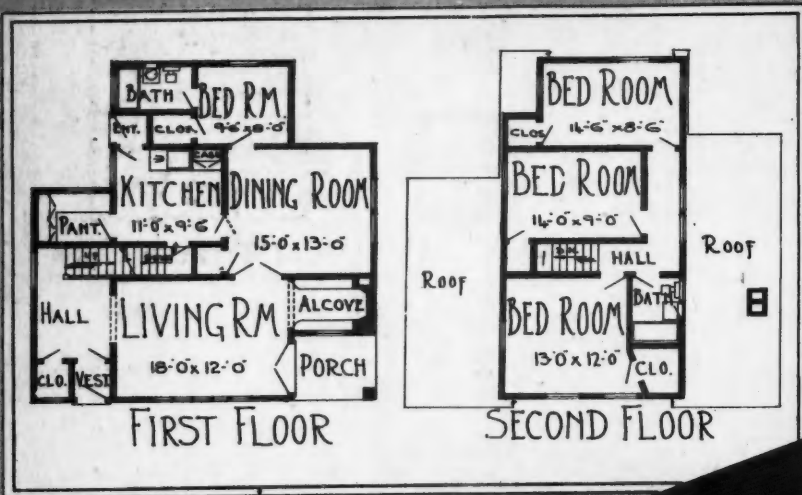
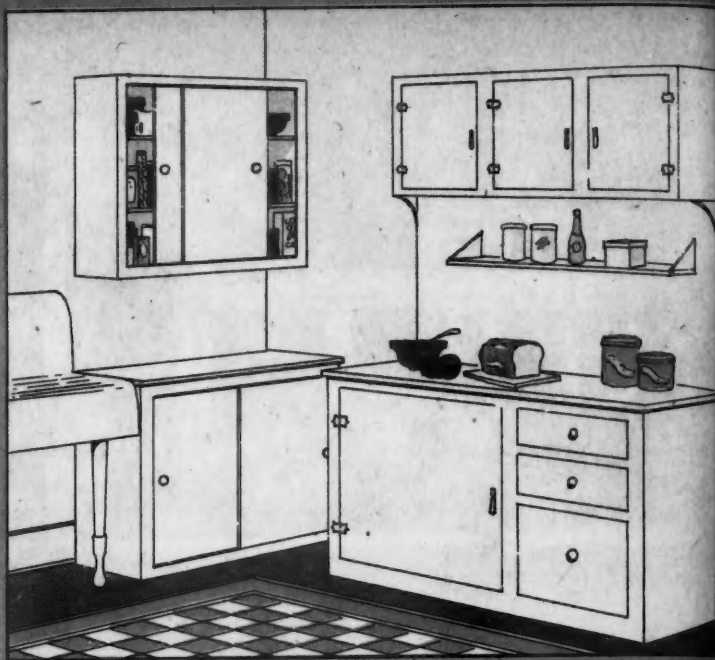
Pat. March 15, 1921 and Sept. 30, 1924. Copyright 1925,
Wm. A. Radford, Chicago.



The Lawton

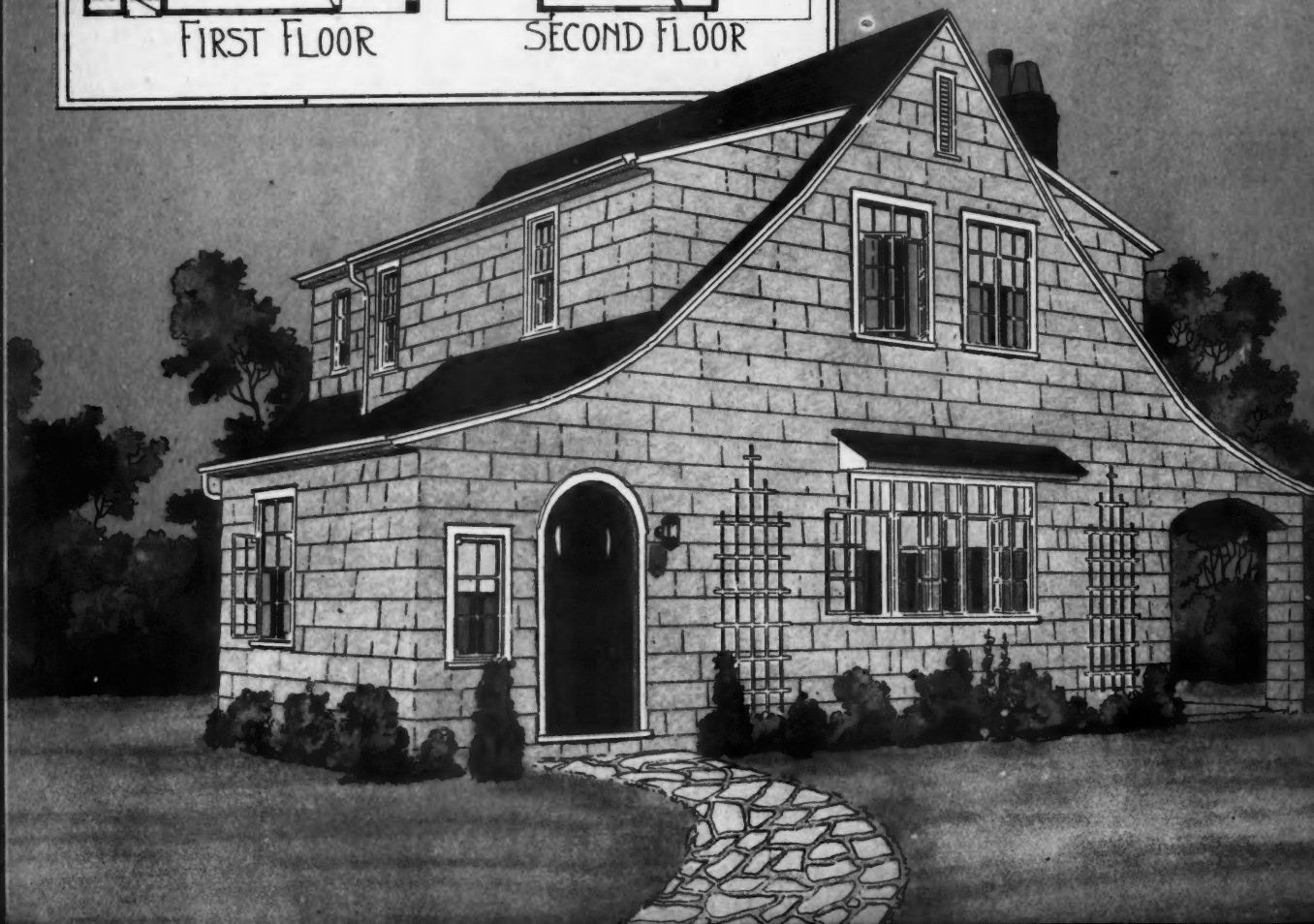
A DIGNIFIED Colonial home of six rooms with garage to match. Color sketch above shows well furnished dining room.

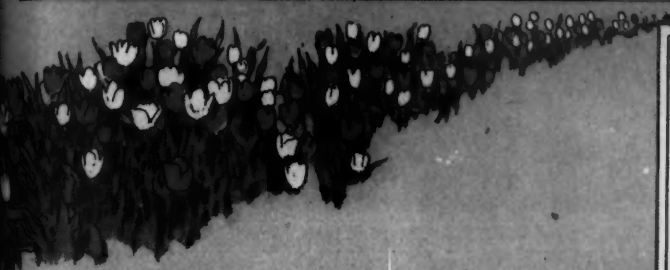




The Lakeside

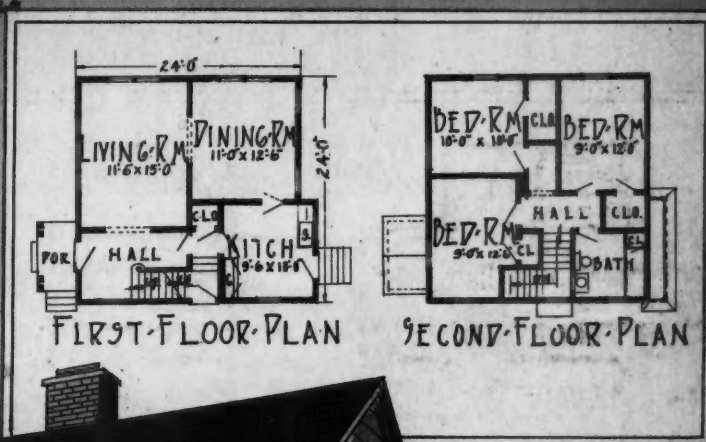
A DELIGHTFUL English cottage of seven rooms—a very artistic design. Color sketch suggests convenient kitchen arrangement.





The Lewiston

A STRAIGHT gable Colonial home of six rooms, square in outline. Color sketch above shows bedroom with modern furnishings.





*The living room
in a New England
Colonial home, fur-
nished for comfort.*



*The marble mantel extending
from floor to ceiling and almost
filling the end of the room, is the
feature of this living room in
the Italian style.*

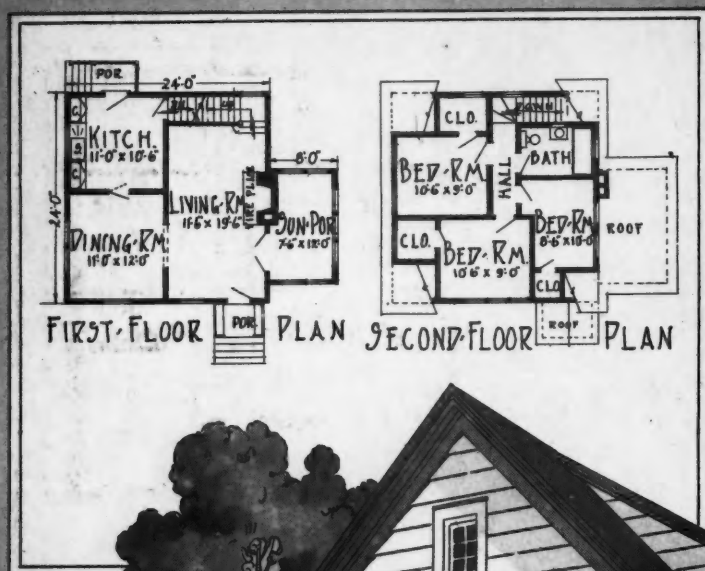
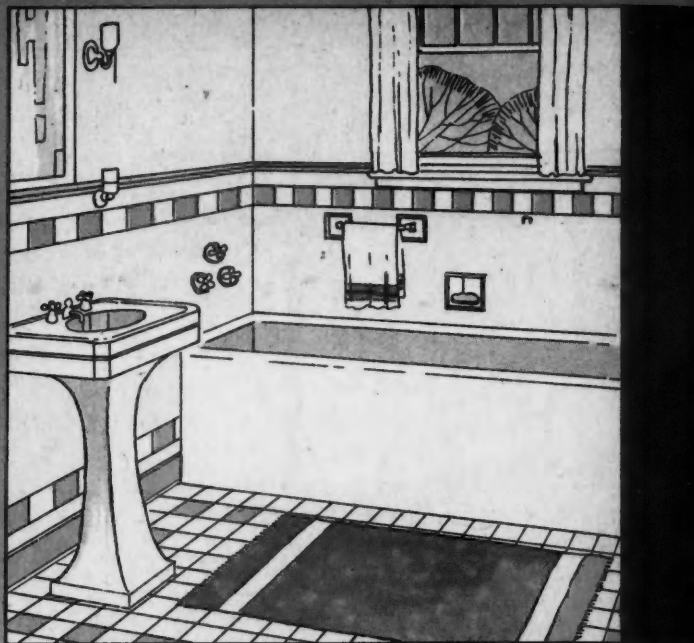
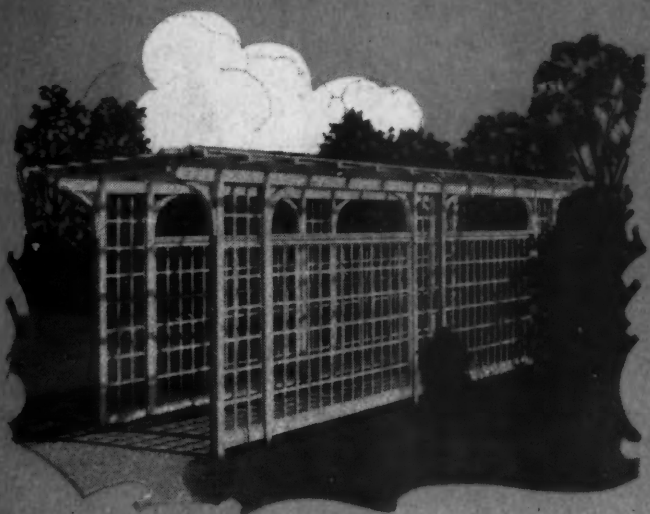


The wood paneling and the open book shelves give an air of restful quiet to this living room library.



A living room with old English beamed ceiling and interestingly furnished.





The Lexington

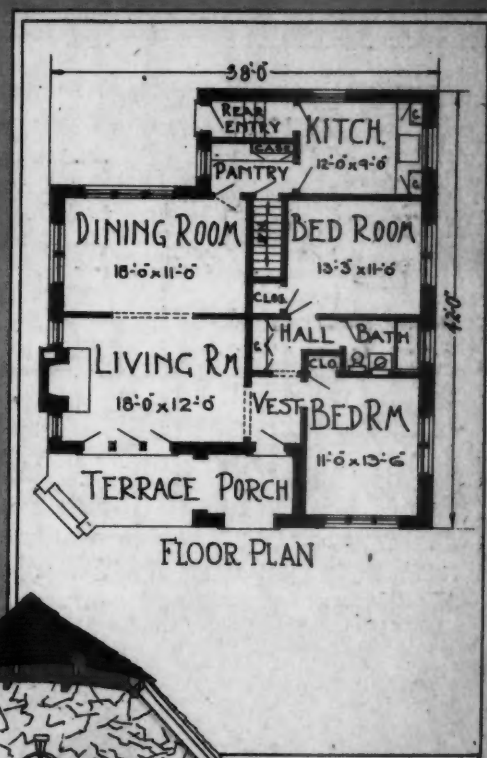
A STORY-AND-A-HALF English cottage of seven rooms with modern sun porch addition. Color sketch above shows beautiful tiled bathroom.

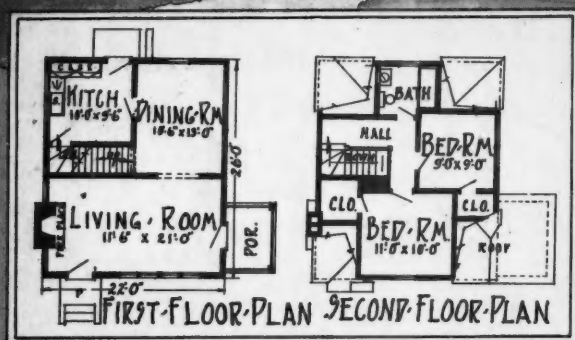




The Lafayette

A BRICK house in the French cottage style containing five rooms and bath very well arranged. Color sketch above suggests the interesting decorative and furnishing scheme for one of the bedrooms.



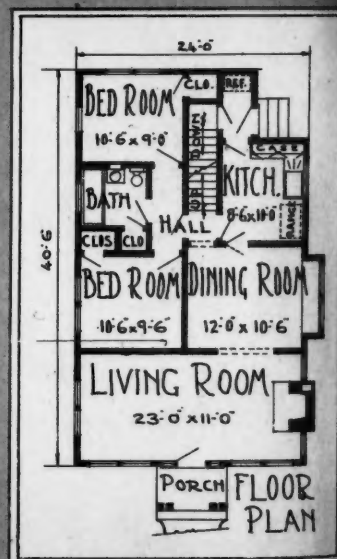


The Linwood

Sketch above and floor plan to right illustrate this delightful Colonial bungalow of five rooms.

The Lehigh

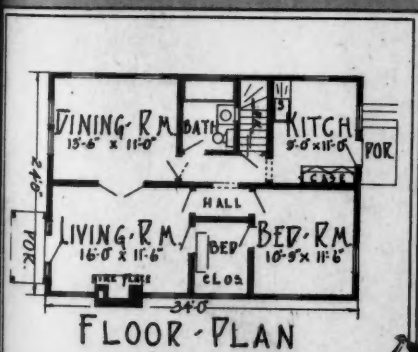
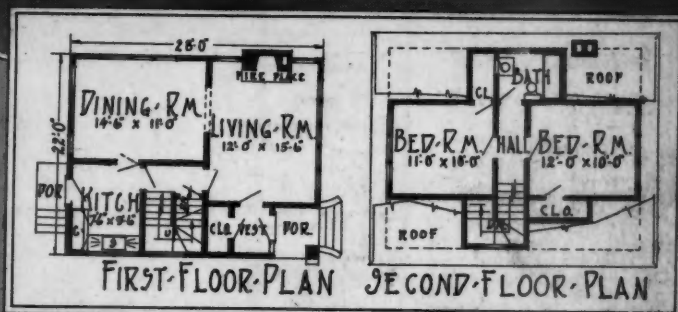
Sketch below and floor plans to left show this English type home of five rooms.





The Lincoln

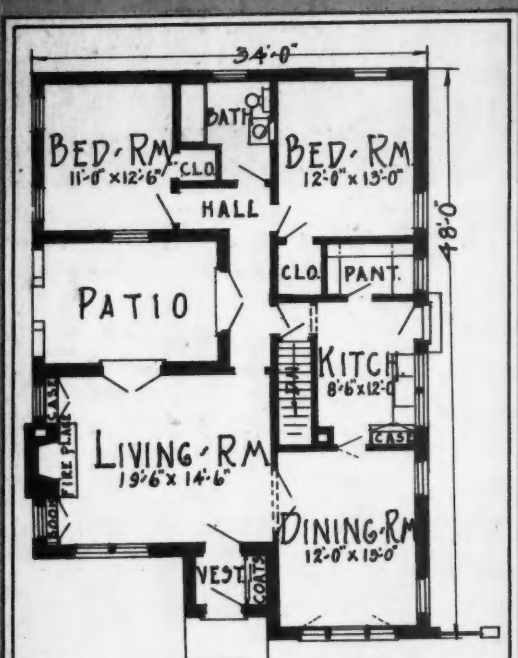
Sketch above and floor plans to right show this attractive narrow lot home, 22 x 28 feet.



The Liberty

Sketch below and floor plan to left show this English cottage of four rooms, but with five-room efficiency.





FLOOR PLAN

The Lamar

HOME designs of the Spanish type continue to intrigue the architects and builders and to arouse the enthusiasm of the home-buying public. Constructed of stucco in warm colors and with antique tile roofs in yellow and red, these homes of Spanish lines give indeed a new look to the suburban landscape.

The Lamar is a five-room and bath bungalow, though the patio enclosed on three sides really becomes another room and will be, in most places, a very much used part of the home.

This house measures 34 x 48 feet. The living room and dining room have the prominent position at the front; the kitchen is conveniently placed in the middle, directly back of the dining room, which leaves all of the back of the house for the two bedrooms and bath. This arrangement assures privacy and quiet for the sleeping rooms.

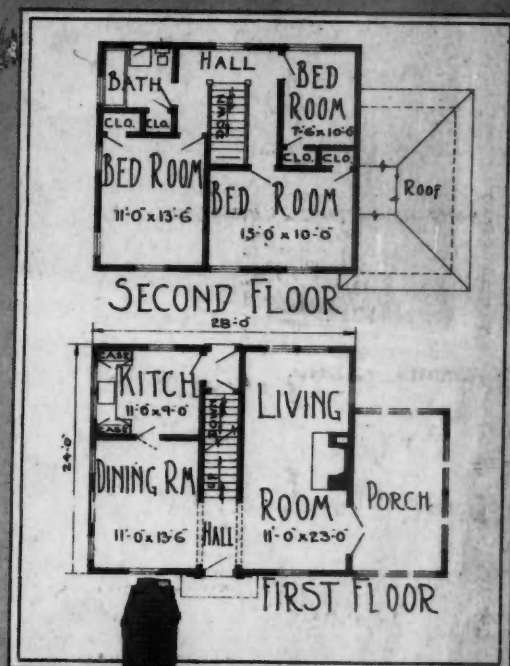
The color sketch above shows an interesting treatment for the high ceilinged living room with open rafters in the primitive style. The big fireplace with flanking bookcases fill one end of the room.

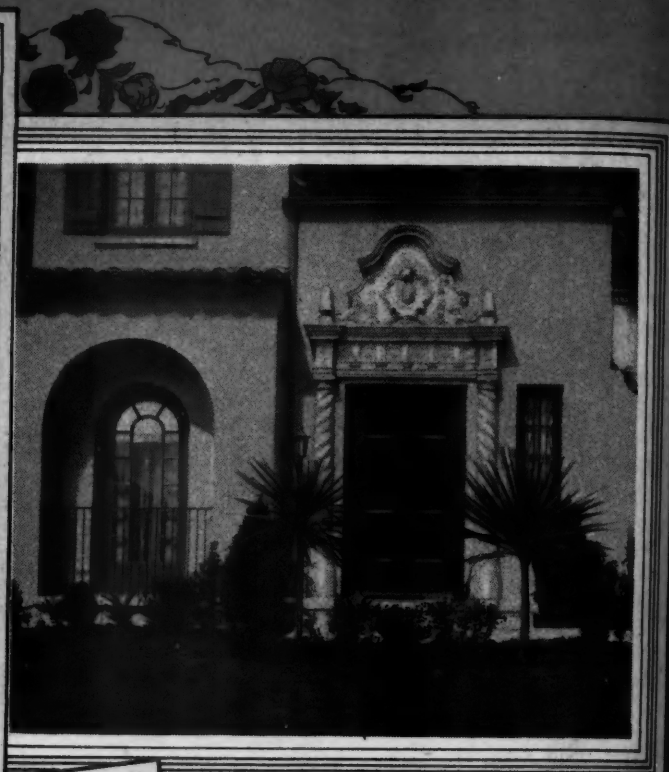




The Lawndale

A PRACTICAL home of the square, hip roof type made interesting by breaking the roof line for the upper windows. This house contains six rooms and bath. Color sketch above suggests appropriate furnishings for the living room.





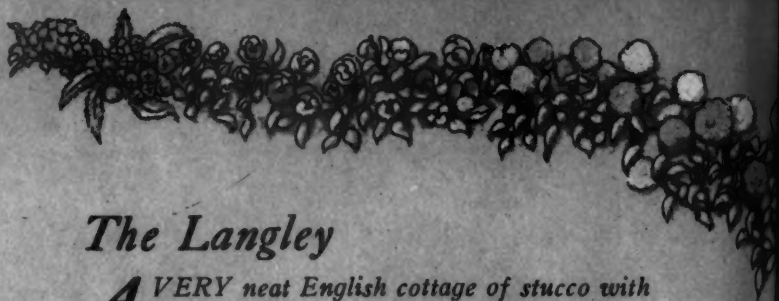
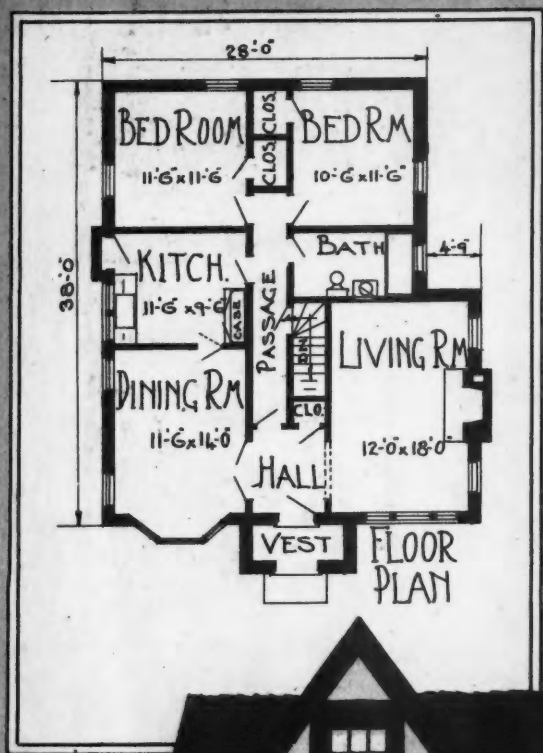
Close-up photograph of several Spanish entrances showing a variety of good architectural suggestions for homes of this popular style. These range all the way from the severely plain to the elaborately ornamented.





Close-up photographs of windows in the modern Spanish style as built in California and elsewhere.

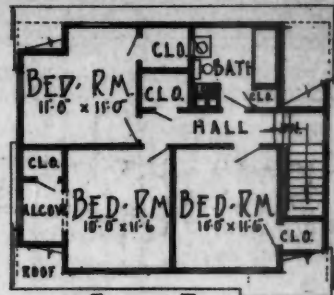
Large ornamented windows, either singly or in groups, characterize the Spanish.



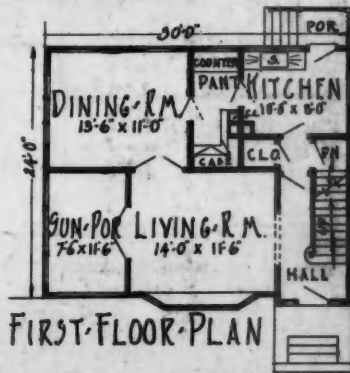
The Langley

A VERY neat English cottage of stucco with brick trim around the entrance somewhat in the Tudor style. Floor plan to left shows a very convenient and satisfactory arrangement of the five rooms. This is a home arranged so perfectly that all housekeeping needs have been anticipated. Color sketch above illustrates the charming dining room.





SECOND-FLOOR PLAN



FIRST-FLOOR PLAN

The Latham

A DUTCH Colonial home of extremely graceful lines containing six rooms and bath besides the large sun porch and the vestibule hall. For a house only 24 x 30 feet, this contains an exceptional amount of space. Color sketch above shows the sun porch used as a radio room.



OUR FRONT COVER HOME



A Half Timbered English Cottage, Pleasing to the Eye and Economical of Floor Space in the Grouping of Its Six Rooms

THERE is always something solid and homelike in the appearance of the English cottage type of house which has a lasting appeal. Of this sort is Our Front Cover Home this month and there is much to recommend it to the prospective home builder. An interesting roof line surmounts the stuccoed and half timbered walls which are given a decorative touch by the brickwork of the chimney, around the entrance and under the casement windows of the living room.

This brickwork, under the windows, creates the feeling that the house is sitting up on a foundation whereas, in fact, the floor line is almost at the grade level. The half roof above, as well as the extension of the main roof down over the entrance relieves the effect of height which would otherwise result from the long vertical lines of the timbering.

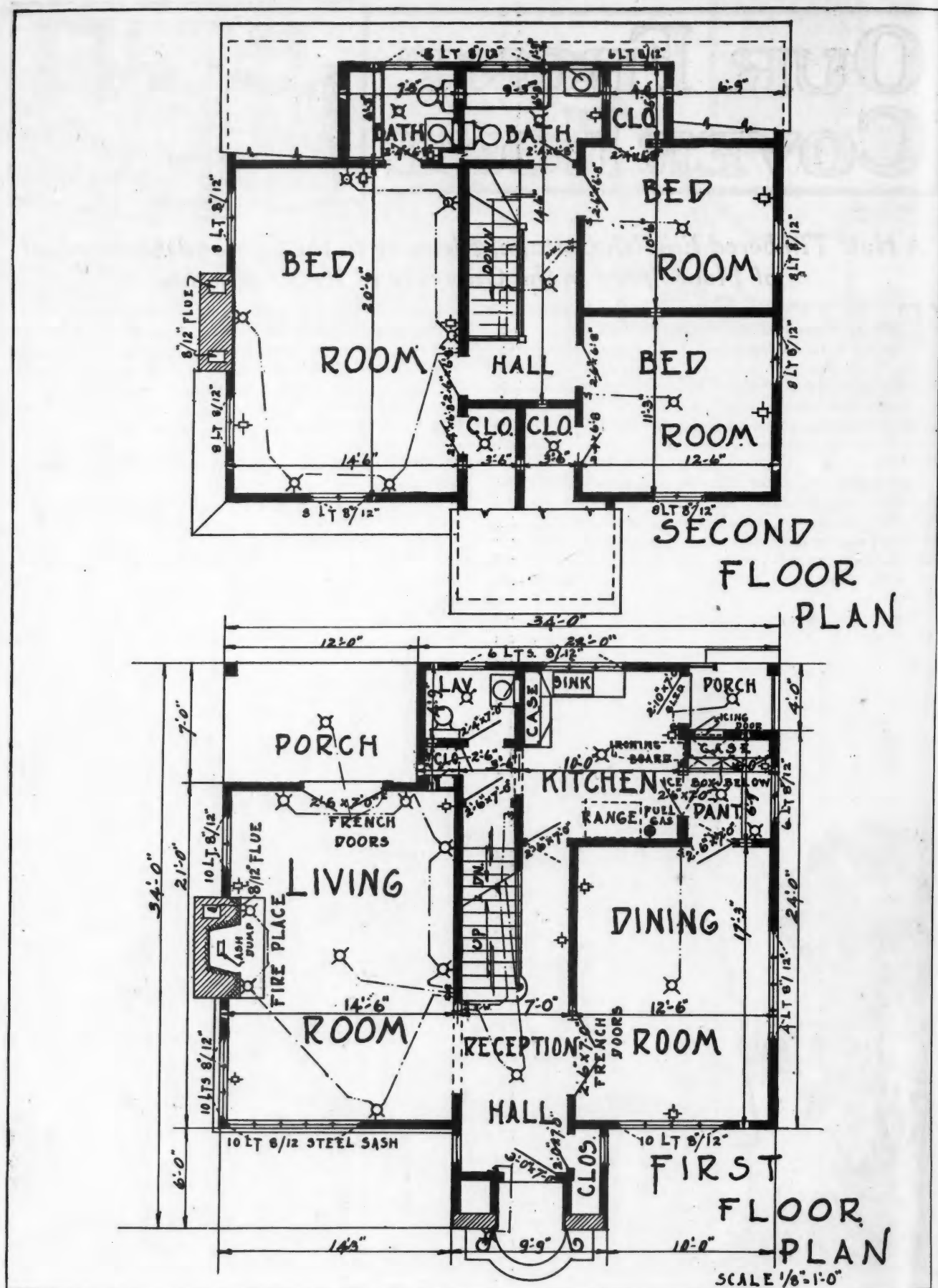
The entrance is approached by two low steps and leads into a reception hall off of which a coat closet is provided.

This also serves as the stair hall and as a passage to the kitchen at the rear of the house. Doorways at either side give entrance to the living room and dining room and the former is also entered, at its rear, through a doorway opening onto a small porch. This living room extends on one side of the house for its entire depth and is a large room, $14\frac{1}{2}$ by 21 feet, with a fireplace at one side. Casement windows occupy the entire front corner giving it all the advantages of a sun parlor without requiring a separate room area.

The dining room is also large, $12\frac{1}{2}$ by $17\frac{1}{4}$ feet and is made light and cheerful by large windows on two sides. A door to the rear leads through a pantry into the kitchen. This pantry, which is provided with built-in cupboards and an ice box which can be filled from outside, effectively separates dining room and kitchen. A rear entrance opens from the kitchen onto a small back porch and, at the end of the central hall there is a lavatory, conveniently located.



Our Front Cover Home Is an English Cottage with Half Timbered Walls Which Presents a Most Attractive Appearance and Offers a Floor Plan Worked Out for Living Comfort. Floor plans, elevations and wall section will be found on the four pages which follow.

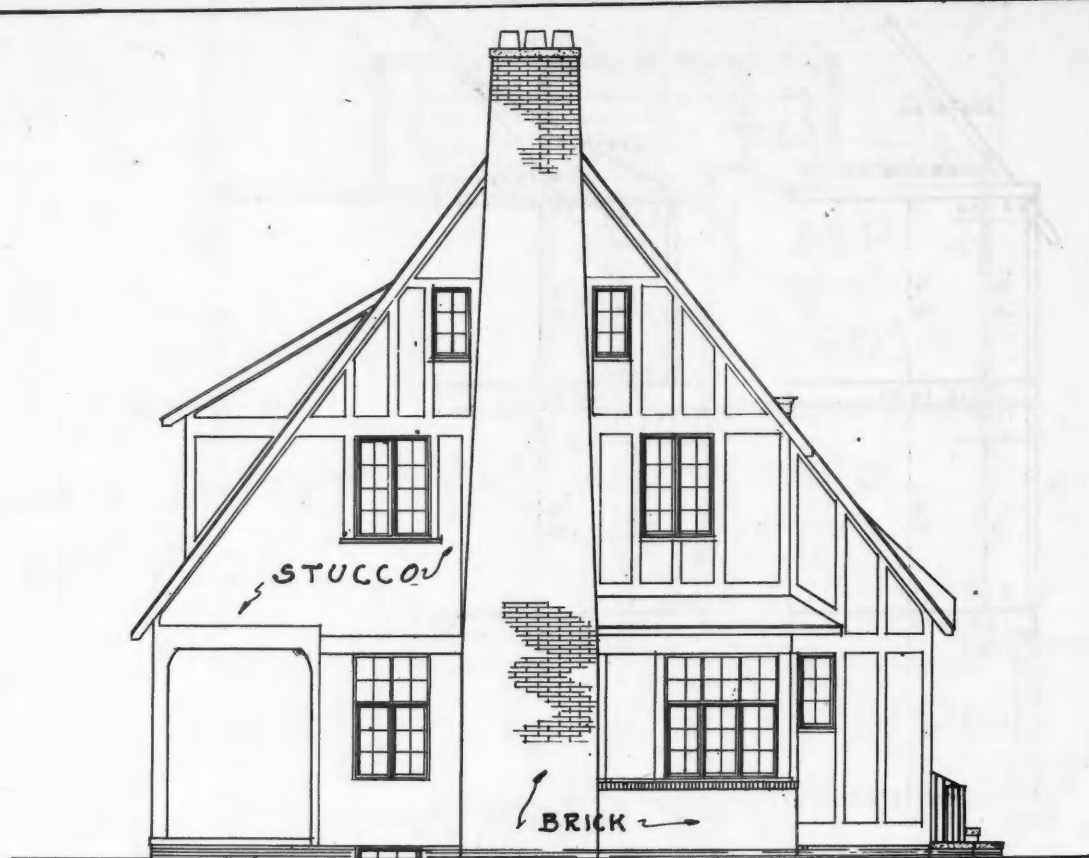


First and Second Floor Plans Show a Most Economical Utilization of Space and a Careful Consideration of Living Comfort, as Well as Consideration of the Practical Requirements of Economical Construction. On the opposite and following pages are further drawings.

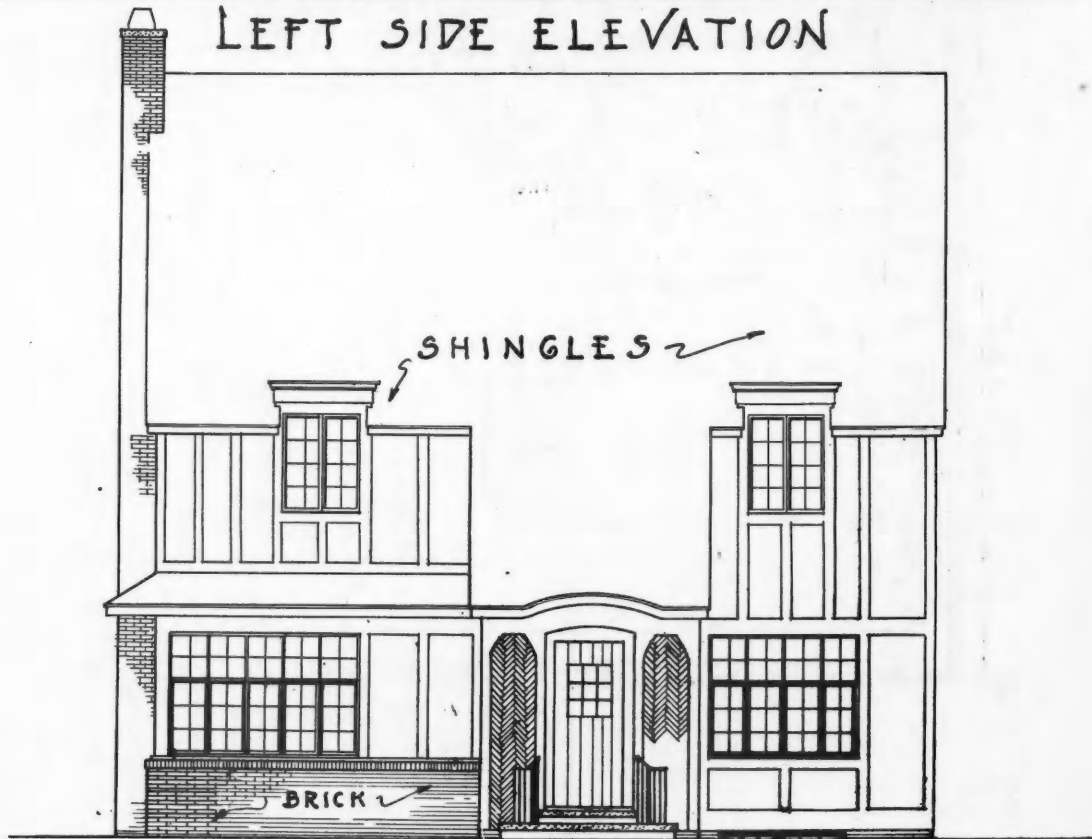
Here Ma



Here May Be Seen the Basement Plan of Our Front Cover Home and Two Typical Wall Sections, Front and Rear.
For the elevations turn to the next two pages.



LEFT SIDE ELEVATION

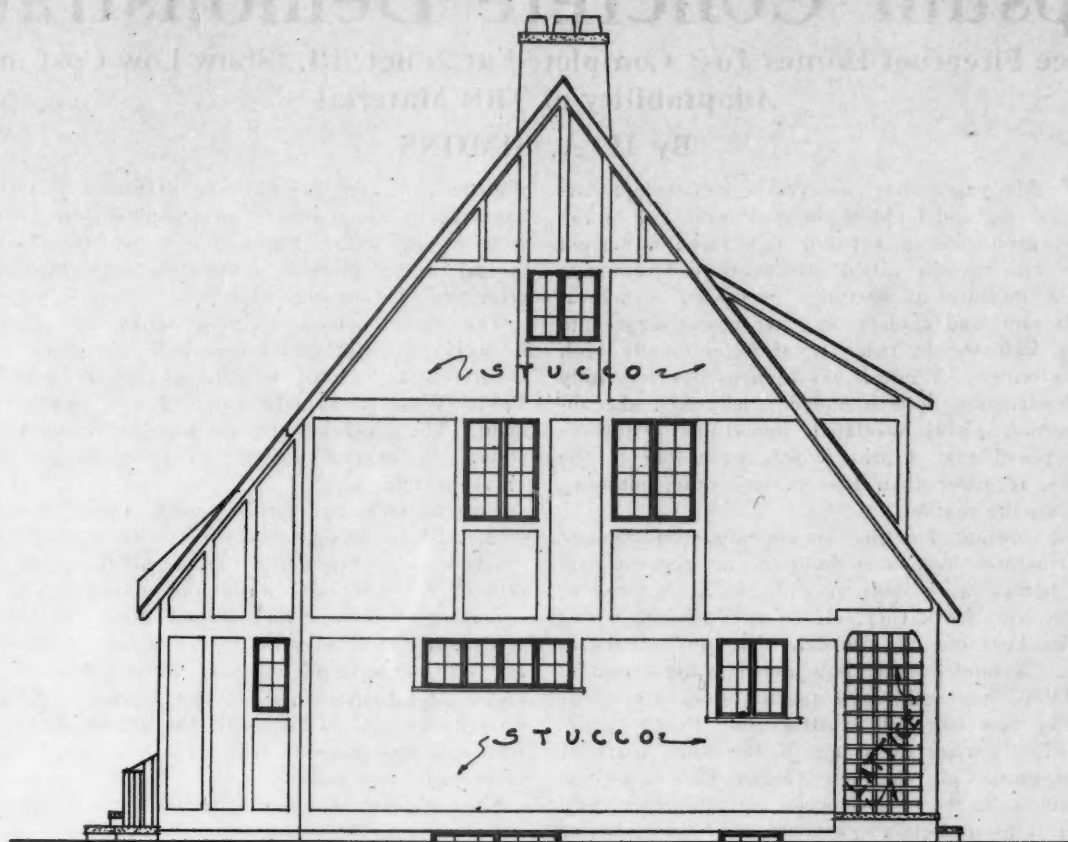


FRONT ELEVATION

SCALE $\frac{1}{8}" = 1'-0"$

Front and Left Side Elevations Showing Further Points in the Construction of Our Front Cover Home Including the Brickwork Which Sets Off the Front of the House.

The Ro



RIGHT SIDE ELEVATION.



REAR ELEVATION

SCALE $\frac{1}{8}'' = 1'-0''$

The Rear Elevation of Our Front Cover Home Shows the Treatment of the Small Porches at the Rear Corners of This House with Their Doors Into Living Room and Kitchen.

Gypsum Concrete Demonstrated

Three Fireproof Homes Just Completed at Joliet, Ill., Show Low Cost and Adaptability of This Material

By H. A. SIMONS

EARLY this year, after six years of development-work, testing and building on trial scale, one of the largest producers of gypsum announced a system of residence construction called structolite concrete. It consists of a mixture of specially processed structural gypsum with sand and cinders or other coarse aggregate to produce a light-weight concrete of exceptionally high compression-strength. While it has been used successfully in factory-construction, it is intended chiefly to make absolutely fireproof, highly insulated, monolithic residence-construction possible at a price which, according to the manufacturers, is lower than that of any other masonry construction on the market.

During the present building season numerous houses and other structures have been built of the gypsum concrete. Ten homes were built at Cohoes, N. Y.; twelve in the Bronx, New York City; eleven at Yonkers, N. Y.; two at Milwaukee; one at Hinsdale, Ill.; and others at other towns. A model home now under construction at Sandusky, Ohio, has walls and partitions of structolite concrete. The new city hall at Brigantine Beach, N. J., and the bus-line garage there are of the same material. At Santa Monica, Cal., the new Ocean Park Egyptian Ballroom, said to be the largest ocean pier on either coast devoted entirely to amusement purposes, is of this material. It also has been used for numerous service stations and garages, public and private, and in some industrial buildings.

Three absolutely fireproof eight-room homes have just been completed at Joliet, Ill., and two others are being built there now. Although unusual labor-conditions were encountered and although other circumstances deviated

slightly from the normal, the standard practice for the handling of the material, as recommended by the manufacturer, was followed and these houses may be considered typical of the methods of building with the gypsum concrete and of its cost in place.

The three houses were designed by Thornton and Rodecker, architects, of Indianapolis, for R. P. Blake, O. P. Beeson and Edward Klupmeyer, to be built in A. A. Parks' West Acres subdivision, a new restricted development. The general contractor was the Kaiser-Ducett Company. In general design, all three houses are of the English style.

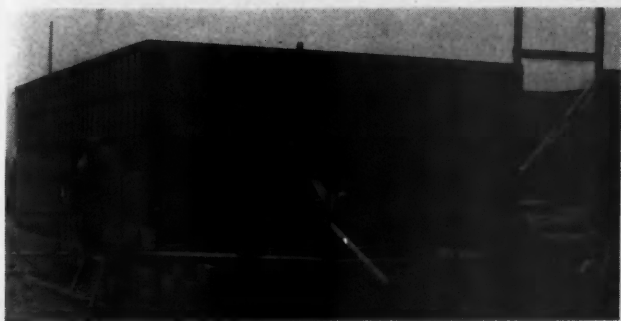
Two of them are finished with stucco; the third—that of Mr. Blake—has a brick veneer over the first story with stucco above. The foundations of all three are of portland cement concrete; the walls and partitions, of structolite concrete; their first and second floors, of gypsum floor voids suspended on reinforced concrete joists. The roofs are of wood covered with asphalt shingles laid in random style. Metal casements and sash were used in some cases, though not all. Thus, with the exception of casements, trim and roof-frames, these three houses are built entirely of fireproof materials.

Since gypsum is a non-hydraulic cement, the foundations were carried 18 inches above grade-line and a strip of 40-pound water-proofing felt was laid on their top surfaces before the structural gypsum concrete was poured. Either this procedure or the application of a top-dressing of a water-proofing compound is recommended as a precaution against the infiltration of moisture through the foundation.

Mixing was done in an ordinary batch-type concrete



A House of Structural-Gypsum Concrete Built at Elgin, Ill., and Finished in a Combination of Brick Veneer and Stucco. The brick is tied to the walls by means of metal strips nailed to the wall and embedded in the mortar between the brick courses. The stucco is applied over a 2-inch, 14-gauge, welded steel, self-furring reinforcing fabric stapled directly to the gypsum concrete.



Exterior Walls of Structural-Gypsum Concrete Poured in Metal Forms. At this point the job is ready for the construction of the second floor. Note that the gypsum concrete construction begins after the foundation walls of portland cement concrete have been carried 18 inches above grade line. Door-bucks and window frames are set right in the forms and the gypsum is poured around them.

mixer. This is not necessary, as numerous constructions have been carried on in the East with hand mixing in mortar-boxes. But mechanical mixing is practical if the machine is not operated at more than 20 revolutions per minute and if the drum is kept thoroughly clean, so that the set of each batch is not accelerated by particles of set gypsum remaining in after the preceding batch. When mixed, the concrete was carried in wheelbarrows and buckets and poured by hand.

The mix was $1\frac{1}{2}$ parts structolite, 1 part sand to 3 parts cinders. This is a fairly common proportioning. It was accepted at Joliet for reasons of economy and because, figuring the maximum stress sustained by the bearing walls of a two-story residence at 50 pounds per square inch, it gave a factor of safety exceeding 18. That is to say, tests conducted in the laboratories of the Building Department of the City of Philadelphia showed that structural gypsum concrete of this mix has compression strength of 908 pounds per square inch.

These tests determined the following compression-strengths for various mixes:

One-and-a-half parts of structolite and one of sand with—
three of gravel, 1,312 pounds per square inch;
three of crushed slag, 1,297 pounds per square inch;
three of crushed limestone, 1,281 pounds per square inch.

Steel forms were used. Several jobs have been built with wooden forms, but the use of metal forms is recommended because of the economies they make possible.

Only enough forms were bought by the contractor to run two complete courses around the house. One course was adjusted around all the foundation-walls and where the partitions were to be erected. After this course was poured, the second course of forms was adjusted and poured. Now, whereas ordinary concrete requires several days to harden so the forms can be removed, this material, if unretarded, will set in from 15 to 30 minutes. To meet the usual job conditions, it generally is retarded to set in a little less than an hour. Such was the case here. Since the material acquires 60 per cent of its ultimate strength within an hour, the lower course of forms could be removed at that time and set above the second course. In this way, the same forms could be used hand-over hand until the

desired height of walls was reached; and this not only effected decided economy, but it also minimized the investment which the contractor tied up in forms.

On these jobs, all exterior walls were built 6 inches thick; interior partitions, 4 and 3 inches; and closet-walls, 2 inches.

Door-bucks and window-frames were set into the forms and the concrete was poured tight around them. Plumbing roughing was put in so that partition-forms could be adjusted around them, and all pipes and vents were imbedded in the sound-proofing insulating gypsum. Partitions and exterior walls were carried up together.

Because of the peculiar design of the houses, which were not especially planned for this type of construction, it was necessary for the contractor to obtain a few odd-sized metal forms. Spaces were left for brick fireplaces projecting on the exterior and for chimneys, although in some constructions, notably at Mt. Vernon, N. Y., these parts also were constructed of the gypsum concrete, the same metal forms being employed. The construction of the walls was completed when the outside surfaces were coated with a damp-proofing compound as an additional precaution against the seepage of moisture.

Meanwhile, the floors had been built. The houses were designed for ordinary wood floors with 10-inch joists. When the owners selected incombustible material for the walls, they decided to make the floor-construction fire-safe also. The engineers of the gypsum company recommend the combination with walls of structolite concrete of any of the poured-in-place or pre-cast gypsum floor- and roof-systems which have been developed and which have been used in public, industrial and commercial buildings for many years, to make the residence entirely fireproof. Messrs. Blake, Beeson and Klupmeyer adopted this recommendation with respect to the floors, though not as to the roofs. But changes in the exterior elevation would have been needed if floors less than 10 inches thick were selected. So it was decided to use gypsum floor tile 10 inches thick supported by beams of reinforced portland cement concrete.

The first-floor slab was supported by the exterior walls and by two reinforced concrete beams so placed as to carry the partition-walls on either side of the central hall in the first story. These partitions, and the exterior walls, supported the second-floor slab.



Building the First Floor Fireproof with Gypsum Floor-Voids Suspended on Joists of Portland Cement Concrete. One of the Fireproof Gypsum Floor-Systems that May Be Employed to Make the "All-Gypsum Home" Unburnable. A wooden platform was built up from the basement; on this the gypsum voids were laid and the portland cement concrete to form the joists was poured between them. Plumbing roughing is installed. The first course of metal forms for the exterior walls is partly adjusted, and at the extreme left the strip of waterproofing felt to cover the top of the foundation is shown.

Portland cement concrete beams were spaced 22½ inches on centers. Since the width of the gypsum floor void was 19 inches, the joists were 3½ inches wide. The maximum clear span of the principal joists was 13 feet. Their depth was 10 inches, and they were reinforced with ½-inch deformed bars so placed as to resist tensional stresses. No concrete was poured on top of the gypsum voids, but 2-inch by 2-inch wooden sleepers were placed 16 inches on centers at right angles to the joists and were fastened down by wires imbedded in the joists at the time of the pouring. To these sleepers was nailed the finished flooring.

Floor, walls, partitions and roofs having been erected, the houses were ready for interior and exterior finishing. On the inside, three coats of gypsum plaster were applied directly, without lath, to walls, partitions and ceilings. This was possible because gypsum on gypsum is an ideal chemical bond. The surfaces to be plastered were wet liberally to "kill suction" and an additional mechanical bond was provided by scratching the structolite concrete walls while they were "green." The use of the metal forms produced a surface so true and so free from irregularities that a minimum amount of plaster was required. Over heating-vents metal lath was nailed directly to the structolite concrete.

On the houses which were covered with stucco, a 2-inch by 2-inch, 14-gauge, welded steel, self-furring reinforcing fabric was stapled directly to the gypsum concrete. Stucco, in a combination of texture and color-tone typical of the English style of architecture, was applied directly over the reinforcement. On the lower part of the Blake house the exterior finish was brick veneer. Metal ties were nailed onto the gypsum concrete to be imbedded in the brick course and the brick applied as over any other frame.

The easy adaptability of the material to any architectural treatment was indicated by the fact that the plans, which the architects drew without knowledge that this material was to be used, were carried out exactly. Adaptability was shown again by the fact that stucco and brick veneer were used in different cases for the outside finish. This is borne out further by the fact that other modes of treatment have been used with equal success in other constructions. Numerous structolite concrete homes with shingle and clapboard siding have been built. In case of the former, furring strips are nailed to the concrete and the shingles are attached to these. With clapboards, the siding is attached to vertical furring strips nailed to the concrete. In one beautiful home at Milwaukee, an



House of Structural-Gypsum Concrete as It Appears When the Walls Are Entirely Poured, the Roof Erected and the Application of the Exterior Facing and Trim Is getting Under Way. In this case, a wooden roof was used, its surface covered with asphalt roofing. The big space in the center has been left open for the chimney. The black color of the lower half of the building is due to the waterproofing compound which, at this time, had not been applied over the entire structure.

exterior facing of field stone was used, the stone being set inside the forms before the concrete was poured and later pointed up with portland cement.

Exact data as to the cost per square foot of erecting the gypsum walls have been obtained from the contractors on these jobs. The following figures are based on the cost of materials delivered in Joliet; as to some items, these figures may be higher or lower in other cities. They are based also on a high wage-scale—carpenter-labor at \$1.30 an hour, and common labor at \$0.80 and \$0.85—which is considerably in excess of what may be figured for other localities, in the majority of which common labor costing from \$0.45 to \$0.65 an hour can be employed for most of the work.



Applying the Brick Veneer for the Exterior Finish Over Walls of Structural Gypsum Concrete. The metal ties are nailed right onto the walls and are embedded in the mortar between the brick courses. Note how tight the concrete sets up against the window and door frames.

Under these conditions, the cost of the steel forms to build 500 square feet of wall was found to be as follows: erection by carpenters, 10 hours' work at \$1.30, \$13.00; assistance by common labor, 5 hours' work at \$0.80, \$4.00; removal of forms by laborers, 5 hours' work at \$0.80, \$4.00. This gives a total of \$21 for 500 square feet, or \$0.042 per square foot. Rental of the forms cost \$0.015 per square foot, making the total cost per square foot of form-work \$0.057.

Material-costs were figured on a basis of one cubic yard, as follows: 700 pounds structolite at \$15.40 a ton, \$5.40; 0.28 cubic yards of sand at \$3.00, \$0.84; 0.85 cubic yards of cinders at \$2.00, \$1.90. That makes the total material-cost per cubic yard \$7.94, or \$0.294 per cubic foot.

Reducing this to terms of square feet of wall surface, the costs are as follows:

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Here Is the Big First-Floor Living Room Ready to Be Floored and Plastered. Note the walls of structural-gypsum concrete which have been scratched to provide mechanical, as well as chemical bond, with the gypsum plaster. Wire ties to which the sleepers are to be attached may be seen projecting from the portland cement concrete floor joists. Note the smooth even surface of the ceiling which now is ready for plaster.

	8" thick	6" thick	4" thick	3" thick
Form rental*	\$0.030	\$0.030	\$0.030	\$0.030
Labor on forms*.....	.084	.084	.084	.084
Concrete material.....	.196	.147	.098	.074
Labor on concrete.....	.100	.075	.050	.0375
	<u>\$0.41</u>	<u>\$0.336</u>	<u>\$0.262</u>	<u>\$0.2255</u>

*Two sides of wall figured.

The second figure applies to the exterior walls and the third and fourth figures, to the partitions in the Joliet houses. The cost per square foot of the completed wall-construction was as follows:

Structolite wall	\$0.336
Damp-proofing02
Plaster067
Reinforcement for stucco.....	.034
Labor for applying reinforcing.....	.011
Stucco, applied22
Total	<u>\$0.688</u>

It will be noted that, unlike the cases of other solid masonry constructions, no cost for labor or materials for furring, either on the inside or the outside of the wall has been included. Both these items are omitted because no furring was done, nor is it required with structolite

concrete construction because tests have proved that the material is an excellent preventer of heat-loss as well as fireproof.

Its insulating and fireproofing qualities were established by fire and water tests conducted in December, 1923, at Columbia University. A panel 3 inches thick, 9 feet wide and 14 feet long was subjected to an average temperature of 1,700° F. for one hour. As soon as the fire test was completed, a 1½-inch stream of water with a pressure of 30 pounds was turned onto the exposed side of the panel from a distance of 20 feet. These are the conditions which brick, concrete and similar constructions must meet to be approved as fireproof under the Building Code of the City of New York, and following its successful passage of all requirements structolite concrete was given that approval.

During this test, while the temperature on one side of the panel was 1,700° F., that on the other side never exceeded 210°. This shows the insulating value of this material—its ability to keep heat in and cold out, and the consequent ease and inexpensiveness of heating a dwelling built of it. Further economies are effected in insurance-costs, since this type of dwelling is entitled to the lowest possible insurance rates.

Structolite concrete weighs from 85 to 105 pounds per cubic foot while the weight of portland cement concrete is 150 pounds. This fact means considerable savings in designing and other parts of the structure.

Clay Modeling as Taught to Students of Architecture

Practically Every Piece of Ornamental Stone, Carving and Plaster Decoration Has Been First Modeled in Clay



A Pilaster Capital Design Modeled in Clay by a Student in the Department of Architecture at the Massachusetts Institute of Technology. It is intended for the vestibule of an aquarium.



A Fine Composition in Clay of Cowboy and Bucking Broncho Modeled by a Student in Architecture at Harvard University. Perhaps the late President Roosevelt was the inspiration for this design.

THE public little knows the amount of study and preparation required to produce the beautifully decorated columns, cornices, friezes and ceilings of our many fine buildings. Tracing a piece of fine decorative work to its beginning, we find an architectural draftsman who has had an art education toiling over his board to detail out in pencil the various decorative pieces and motifs.

Subject to the supervision of the designing architect, this man must create and put on paper the decorative effects which the public now sees and enjoys in such fine buildings as capitols, court houses, city halls, banks, libraries, office buildings, hotels, theaters and railway terminals.

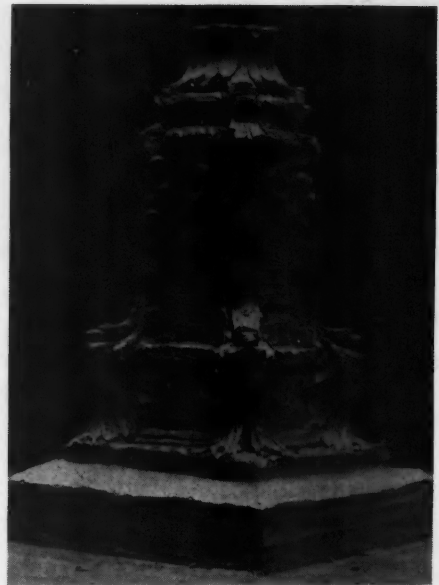
From the architectural draftsman, the plans go to a modeler in clay. This man, usually, has had an art education similar in many respects to that of a sculptor. He is usually to be found in the shops of big ornamental plastering contractors and more often than not has had his training abroad. These men are expert in working out decorative treatment and ornamentation. For this reason, the plans are often sent to them with very sketchy pencil suggestions which they then work out in detail.

Architects qualified for the designing of important buildings frequently prepare themselves by a course of training in universities or technical schools where drawing, architecture and clay modeling are taught. The architect often uses clay modeling in his mass studies of buildings in order to perfect his proportions and outlines in all three dimensions. Therefore, a training in clay modeling is particularly valuable to him.

The more important of the schools teaching architecture and clay modeling are Harvard and Columbia universities and such technical schools as the Massachusetts Institute of Technology, Armour Institute and the Carnegie Institute of Technology. In this connection it will be of interest to quote Dean Edgell, of Harvard University:

"You are correct that we have a department devoted to architectural modeling. The work is, of course, subordinate to the general course in architectural design and construction.

"There are three courses, meeting once a week and corresponding to the first three years of the student's school



Model for a War Memorial Flag Staff Base, Done in Clay by a Student in the Department of Architecture, Massachusetts Institute of Technology.

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career. The beginner starts with practice in modeling the simplest architectural ornament; for example, the egg and dart, copying an actual marble piece of Roman moulding. The attempt is made to familiarize the student with ornament of different periods, beginning in the preliminary course with classical ornament and continuing later with Mediaeval and Renaissance. At the same time, there is practice in modeling the human figure on account of its value in training the eye in proportion.

"Occasionally, students undertake special tasks like modeling archaeological restorations of parts of buildings. Sometimes the students are allowed to go ahead and attempt more ambitious work in sculpture, although this is not regarded as a regular part of the course and is not particularly encouraged."

The course of modeling in the Department of Architecture at the Massachusetts Institute of Technology is given in one three-hour exercise per week for the thirty weeks of the school year. In view of the fact that the students are studying to become architects, it is not the intention to train them in this course as sculptors or modelers, but rather to use the modeling primarily as a means of developing their sense of the third dimension. It serves also very effectually as a study in composition of light and shade. The exercises are given by means of problems, the subjects of which are distinctly architectural in character. The student brings to the first exercise a preliminary sketch, drawn in pencil. This receives a first criticism from the point of view of composition. The sketch is then developed in the model with help from the instructor on the technique of modeling.

In a former article, we presented an illustration of a mass study in clay of a cathedral design done by a former student, now an instructor in drawing at Harvard, Mr. K. J. Conant. The portico, illustrated herewith, was also done by a Harvard student, Mr. L. W. Ross. It

is very small in scale and purposely done with great delicacy. The sculptured group at the base of the column, also illustrated, is another fine example of the work of a Harvard student. The bucking



Another Example of Architectural Clay Modeling by a Student at Harvard University, Done on a Small Scale, with Great Delicacy of Treatment.



This Is a Really Fine Piece of Sculpture Done in Clay by a Student in the Department of Architecture at Harvard University.

broncho and rider done in clay is an excellent piece of work and might well represent our late President Theodore Roosevelt, in his "broncho-busting" days.

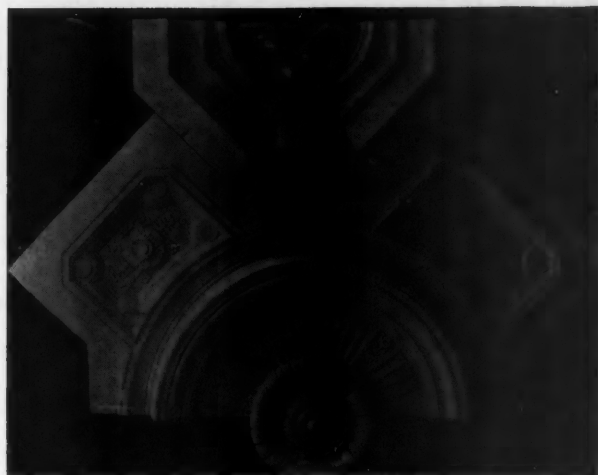
The ceiling shown is a typical example of an artistic decorative ceiling, made in the shop of McNulty Brothers, Chicago, and installed in the Union Arcade Pittsburgh, Pa.

Two examples are shown of the work of students in architecture at the Massachusetts Institute of Technology. The flagstaff base for a war memorial, while purposely rough, is well proportioned and there is sufficient detail to suggest what the figures will be—such as the winged victory figures at the

base. The pilaster capital which is shown in another illustration, is complete in detail and is appropriate for the type of building for which it was designed—the vestibule of an aquarium.

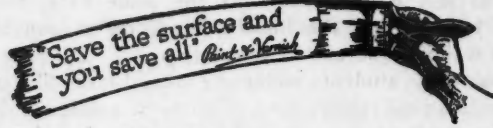
The making of plaster casts is done almost entirely in the shops of ornamental plastering contractors, principally in Chicago and New York. When the blue prints and sketches for the plaster ornamentation of a building come into the plaster shop, the modelers, dressed like sculptors in blue smocks, set to work to model the ornamentation in clay to the actual dimensions indicated on the prints. The architects, as a rule, do not furnish clay models, preferring to have this work done in the plaster shops which make a specialty of it.

The separate pieces of ornamental plaster are then assembled in place by plasterers on the job, so nicely matched that they appear to be continuous, without break or joint. In the case of an ornamental ceiling, there are usually a number of designs and a number of pieces of each. Steel loops are imbedded in each piece of ornamental plaster so that wire ties can be carried up and firmly anchored to the steel or concrete beams, for a suspended ceiling.



Ornamental Plaster as Cast in a Chicago Shop for a Ceiling in the Union Arcade Building, Pittsburgh. A large number of such pieces were shipped to Pittsburgh and installed on the job.

SAVE THE SURFACE DEPARTMENT



Written, Illustrated and Edited by the Headquarters Staff, SAVE THE SURFACE CAMPAIGN

Principles of House Painting

IT must be confessed that most people paint their houses for the sake of good looks. The matter of preserving the surface does not enter into the consideration as it should. An era of prosperity always causes the home owner to feel that the times warrant his going to the "expense" of painting. And, sad to relate, the reverse is usually the case when times are not quite so good.

The common desire to look one's best, or even the love of appearance for appearance sake, cannot, of course, be condemned, because many of our choicest neighborhoods owe their attractiveness to this alone. The trouble is simply this: folks who regard painting as a luxury pass up this "expense" at the very time that they cannot afford the cost of repair bills that inevitably follow neglect.

Not so with the builder or architect. The protective and aesthetic aspects of paint should be fully recognized by them, as the endurance and appearance of their structures depend, to a large extent, upon the kind and amount of paint upon them.

The builder is so often the mentor of the home owner that he is a wise man if he arms himself beforehand with accurate knowledge about paint. Not only does he win

the goodwill of the owner, but he also has an opportunity to see that his buildings are not ruined by poor paint or inappropriate color.

The psychological value, the invigorating effect of clean, brightly painted property, is another factor we cannot afford to disregard, and this alone should be sufficient cause to warrant painting in times of temporary business depression.

Next to persuading a man to paint his house when he thinks he ought to "save the money," the most difficult point used to be the price he should pay per gallon for the paint used. It has always been hard to get a man to reason out the cost on the basis of the square foot and the expense at so much per paint-service-year. But nowadays price is becoming less and less the prime consideration, and, as with automobiles, it is performance and service that count.

It is not our intention to champion any brand of paint, or to advocate any particular type of paint, but we do want to urge the necessity of using good paint.

A great deal has been written regarding the value of color in home painting and a great deal of improvement has resulted. Americans are great faddists, however. Some-



What Color Would You Prefer to Have This House Painted? If you follow the principles laid down in this article you will avoid bright colors for this house, as they are only advisable where the house stands against a subduing background of foliage.

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times it seems we are all like sheep. How else can the vogue be explained wherein everyone, until quite recently, painted his house white, regardless of style, size, vintage or location? At present it looks very much as if all the white houses are being painted ivory, which will be an improvement if color is introduced effectively for trim and roof.

Color is the most effective sales agent we know. It intrigues our interest. It draws us toward, or repels us from a home. Color is never inactive. It is always working either for or against your interests. So let us not think that we can avoid the difficulties or possible dangers in choosing a color scheme by painting in all white regardless of the type of the house.

Generally speaking, the house prominently situated appears best in simple treatment. Neutral grays or drabs, with lighter gray or ivory for trim color, are very satisfactory. If there is much ornament or grill work, render this in the body color and avoid a "ginger-bready" appearance.

Where there are plenty of trees and foliage, light colors are advisable for both the large and small house. But where the building is unsheltered by trees the use of stone, warm drab or gray will avoid the bare look that a brighter color would create.

While it is possible to use the brighter, cleaner colors in neighborhood painting, good judgment must be exercised. Where one house is painted in a bright yellow, for instance, its next door neighbor should not be done in a bright green, a dark brown or any other strongly contrasting color. A cream gray body color with an ivory trim and green roof would improve the looks of both houses. Where the house is between two buildings painted in strong colors, a neutral tone is required, and if a tint of the strong colors can be used for trim or roof, a "color bridge" will be formed that will "bind" the three.

The idea of color cannot be disassociated from the surface to which it is applied. Just to the extent that any color is warm and expanding in effect, or cold and contracting, aggressive or receding, is that surface affected to which the color is applied. Light, warm colors, tints and shades of yellow, make surfaces appear larger. Dark colors tend to make the surface seem smaller. Light gray and green do not seem to change appearance to any extent. Bright, warm colors containing red or orange, make a surface seem nearer to the eye than the medium neutral or cold colors, such as dark gray or dark green, especially a blue green.

A practical application of this principle is used in painting the pillars of the porch. A yellow body color, for instance, with dark green trim, requires the pillars to be finished in the yellow rather than the green so that they will hold their place and appear nearer the eye and thus preserve



For the Colonial or Dutch Colonial House Ivory or Cream Is Always Appropriate, but It Must Be Remembered That Colors of This Type Make the House Appear Larger.

the architectural and structural value of the building.

As a rule, light warm colors like ivory, cream, canary yellow, golden yellow or warm drab are suitable for the small house, as they will make any building appear larger. Light colors which are not warm, such as sea green, cream gray, pearl or silver gray, are especially pleasing for a building which is not surrounded with trees. These colors, too, will harmonize with practically any color on neighboring houses.

The dark, warm colors, of which certain tints of brown and maroon are good examples, produce best results on larger buildings, where it is necessary to employ colors which will not be affected by smoke or dust, and where the foliage is not too dense.

The darker, so-called cold colors, as light lead color, or sage and moss green, are suitable for large buildings not surrounded with foliage and the roofs of which are covered with slate or other dark gray material. Surroundings and conditions vary, however, and the large building may be painted in as light a color as cream and the small bungalow in as dark a tone as brown.

The trimming is important in the architectural plan of the building and is even more so in the painting plan, because with the manipulating of the trim color it is frequently possible to modify the appearance of the house to a considerable extent.

The tall, narrow house can be made to appear lower and broader by keeping the body in a light tone such as ivory, using a dark contrasting color for trim such as a medium brown. A two-color treatment is also effective.

Decay in the Lumber Yard

How to Prevent Stored Up Lumber from Cracking and Checking

CONTROVERSY over conservation of lumber is decidedly out of date. Everyone knows that the present generation is beginning to suffer from the results of its grandsire's wastefulness. Our forests are not exhausted, but great care must be taken to prevent them from becoming so.

As every builder knows, unless rigid conservation is practiced until our lumber resources recover, there will be less and less building material as the years go on, and, by the same sign and token, fewer houses to build. No detail of conservation is too petty to observe. No practice is too difficult, for every "act of conservation" checks off



If the Ends of Lumber in Storage Are Coated with a Special Wood Preservative, Cracking and Checks Can Be Prevented Without Staining the Lumber.

that much more of the general waste. Every infinitesimal bit counts in the conservation game.

And it frequently has more concrete advantages to the contractor than the abstract "future good" which conservationists preach.

A large percentage of the tree is wasted in lumbering and cutting. The wood is then shipped to lumber yards where it is tiered up in large piles and exposed to the weather for storage and weathering purposes. Exposed wood, no matter where it is, is at the mercy of the weather. Moisture seeps in, frosts bite and the sun blisters; with the result that the ends of the cut lumber invariably crack and check. When the lumber reaches the hands of the users the ends must be sawed off to the extent of the cracking and checking. This results in a very considerable waste, which is charged up not to the lumber companies, but to the purchasers.

Some lumber storage yards paint the ends of the lumber with different colors. Now, paint is universally accepted as a protective agency against weathering and decay, but in this case it is not practical. Paint when used in this way does prevent cracking and checking, but unfortunately the staining properties of the pigment are carried into the lumber. It is necessary then, for the end to be cut off to the extent of the stain before putting the lumber into service.

The best way to preserve exposed wood in storage is to coat the ends with wood preservative—a special preparation which prevents cracking and checking and does not stain the lumber. It is made with a transparent white base with no staining properties and is ground to a semi-paste in a non-drying liquid. The preservative does not appreciably stain the wood and prevents the cracking and checking to a very considerable extent.

The amount of lumber wasted when some preservative is not used mounts up to appalling figures. If the contractor would figure up the number of good hard dollars lost with the cracked timber ends he would realize that conservation not only protects the stock of raw materials which will be utilized by builders in future structures, but also saves money for the contractor on jobs at hand.

Importance of Arbors

IN nature we do not find the straight lines and angles nor all of the colors which characterize the architecture and finish of our houses. Often, indeed, there is nothing in common, no relationship, between the house and its green surroundings; it is a thing of square corners and mathematical proportions set among the graceful and ever changing lines and colors of trees, bushes, grasses and flowers.

Arbors and pergolas are important as links between architecture and the green world. As a gateway in a hedge, arching over a pathway leading from a garden to a child's playhouse, from terrace to tennis court, from house to well-house or flanking a flower garden—not exceeding the entire distance between two points, you understand—the arbor and pergola, covered with vines and flowers, unite the house to its surroundings.

They are also good from the builder's standpoint. "Extras," such as arbors, pergolas and other outdoor effects, do much towards making the house desirable.

The single arbor repeated at close plantings across a broad pathway and forming a long, covered green walk, may easily become the most intimate and enchanting spot about a home.

This is an excellent time to plan an arbor, pergola or even a simpler piece of exterior woodwork, for many of the vines used as permanent cover should be planted in the fall of the year. Next summer, while growth is developing,

the first stage of bareness can be overcome by the use of fast-growing annuals.

The approach to an arbor should be led up to gradually by flanking the path with shrubs or a hedge and perhaps formal cedars. The sides of the pathway under the arbor should be bordered with low bushes and flowering plants or shrubs. Little bird houses may be fastened to the uprights.



A Garden Seat and Arbor. Notice the attractive fence and charming lily pond. Such a setting as this can be a part of even the modest garden.

Outdoor woodwork of cedar is taboo. Such pieces are ugly, and beautiful, stately cedars should not be sacrificed. Various forms of upright wood columns, set substantially, with cross pieces cut to such shapes as desired, will prove very satisfactory. The arbor frame should never be completely covered with foliage. It might be made of pine, which holds paint well, and is not too large for the small property.

It is very necessary that outdoor woodwork be painted

and kept painted. Unless a paint film renders the surface waterproof the wood will rot, and by the time the vines and other growth are reaching their full beauty, the arbor will be a wreck.

From the artistic standpoint, also, paint is necessary. The crudity of unpainted lumber would destroy the effect entirely. White is the color most used, but gray or a tone resembling the silvery color of old weathered boards make excellent finishes.

Special Paints Adapted to Special Surfaces

ONE of the greatest causes of paint troubles is the use of a good paint or varnish on a surface to which it is not suited. Not only is it necessary that a surface be in proper condition to receive paint, but it is equally important that a finish be applied that has been made especially for that particular surface.

To many people "paint is paint"; they can see no particular reason why any paint made for house painting cannot be used outside; why a varnish for interior woodwork will not stand up when used on a door sill. The builder, however, must realize the importance of using the proper paint in the proper place, otherwise an uninformed buyer who insists upon curious and dangerous economies in paint may succeed in ruining the entire building.

All surfaces have specific and peculiar requirements and unless these are borne in mind and the finish applied that is intended for such surfaces, there is bound to be trouble of some sort. For his own protection, as well as information, the builder should know which paints are designed for what surfaces, and how each type of paint possesses qualities peculiar to its function.

The paint manufacturer is making hundreds of different products, shades and colors. He knows, for instance, that a paint for use on porch floors and steps must be made to withstand severe conditions. That is the reason why one of the most important ingredients of a paint for use on porch floors is a durable, extremely tough varnish.

An enamel for exterior use must contain, as its liquid portion, an oil or varnish that will not be disintegrated by exterior exposure, but will withstand the wear and tear of the elements without losing its gloss. He knows that a floor varnish to be satisfactory must be extremely tough and elastic so as not to be marred by the tread of feet.

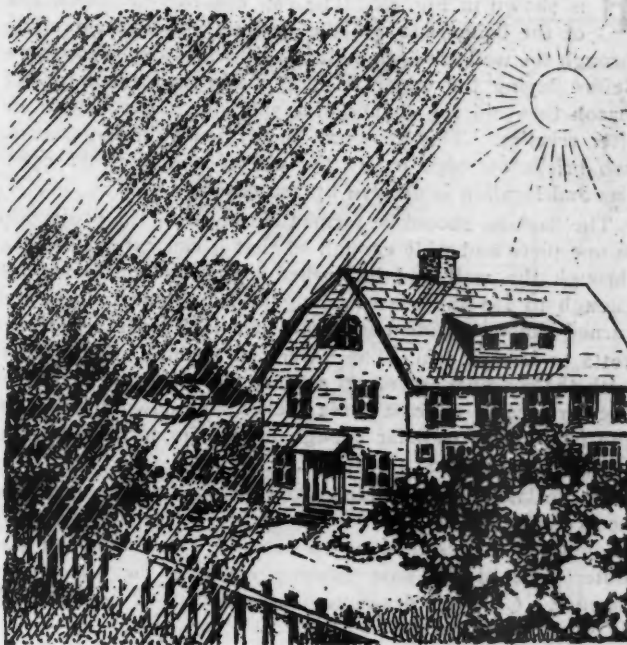
Among the hundreds of finishes made today there is one that will perfectly meet the exacting requirements of any paintable surface, provided the surface is in the right condition to receive it.

Frequently people try to economize by using up leftover paint from an interior job upon the exterior. There are hundreds of ways in which this paint may be used more attractively and certainly more wisely. When a house is built and ready for the finishing touch of paint, it is foolish to run the risk of spoiling the job by aiding and abetting the owner in a misuse of paint.

And it must be remembered, too, that no matter how good the paint or varnish may be, nor how well suited for the use in question, unless the surface is in proper condition, successful results are practically unattainable. The method of application also is just as important.

When these points are not realized and a product unsuited to the surface is applied, the color is unsatisfactory, the finish is not what was expected or it is deficient in wearing qualities.

We may wish to protect and preserve a surface; we may desire to beautify it or to render it waterproof and sanitary;



Paint for Outside Walls Must Withstand Extremes of Moisture and Heat. It would not do to use an interior floor paint or varnish on such exposed surfaces.

we may want to accomplish all these ends. Paints render a wide variety of services. Because of this and the special requirements of various surfaces, it is most important that the proper paint or varnish be used. The determination of this is not difficult, for expert advice is readily available.

Sometimes the builder hears that the paint or varnish finish on a house which he has sold has not given satisfactory service. Most paint failures are due to one of three causes. The paint used was not intended for the surface to which it was applied. The surface was not thoroughly clean or dry when painted. The method of application was wrong or drying conditions were unfavorable. But there are other causes such as sea fog, salt air, intense southern sunlight, fume or smoke laden air and quantities of dust which hasten deterioration.

It is a wise contractor who watches carefully to see that the painting is properly done. After all, paint is the finishing touch. Much of the attractiveness of the house depends upon how the paint brings out its good points. Much of the builder's reputation depends upon how well the various parts of the house stand up under wear and tear. Paint is one of the most obvious parts of a house. If it wears out quickly, cracks, and peels; in other words, if it has not been properly applied or the right variety of paint has not been used, doubts immediately arise in the owner's mind as to the worth of the less visible portions of the house.

Sheet Metal Details

Sheet 11—Flashings Around Terra Cotta Cornices and Balconies

EDITOR'S NOTE: This is the eleventh of a series of articles, presenting authentic details for flashing and metal work problems in building. The drawings, presented on the opposite page, were prepared by the Copper and Brass Research Association, and may be applied in the use of all roofing metals.

The first of this series was published in the November issue

of the AMERICAN BUILDER. Readers will remember that the drawings are intended to show the details of construction for every trade involved and are suitable for use by the drafting room in designing details. The distortion of the drawings will be apparent at a glance, but this purposely has been done that the methods may be made more clear.

NOTES FOR DRAWINGS ON OPPOSITE PAGE

FIG. 59. One method of flashing a terra-cotta cornice is shown in Fig. 59. The cap flashing on the outside of the balustrade and the flashing above it extending through the wall are both built in as the masonry progresses. Before laying the upper flashing a key is formed by the mason to avoid the chance of a side slip in the balustrade after erection. This key may be formed either by setting two bricks on edge or by the use of concrete; its exact size and location is decided by the design.

The flashing should be formed closely over the projection in one piece and wide enough so that it can extend entirely through the wall and be turned down on the inside far enough to lap the base flashing at least four inches, and turned down outside about one-half inch over the terra-cotta to form a drip. The lower cap flashing, also built in with the masonry, turns up against the brick work back of the terra-cotta at least three inches and down outside on the face of the wall far enough to lap the cornice flashing at least four inches.

If the lap is to be soldered the distance may be reduced accordingly. The outer edge of the terra-cotta cornice should be so designed as to provide a fastening for the outer edge of the base flashing covering the top of the cornice. (A good description of the method of fastening is given in Fig. 63.)

Attention is called to the use of the $\frac{3}{8}$ -inch thick bronze bar set in the top rail of the balustrade. This bar is continuous on top of the balusters, and if possible should be returned at the ends of the balustrade into the main wall of the building and anchored. The bar is placed on top of the balustrade dowels just before the terra-cotta rail is placed in position.

Fig. 60. A terra-cotta cornice surmounted by a brick-parapet wall faced by terra-cotta and the method of flashing same is shown in Fig. 60. In this type of construction it is important that the entire top and back of the wall be covered with metal. This will prevent the absorption of moisture by the masonry through the joints of the terra-cotta and brick work and permit cutting down the width of the terra-cotta cap. In designing the terra-cotta cap the upper part of the cap should be made with a roll, as indicated, from one to one and one-half inches in diameter. The metal is formed over this roll and extended over the top of the cap and down on the inside of the parapet wall where it is connected to the copper roof by a soldered lock seam. The metal at the back of the parapet should be formed with standing seams and the top with flat seams soldered. The two are joined by a lock seam hammered flat. The top of the terra-cotta cornice would also be covered with copper to protect the joints. The metal may be formed over the upper number of the cornice as shown over this step. In either case it is secured in place by screws as described in detail in Fig. 63. After securing the outer edge of the metal, as above described, the metal is brought back over the top of the cornice and turned up on the masonry. There it is held in place by the copper

flashing turned down over it. For cornices with over two feet of projection it will be found expedient to form a soldered lock seam half way across the projection and lengthwise of the cornice. The cap flashing begins at the back of the terra-cotta against the brick work and is turned up against the brick work three or more inches, then brought outside of the terra-cotta and turned down, lapping the base flashing four inches. If the lap is soldered this distance may be reduced accordingly.

Fig. 61. Another method of forming a gutter in a terra-cotta cornice surmounted by a brick parapet wall faced with terra-cotta is shown in Fig. 61. The flashing is continued through the wall beneath the terra-cotta cap to prevent seepage and continues down on the inside of the parapet and is formed with vertical standing seams (see Fig. 60) and connected to the main roof metal by a soldered lock seam. Attention is called to the key formed in the masonry below the terra-cotta cap which is made as described in detail in Fig. 59. The cornice flashing, forming also the gutter-lining, is formed on its outer edge over a terra-cotta roll (as described in detail in Fig. 60) and extends back on the masonry, avoiding all sharp angles, to the brick wall where it is turned up on the wall high enough so that the top will be at least three inches above the highest part of the outside of the terra-cotta cornice. For gutters over two feet wide a soldered lock seam should be formed longitudinally in the middle of gutter. This seam is secured by cleats nailed to wood strips set in the concrete. (A method of connecting a gutter of this type to the drainage system is described in Fig. 53.) The cap flashing is laid at the back of the terra-cotta facing of the parapet about three inches up on the wall, and extends out under the terra-cotta to the outside where it is turned down four inches over the gutter-lining. If this lap is soldered the distance may be reduced accordingly.

Fig. 62. A balcony formed by terra-cotta with a rail of the same material and a window or door opening to it and the method of flashing is shown in Fig. 62. The metal is laid from the outside of the cornice (secured either by screws as illustrated and described in detail in Fig. 63, or over a roll as described in Fig. 60), over a masonry key (described in Fig. 59), and across the floor of the balcony to the main walls, where it is turned up against the masonry and under the terra-cotta and wood sills and up to the back of the wood sill. The introduction of one or more soldered lock seams will be necessary in the floor of the balcony, depending upon the width, and some provision should be made for copper-lined scuppers at such places and of such size as the design of the rail may permit. The bottom of the scuppers should always be about two inches above the highest point of the balcony floor. The flashing of the balcony floor should rise on all sides from two to three inches above the bottom of these scuppers. Attention is called to the copper water-bar (described in detail in Fig. 11) and the bronze bar in the balustrade rail (described in Fig. 59).

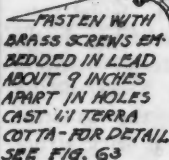
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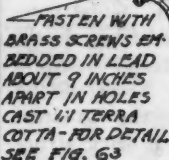
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Earthquake Tests Construction

"**P**ERHAPS no disaster has been more thoroughly and carefully investigated by experts than has that at Santa Barbara," says the monthly digest of the Common Brick Manufacturers of America, "and from these investigations there comes unanimously this lesson. Good construction of practically every kind withstood the shock. Inferior construction, regardless of the material used, is unsuited to earthquake zones. In the very heart of the business section of Santa Barbara, where the greatest damage was done, there stand today solid wall brick structures that are wholly undamaged.

"Fourteen secretaries of the group associations affiliated with The Common Brick Manufacturers' Association of America met in conference at Cleveland on July 23 and 24 to study engineers' reports from both the Montana and Santa Barbara earthquakes. These group associations, covering nearly the entire country, will work in unison in promoting better brick work and actively pursue a relentless campaign against the 'jerry' builder, and all others who sacrifice safety and permanency to cost.

"The brick industry in the future will put special emphasis on these points: (1) Cross walls tied or bonded thoroughly to the main walls; (2) proper ties and anchors at floor and roof lines; (3) the use of strong mortar; (4) braces for all walls extending above the roof line; (5) the thorough wetting of brick prior to being placed in the wall."

New Vitreous Ware Plant

IN the latter part of 1923 Thomas Maddock's Sons Co., Trenton, N. J., came to the realization that their present and prospective business was rapidly exceeding their manufacturing facilities.

A site of 125 acres was selected just east of Trenton

on the main line of the Pennsylvania Railroad running from New York to Philadelphia. Early in 1924 work was started on the foundation and on April 1, 1925, the first complete unit of the new plant went into operation.



The Fall Blooming Flower Garden

(Continued from page 143.)

dark fruits on the withe-rod, and other attractive fruits on different varieties. Even the white kerria with its glistening shining hard fruits in clusters of three or of five brown groups is an unusual oddity. The bitter-sweet among the vines has a splendid vermilion and yellow fruit useful in fall bouquets. Twigs in red and yellow from among the large dogwood family are striking against a green background of hemlock or of arbor vitae.

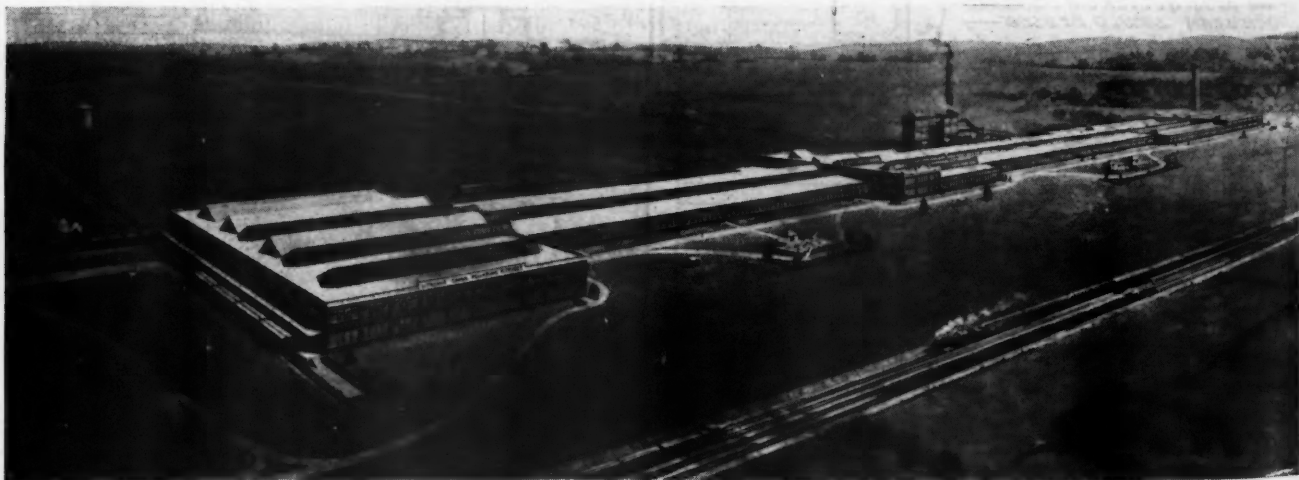
The list of attractive fruits among trees and shrubs is long, but many names are worthy of mention and commendation to those who would cultivate shrubs for their fruit effects. Our Thunberg's barberry hangs to the stem for long months after the leaves are gone. Both the strawberry shrub and burning-bush, varieties of the euonymus, have fruits of unusual beauty, and the spindle tree offers fruit something like the bitter-sweet in color. The honeysuckle family has both a red-fruited and a yellow-fruited member, and the pips of the roses in many varieties are bright and cheerful. The snowberry offers to the children a fruit which pops out of the tight white skin, and the Indian currant hangs on tightly in reddish clusters close to the branchlets. Even after the leaves are gone in the winter the ilex or winterberry throws its splash of vermilion on the snowy background. In this same group are the American and the Japanese high bush cranberry.

With the coming of the first frosts begins the red and gold harvest of leaves. The maples vie with one another in their scarlet and crimson coats. The cork-barked euonymus is covered with a blood-red leafy mantle, and the clear yellow of the box elder and the yellow birch, the sweet gum and the American elm fills the air with a yellow flood of color. The scarlet oak, the red oak, the pin oak, all enliven the dying autumn days.



Five and One Half Million Feet

AN estimate that 5,500,000 board feet of lumber used in constructing the motor speedway, grandstand and its approaches, at Laurel, Md., near Baltimore, would build nearly 700 cottages sufficient to house a population of a town of about 3,000 persons, has been made by an ingenious authority. This is based on a requirement of about 8,000 feet of lumber to a cottage.



First Complete Unit of the New Thomas Maddock's Sons Co. New Plant, at Trenton, N. J., Which Was Placed Operation in April. It is located on a new 125-acre site, just east of Trenton, which allows for future as well as present expansion requirements.

WAX FLOORS the New ELECTRIC WAY

TAKE all the labor out of floor polishing. Get a beautiful burnished lustre impossible to obtain by hand. Finish floors many times faster—save time, labor and money.

Waxed floors have always been one of the best selling points a building or home could have. Wax gives the finest, most beautiful and serviceable floors. Now waxed floors are **easiest**.

JOHNSON'S WAX *Electric floor Polisher*

Simple A small electric polisher that operates as easily as the ordinary vacuum cleaner. Fast enough for the big job, yet handy enough to use on the smallest. Nothing to take care of. Nothing to get out of order. Runs quietly. Can be carried anywhere—simply plug in any electric connection.

Efficient Does the work with amazing speed. Puts on a hard long-lasting polish impossible to obtain any other way. Requires no effort.

Economical Saves hours of hard labor. Will pay for itself in time saved on the first few jobs.

Inexpensive Not a big cumbersome machine requiring large investment but a handy, every-day tool that every builder, floor finisher, painter, and building manager needs.

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Please send complete details of the Johnson Electric Floor Polisher and your special offer on it to contractors and building managers.

Name

Address

City and State

1-3 H. P. Universal Motor. (Works on either alternating or direct current.)
Weight 9 lbs.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

New Red Seal Plan Will Assist Builders Sell Better Homes

By H. W. AYRE

Of the Staff of The Society for Electrical Development.

NATURE has been prodigal in her gifts to the human being. She has seen to it that the body is adequately supplied with nerves—nerves that *see*, nerves that *hear*, nerves that *feel*, nerves that *taste*—in addition to the million odd nerves that help keep the body functioning, properly furnished, and spic and span in every way.

The electrical wiring system of a home is in some degree the counterpart of Dame Nature's nervous system in the human body. Electrical wiring is the essential means for vitalizing the inanimate structure we call a house. It makes interiors cut off from natural daylight glow with subdued or heightened radiance from permanent and mobile lighting sources; it brings heat to take the chill from the air—to fry, bake, boil and broil food for daily consumption; it brings power to wash and iron clothes; to clean the home furnishings; to chill sanitary refrigerators, and to do numerous other tasks which enter into the highly technical pro-

fession we like to call by its homely name: "Housekeeping."

Yet the fact remains that many homes are practically light-less, heat-less and power-less because they are insufficiently supplied with electrical wiring—the unseen, forgotten transmission carriers of the ever useful electrical current.

Not that the public is always aware that this condition exists. Perhaps they have not had the opportunity of comparing it with homes adequately wired for convenience and comfort—such as have been demonstrated in model Electric Homes, exhibitions of which have been made in hundreds of communities in all sections of the United States.

When electricity was first introduced to mankind it was solely as an illuminant—to chase the gloom and ugliness of age-old methods of lighting from the home. In those early days a house "wired for electricity" meant that it had a single drop cord and bare light in each of the principal rooms. The time has come, however, when a single outlet per room is insufficient, even

The Red Seal Plan to Assure Adequate Wiring for the Convenient Use of Electric Service treated of in this article is one of the most progressive steps towards supplying the public with a service which means a maximum in comfort, convenience and economy. Already the properly constituted electrical bodies in Syracuse, Rochester, Buffalo, Pittsburgh, Louisville, Ky., Detroit, etc., have been granted licenses by The Society for Electrical Development to operate the Red Seal Plan in their respective communities.



A Red Seal Card on Any House Means That It Has Been Adequately Wired for Electric Comfort and Convenience in Accordance with a Carefully Worked Out Plan and Accurate and Complete Specifications as Provided in the Movement Sponsored by the Society for Electrical Development.

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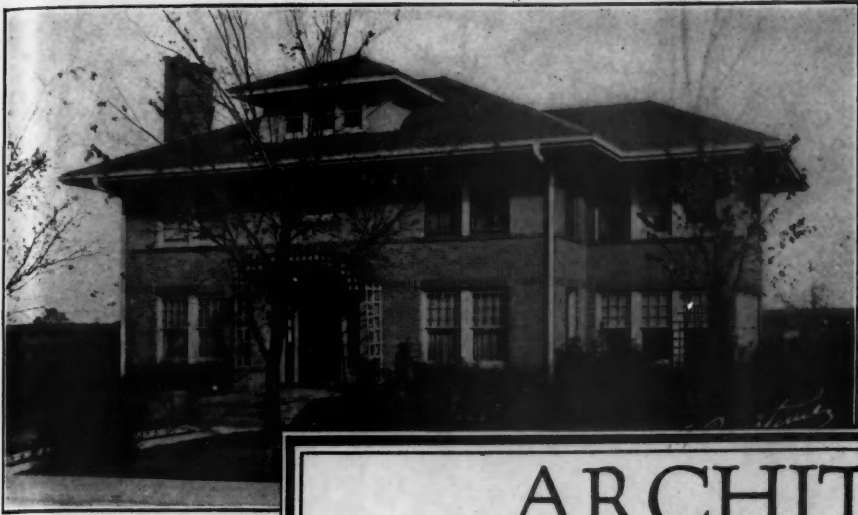
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RESIDENCE at Joplin,
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out with S W Materials.

How to cash in on a good name

Suppose you were the buyer instead of the builder.

And suppose that you were told that the house was painted and varnished completely with Sherwin-Williams goods. Wouldn't it make a good impression on you?

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For details of specifications see: The Sherwin-Williams Book of Painting and Varnishing Specifications (sent upon request) or Sweet's Architectural Catalogue.

We invite correspondence—write to the Department of Architectural Service.

The Sherwin-Williams Co.
407 Canal Road
Cleveland

ARCHITECTS' PAINTING GUIDE

FOR PAINTING · VARNISHING STAINING AND ENAMELING

IMPORTANT: Each of the products specified below bears our name and trade mark

SURFACE	TO PAINT <i>Use product named below</i>	TO ENAMEL <i>Use product named below</i>	TO STAIN <i>Use product named below</i>	TO VARNISH <i>Use product named below</i>
BRICK WALLS (ext).....	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CONCRETE WALLS....	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CEMENT FLOORS.....	S-W Concrete Floor Paint	S-W Concrete Floor Paint		
EXTERIOR WOOD SURFACES.....	SWP (Sherwin-Williams Prepared Paint)	Old Dutch Enamel, Gloss	S-W Preservative Shingle Stain S-W Acid or Oil Stain	Resper Varnish
EXTERIOR METAL SURFACES.....	Kromik Structural Steel Primer Metalastic (for finishing coats)	Old Dutch Enamel, Gloss		
FACTORY WALLS (Interior).....	S-W Eg-Shel Mill White S-W Fume Resisting White	Old Dutch Enamel or Enameloid		
FLOORS (Interior Wood)...	S-W Inside Floor Paint (the enamel-like finish)	S-W Inside Floor Paint (the enamel-like finish)	Oil Stain or Floorlac Varnish Stain	Mar-Not Floor Varnish
GALVANIZED IRON SURFACES.....	S-W Galvanized Iron Primer (Finish with any Paint)	S-W Galvanized Iron Primer and Old Dutch Enamel		
INTERIOR WALLS AND CEILINGS.....	Flat-Tone Wall Finish S-W Eg-Shel Mill White	Old Dutch Enamel or Enameloid		
INTERIOR WOOD TRIM.....	SWP (Sherwin-Williams Prepared Paint)	Old Dutch Enamel or Enameloid	S-W Acid Stain S-W Handcraft Stain S-W Oil Stain	Scar-Nee Varnish Velvet Finish Varnish (for imitation rubbed effect)
PORCH FLOORS AND DECKS.....	S-W Porch and Deck Paint			
RADIATORS AND PIPES.....	Flat-Tone Finish or S-W Gold Paint S-W Aluminum Paint	For White—S-W Snow White Enamel For colors—Enameloid		
ROOFS—Metal.....	SWP or Metalastic (if Galvanized, prime with S-W Galvanized Iron Primer)			
ROOFS—Wood Shingle...	SWP		S-W Preservative Shingle Stain	
STACKS AND HOT SURFACES.....	Salamander Smoke-Stack Black			
STRUCTURAL STEEL...	Kromik Structural Steel Primer Metalastic (for finishing coats)			
TO DAMP-PROOF FOUNDATIONS....	S-W Antydamp			
TO DAMP-PROOF INTERIOR WALLS ABOVE GRADE....	S-W Plaster Bond			
WOOD PRESERVATIVE			S-W Carbolic-oil	Copyright, 1925, by The Sherwin-Williams Co.



for the most humble household. Not only are several outlets per room required for lighting, but additional outlets are needed for the various appliances which give comfort, cheer or reduce labor to mankind.

The Home Which Electricity Built

The building of the modern home represents more than the mere disposal of so many cubic feet of clay, plaster and lumber, such as our pioneer ancestors considered adequate. It represents more than the conception of an attractive interior, embodying the artistry of masters in the plastic and mural arts.

The modern electrical home is essentially a vital, a responsive creation, which provides those comfort units—those time-saving, labor-saving, sanitary-and-health-favoring factors which humanity, over an indefinite period of time, has considered necessary for its well being and happiness.

The modern home, adequately wired, is truly the home which electricity has built.

The modern home is properly wired when it is being built. That is the ideal time to think of additional outlets for every room—every part of the house, from cellar to garret.

Extra Outlets to accommodate the laundry workers, the electric washer and ironer. And plenty of light outlets near the tubs, the furnace, the work bench, preserve shelves and coal bins.

Extra Outlets to accommodate the battery of kitchen servants, the food mixer, the toaster, the plate warmer, the dishwasher and other appliances. Not forgetting plenty of light overhead from the kitchen lighting unit, the local sink and range lights.

Extra Outlets in the dining room and living rooms to accommodate the floor and table lamps, the electric cleaner, the table cooking appliances.

Extra Outlets in the bedrooms, to accommodate the boudoir and floor lamps, the wall brackets, the electric cleaner, the vibrator, hair dryer and curler.

Extra Outlets in the bath room for mirror lights, radiant heater and the numerous electrical health-givers which medical men so highly recommend.

Extra Outlets for all the other unnamed parts of the home, wherever one of the helpful electrical labor and time-saving appliances can bring greater comfort and pleasure.

The Red Seal Home is the Home of Today—of Tomorrow

And now we come to the latest development in modern home building—The Red Seal Home.

The Red Seal Home is the home which has been adequately wired for electric comfort and convenience in accordance with a carefully worked out plan and accurate and complete specifications.

The Red Seal Home is the home which is offered by the entire electrical industry to the public, with the Society for Electrical Development as the national sponsoring body behind the movement.

Ample publicity means will be provided so that the layman may identify a home so wired. These will be in the form of large, distinctive, announcement cards carrying the copyrighted Red Seal design. Such cards will be attached to the front of the building in two forms: one before, and one after, the wiring has been done, so that



Cards Are Attached to the Front of a Red Seal Building Before and After the Wiring Has Been Done and a Red Seal Emblem Is Placed on the Metal Service Box as a Permanent Endorsement of the Electrical Facilities.

everyone will know that the electrical features of the home are on adequate, liberal lines. There will also be copies of the Red Seal emblem in decalcomanie form for transferring to the metal service box as a permanent endorsement of the electrical facilities of the home.

The procedure by which Red Seal privileges are granted to local interests is very simple, yet is so arranged that the public receives ample assurance that its interests are protected against unscrupulous concerns and individuals which might try to operate the plan solely to their own ends.

In the first place, the Society for Electrical Development, the national sponsoring organization, has full copyright to the plan, and will exercise jurisdiction over all licenses granted to local leagues or other properly constituted electrical bodies handling the matter. These organizations thus licensed are authorized to grant builders and wiring contractors necessary credentials, as already outlined, which inspection has proved that the Red Seal standard has been strictly adhered to.

A Keen Public Demand Exists for Adequate Wiring

That there has been a keen, unsatisfied demand for adequate wiring has been proved beyond a doubt by facts gathered over a number of years, from actual demonstrations and surveys in all parts of the country.

The outstanding and most unbiased form of public contact in this connection has been through the medium of Electric Home Exhibitions. Such exhibitions are in the form of non-commercial, educational activities, usually fostered and managed by an electrical league or other co-operative body representing all branches of the electrical industry. By making suitable arrangements, a model home is erected, adequately wired, completely furnished and equipped with modern lighting fixtures, portable lamps, electric cooking devices, labor and time-saving appliances, etc.

A comprehensive form of publicity is employed to invite the public to visit the model Electric Home, and to see by actual demonstration the full comfort, charm and conveniences of a home which is not only architecturally pleasing, but wired for electric service in the full meaning of the term.

In practically every case where such exhibitions have been

(Continued to page 190.)

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Los Angeles
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New Orleans



The Ideal Rolok-Bak Wall Has the Same Pleasing Appearance as Any Brick Construction

New Rolok-Bak Brick Wall

Lowest Cost and Strongest Hollow Wall Construction

Every seventh course
a header course, bond-
ing the wall into a
strong unit

Why use any but the best when you can build the Ideal Rolok-Bak wall at less cost than for any hollow back-up? People WANT brick construction. Homes made with these standard units of burned clay are easier to sell.

6c per sq. ft. for back-up

An 8-in. wall requires only 4 brick on edge. With brick at \$15 per M, that means only 6c per sq. ft. Bricklayers AVERAGE 650 brick on edge per day in an 8-in. wall containing the usual number of windows.

When you build the Ideal Brick

Rolok-Bak Wall, you handle only ONE material, get a perfect bond for every brick, and have a wall superior to any veneered hollow back-up.

Send 25c for "Brick—How to Build and Estimate." It gives all details.

The Common Brick Manufacturers' Association of America

2131 Guarantee Title Building, Cleveland

Chicago.....Chamber of Commerce Bldg.
Detroit, Mich.....404 Penobscot Bldg.
Hartford, Conn.....226 Pearl Street
Los Angeles.....342 Douglas Bldg.
Nashville, Tenn.....Harry Nichol Bldg.
New Orleans, La.....904 Carondelet Bldg.



New York City.....1710 Grand Central Terminal Bldg.
Philadelphia.....City Centre Bldg.
Portland, Ore.....309 Lewis Bldg.
San Francisco.....811 Sharon Bldg.
Seattle, Wash.....524 Burke Bldg.

Unobstructed Floor Space

The Growing Use of Roof Trusses Is a Great Advantage to Many Types of Business Buildings

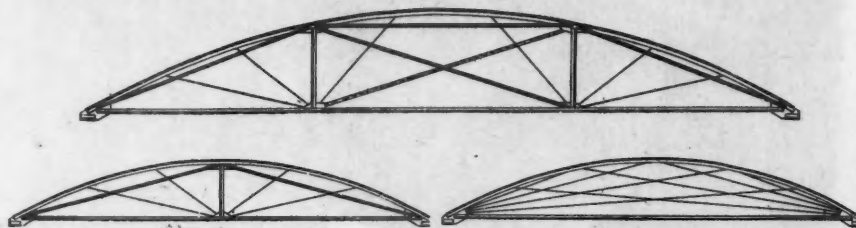
By H. G. TREGILLUS, Structural Engineer

THE matter of floor space is of vital importance to both owner and architect and in order to meet the requirements of the owner the architect frequently has the difficult problem on his hands, then again the owner who wishes to sell his building is frequently in difficulty because a certain partition, column or some vital structural unit of the building is so situated as to interfere with the requirements of the proposed purchaser.

The obvious solution is to eliminate all such obstructions as far as may be practicable. This naturally leads to the consideration of trusses, girders and arches. The present discussion will be confined to roof trusses.

In the Chicago district the value of the trussed roof has now become pretty well recognized and the number of one story buildings utilizing this construction is surprisingly large and their uses are unexpectedly varied.

One would expect to find trusses spanning garages, dance halls, armories, etc., but it is somewhat surprising to find



Above: Two-Post Type of Truss Used for Spans of 60 Feet or More. Lower left: One-post type for spans up to 60 feet. Lower right: Rod type for spans up to 60 feet. The one- and two-post types are generally used, the rod type being used only where appearance requires it.

a row of narrow store buildings so constructed. This however is now done and the advantage is apparent.

A one story building with perhaps 150 foot frontage and the depth of 150 feet may be economically built with three spans of 50 feet the intermediate supports being brick walls, metal or wood columns, the front wall being carried on lintels with about two supporting columns in each 50 foot space.

This room 150 feet by 150 feet or the three rooms 50 feet by 150 feet each as the case may be, can now be divided



Garage Building at Chicago; 125 Feet Wide; Six Steel Trusses Approximately 20 Feet on Centers. Note the sloping of the joists in the end bay to reduce the height of the end wall.



Why Pay Six Men for One Man's Job?

An American Universal Floor Surfacing Machine actually does the work of six men and does it better. Just stop to think what it would add to your income over a period of a year if you took six men off your pay roll who are now earning good wages on their hands and knees scraping floors.

It may be hard to realize that the "American Universal" machine has actually cut the cost of floor scraping eighty per cent, but hundreds of users are proving it by actual tests every day.

Builders and contractors who are now using American Universals are not only surfacing floors for about one-fifth the cost of hand scraping, but are turning out better work.

One unskilled man with an

American Universal FLOOR SURFACING MACHINE

can positively do as much work as five or six fast hand scrapers and he can produce a beautiful, smooth, clear, perfect surface which is impossible to produce by the slow and costly hand scraping method.

Add \$5,000 to \$10,000 More to Your Profits

Scores of builders and contractors have added from \$5,000 to \$10,000 to their yearly profits by using an American Universal Floor Surfacing

Machine not only during the busy season but in off months when business is slack. A number of them keep from five to ten American Universals busy every day in the year on jobs for other contractors and their own work.

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and full particulars regarding the wonderful, money-saving, profit-building possibilities "American Universal" machines offer to the live contractor and builder. Have us send you descriptive literature and letters from dozens of enthusiastic users.

The American Floor Surfacing Machine Co.

515 So. St. Clair Street, Toledo, Ohio

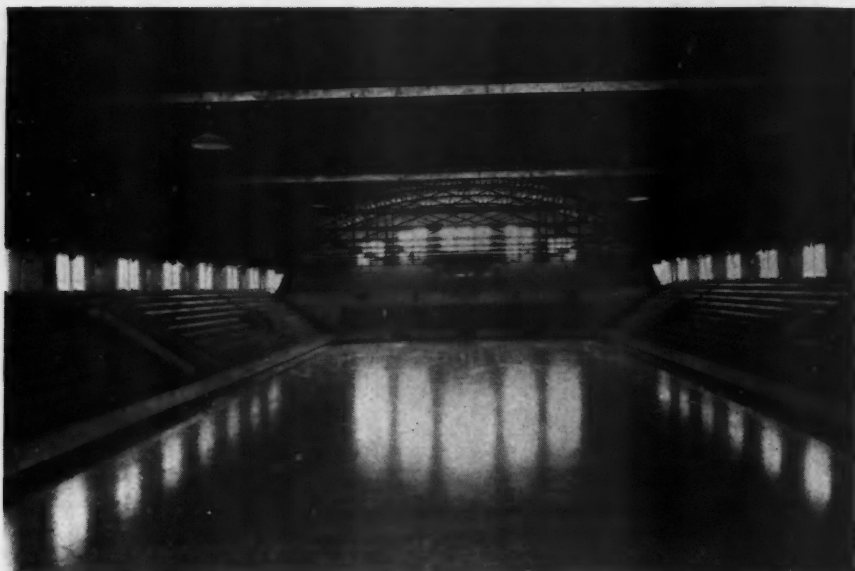
CUT OUT AND MAIL THIS COUPON TODAY

The American Floor Surfacing Machine Co.,
515 South St. Clair Street, Toledo, Ohio

Please send me without any obligation on my part full information about the "American Universal" Floor Surfacing Machine.

- ☐ I am a building contractor.
☐ I am interested in becoming a floor surfacing contractor.

Name
Street
City
State



Interior of Hockey Rink at Duluth. Width of building, 145 feet. Twelve steel trusses spaced 21 feet on centers. Roof of 1-inch sheathing on wood joists. Lower chords of trusses are not braced.

with partitions to suit the needs of almost any tenant and if the requirements of the district change the partitions can be altered to suit the new needs.

Thus the building may be opened in the first instance as a garage with a few small stores along the front. Later the number of stores may be increased and bowling alleys or a restaurant may be added in the rear or the space can be divided up for manufacturing.

Such alterations obviously would be impossible if the ordinary construction for small store buildings had been followed. The customary brick partitions would have hampered the alterations and even though the alterations might have been possible they would be almost certain to entail the cutting of openings and the inserting of lintels.

With the truss construction, however, partitions of two by four studding are easily torn out or constructed. The writer knows of several cases of this sort where alterations have been very profitable for the owner but which would be practically impossible without roof truss construction.

In one small town in Wisconsin a department store building was erected in which the street level on one side was one story lower than the one on the other side, giving practically two main floors. The lower story was obstructed by columns but the upper story was spanned by trusses with the metal ceiling beneath them, thus giving the owner a room some 75 by 100 feet without an obstruction. This has proved most satisfactory. He is able to arrange his show cases and aisles wherever it best suits him without having to avoid any supporting columns while in the floor below the location of the aisles is definitely established and cannot be changed on account of the columns which support the floor above.

It has generally been the custom in one story light manufacturing buildings to arrange posts or columns some 20 feet apart each way. The writer has been called on time and again to

suggest how the certain columns or a group of columns could be moved because they are in the way of certain machines or operations. Such remodeling is very costly and quite unnecessary had roof trusses been used in the original construction. Of course, where saw-tooth lighting is essential the roof trusses become a little more expensive but even in this condition it may be stated as a general rule that they are worth the added expense.

With the increased use of electric power in which the motor is an integral part of each machine the necessity for overhead shafting is becoming less, and while shafting supported by trusses is not a bad feature the trusses may be built with less expense if they do not have this additional load.

In various larger cities throughout the country it is a surprise to one who is accustomed to truss construction to find how many unnecessary columns are doing business at the old stand de-

creasing the efficiency of machinery and, in garages, battering up fenders.

The only reason that can be given for this state of affairs is that the people in that city, architects, owners, and builders have never had the matter of trusses brought to their attention in the right way at the right time and it is hoped that the above remarks may help solve some problems which are causing perplexity on the drawing board, in the office, or in the factory.



Red Seal Plan

(Continued from page 186.)

put on the attendance has been so great that long lines of interested home builders have waited in the streets, sometimes for hours, for the privilege of entering the magic portals of the electric home to view its comfort and labor-saving marvels. During the period such homes have been put on, millions of people have had the pleasure of learning first-hand the great, unused possibilities of electric service. And the interest evinced has not been one-sided; the building interests, the architects, the builder, the realtor, have also manifested a real appreciation of the work being done to apprise the public of the desirability of buying homes which were modern from the electrical standpoint.

Thus, the conception of the Red Seal Plan to Assure

Adequate Wiring has not been developed overnight. It is not the fancy dream of men who know little of the wants of the public and who are attempting to pass an unwanted luxury to them. The Red Seal Plan is the electrical industry's answer to a crying need of the day for a suitable, desirable standard of electrical wiring which will not only make the home of today and of tomorrow more charming and comfort-giving than it has been in the past, but will prove an economic factor in reducing labor and keeping a home considered modern today, fully up-to-date in the years to come.



Interior of Second Story of Department Store Building at Portage, Wis. This room is approximately 72 by 90 feet without obstruction, allowing the show cases and counters to be placed wherever desired.



BROTHERHOOD OF LOCOMOTIVE ENGINEERS' BUILDING,
Cleveland, Ohio

Architects
KNOX & ELLIOTT, Cleveland
Contractors
GEO. A. FULLER CO.,
Cleveland

*All brick work laid up in
Carney*

HARDER THAN THE BRICK IT HOLDS

ABOVE all, the one requisite in mortar is high bonding quality. If it hasn't that it can't perform its mission.

The following extract of a letter from Graham, Anderson, Probst & White, Chicago Architects, illustrates a practical test of Carney on a job.

"In making connections between the north and south section of the Wrigley Building, it was necessary to cut into the brickwork of the south section, which had been laid up in Carney two years ago. We found it impossible to get out the brick without cutting them to pieces, due to the bond."

Everywhere Carney is used, you'll find the same condition—a bond harder than the brick it holds.

THINGS YOU'LL WANT TO KNOW ABOUT CARNEY

Mixing errors never occur with Carney—if too much sand is added, the plasticity is affected, making troweling difficult. The quality of the finished wall is thereby insured.

Carney works perfectly with 4 parts sand—saves material.

Carney is easy to mix—add water and sand only. Reduces labor costs.

Carney is the perfected cement for brick and tile mortar.

THE CARNEY COMPANY

Cement Makers Since 1883
MANKATO, MINNESOTA

Mills at [Mankato,] Minn.
Carney,

DISTRICT SALES OFFICES: Leader-News Building, Cleveland; Chamber of Commerce Building, Chicago; Omaha National Bank Bldg., Omaha; Syndicate Trust Building, St. Louis; Book Building, Detroit; Builders' Exchange, Minneapolis.

Specifications: 1 part Carney to 4 parts sand.

CARNEY

for Brick and Tile Mortar



HOW DAN DOES IT.

A Department for Passing "Life Savers" along to other Builders.

\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is going to edit this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

Cement Hoist and Distributor

IN cement construction, where labor enters so largely into the cost, anything that will save time and labor means dollars in the contractor's pocket. A Denver man, contracting concrete construction, found his work greatly facilitated by the portable tower, and cement distributing trough, shown in the accompanying photograph, which was originated by him.

The hoisting tower is constructed in sections, of light angle iron, and mounted upon the rear end of a small truck. The latter, when blocked up behind, furnishes the power for hoisting by a drum mounted on the bed, and connected by a chain gear to a sprocket fitted to the rear hub. When ready to move, the power is lowered onto the body of the truck, the chain is removed, and the truck is ready to proceed to another job.

The telescoping trough for distribution of cement is mounted by a pivot to the top of a tripod, and may be quickly swung to any point of the wall desired. The usual metal pipe conveys the concrete from the elevator to the boxed-in apex of the trough, where a cement sack serves for a connection to prevent waste of cement. These devices will prove a boon to the small contractor who is moving frequently from job to job.—Jos. C. COYLE, Denver, Colo.

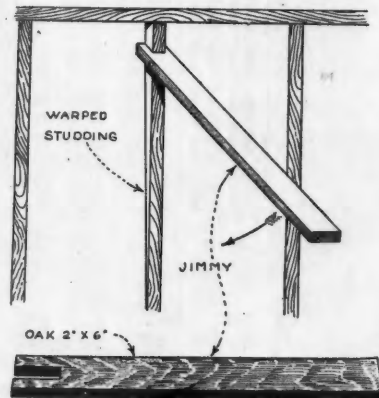


This Rig Is a Tower, of Angle Iron, Mounted on a Truck, and a Distributing Trough, for Concrete Work. Power is furnished by the truck engine.

Studding "Jimmie"

WHILE erecting a building of lumber which had been piled out of doors for some time, difficulty was met when it came to using the material which was badly twisted and warped from the effects of the sun. The straight pieces were used for the sill and plate, and this left the twisted ones for the studding.

A device was made as shown in the sketch, to twist the studding back to the proper position before spiking at the top through the plate. A piece of oak 2 by 6 inches was notched as shown, so that it would fit snugly over the studding. A ½-inch bolt was placed through the stick just back of the notch to prevent splitting. The device is used as shown at the top of the sketch, the outer end being moved as indicated by the arrow. The oak stick should be about 6 or 8 feet long.—HAROLD JACKSON, Kankakee, Ill.

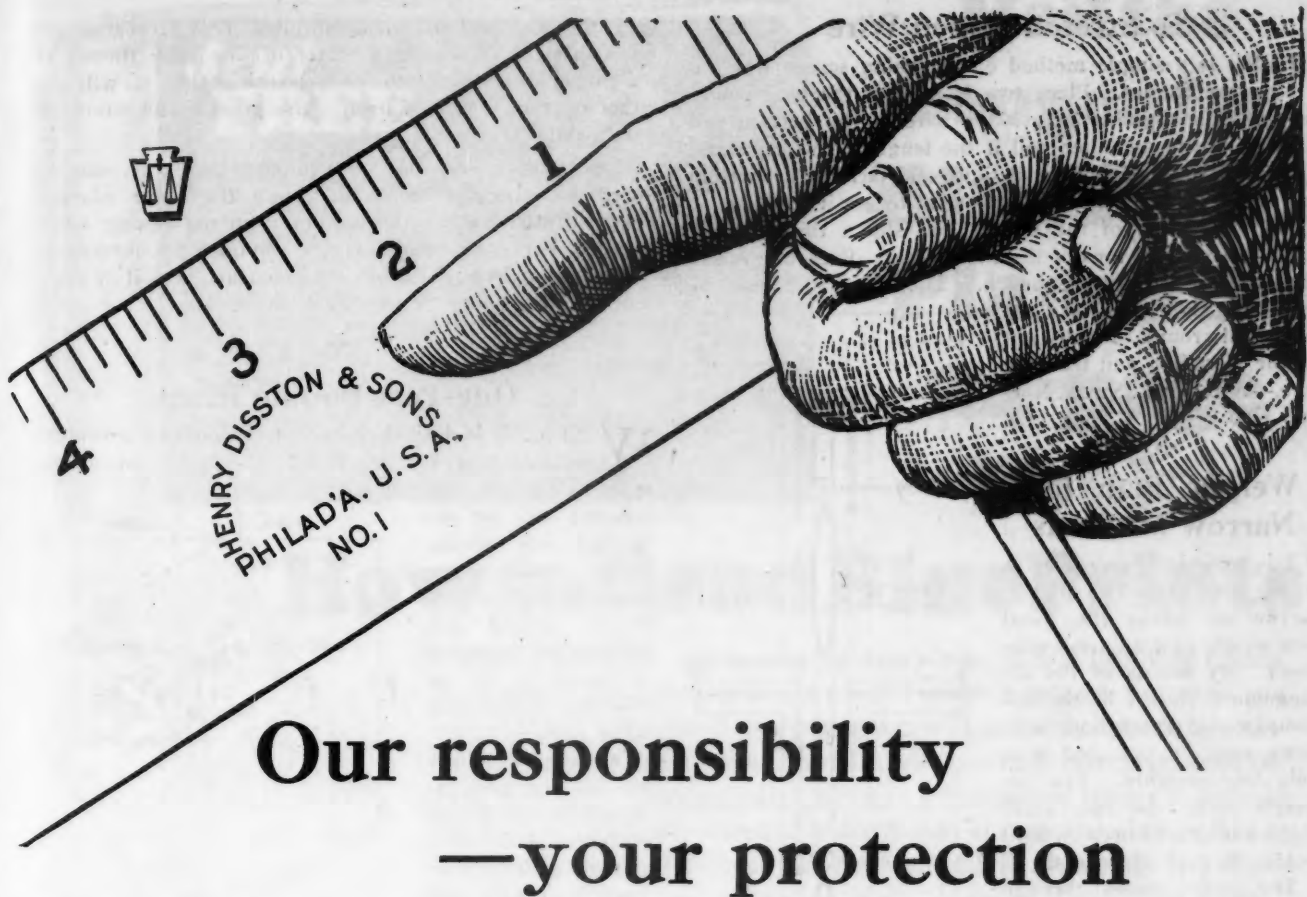


Studding Which Has Been Warped and Twisted by Exposure, Can Be Set Up Straight by This Simple Method.

Two Practical Ideas

IN doing cabinet work, or any fine work of the sort where it is desirable to hide nails or screw holes, the most effective method is to raise the wood with a fine ¼ or ⅜-inch chisel. After the nail or screw has been driven the piece of wood which was removed can be glued back in place by clamping. If carefully done even an expert will be unable to find the place when finished.

Another idea is useful in making doors where no clamps are available and mortise and tenon construction is used. Insert two wedges in the end of the tenon and let them protrude about ⅜ inch. Cut the tenon ⅜ inch shorter than the mortise. When driven up with a hammer the wedges tighten and prevent the joints from opening up.—WM. H. HARRIS, Englewood, Colo.



Our responsibility —your protection



Disston No. 5 1/2 Try Square
Toughened blade of Disston-made Steel that does not kink; always lies flat on the work. Nickel-plated iron stock, accurately and permanently fastened with steel rivets.



Disston No. 3 Bevel
Blade of toughened Disston-made Steel. Iron stock is nickel-plated. Disston invention locks the blade at any angle by a quarter turn of the thumb-screw. Blade will not slip. Knocks or jars do not disturb adjustment.



**"The Saw Most
Carpenters Use"**

THAT is what the Disston name on a saw or tool amounts to.

The Disston name is our responsibility because the Disston reputation rests squarely upon the quality of every saw and tool which bears that name.

The Disston name is your protection. You are sure of getting standards of quality and workmanship that have been tested by three generations of carpenters.

You can go into a hardware store in any corner of the earth and buy with confidence the saw or tool marked "Disston".

Henry Disston & Sons, Inc.

Makers of "The Saw Most Carpenters Use"

Philadelphia, U. S. A.

DISSTON

SAWS TOOLS FILES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

To Stretch Screen Wire

HERE is a simple method of stretching screen wire on screen frames. Place two frames on the bench with the top ends together. Tack the wire at the bottom end of one of them and then roll it the length of both frames, without attempting to draw it tight, and tack at the bottom end of the second frame, being careful to get it straight.

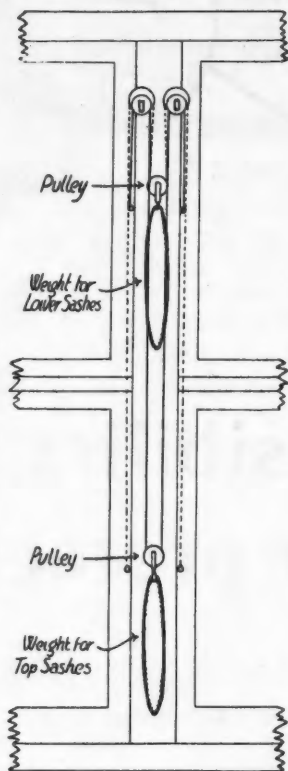
Next raise one of the frames and slip a thin strip of wood between the tops of the two frames. Press the raised frame back flat on the bench. The wire will now be stretched tight and can be tacked all around. Finally put on the moulding and trim the wire.—WILLIAM B. STAPP, Norton, Kan.



Weight Plan for Narrow Mullions

IT is sometimes necessary to use mullions which are too narrow to admit the usual four weights for adjacent windows. By means of the arrangement shown in the accompanying sketch both windows may be operated with only two weights. The top weight holds the two lower sash and the lower weight holds the two upper sash.

The cord is passed through a pulley at the top of the weight. For the upper sash it passes through holes at either side of the window frame and one end is fastened to each sash. For the lower sash the cord is passed through holes just above these and then down, one end being attached to each lower sash.—ALBERT SEYFARTH, Oregon, Ill.



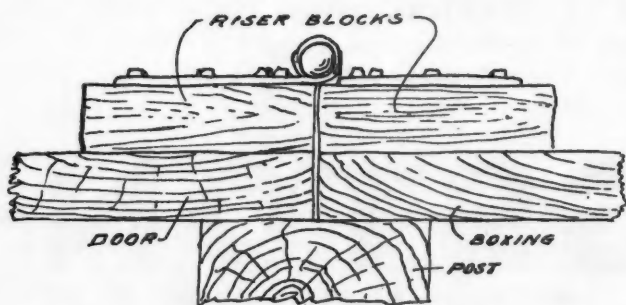
Where the Space Between Windows Is Limited, This Method of Installing Weights Will Solve the Problem.



A Novel Hinge Mounting

IT is peculiarly aggravating to have the lower half-doors of buildings which house stock swing shut after one has thrown them open, in order to allow stock to get in or out, before all the stock has passed, but they have this habit it seems, particularly if the doors swing open against the prevailing winds.

Various catches may be devised, but if one will mount the lower hinge of such doors on a thick riser—not less than a full inch—after the manner shown, once thrown



A Hinge Mounting Which Will Hold a Door Open Against the Wind Is a Convenient Arrangement for the Lower Half-doors of Stock Barns.

open the door will remain open unless very strong air currents catch it. The offset center of the hinge throws the weight of the door into such position that it will stay either open or closed of itself. Use good sound wood, and paint well.

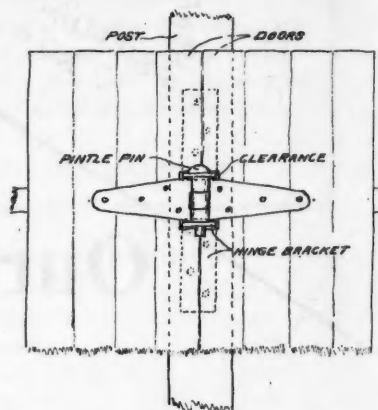
Upper doors may not be equipped this way, else the lower doors cannot be opened, since the lower edges of doors so mounted are thrown out from the boxing several inches. The same result may be obtained by bending the hinge leaves themselves, but the construction will of course prove weak.—LOUIS SCHNEIDER, Clinton, Mo.



One-Post Double Hinge

WHERE it is desired to hang two doors on a centrally situated post, try this kink. Take apart an ordinary strap hinge of the required size by removing the pintle. Forge two hinge brackets in an L-shape, cutting and drilling the short end of the L to fit the thickness of the door to be hung.

Mount these brackets on the post as shown by the dotted outlines and wide enough apart to accommodate the hinges. Notch the doors slightly for clearance where these brackets are positioned, and assemble and secure door, hinges and pin as shown. This makes the very strongest kind of hinge that it is possible to have in the circumstances.—LOUIS SCHNEIDER, Clinton, Mo.



It Is Quite a Trick to Hang Two Doors on a Single Central Post but It Can Be Successfully Done by Means of the Method Shown Here.



Figuring Lumber Footages

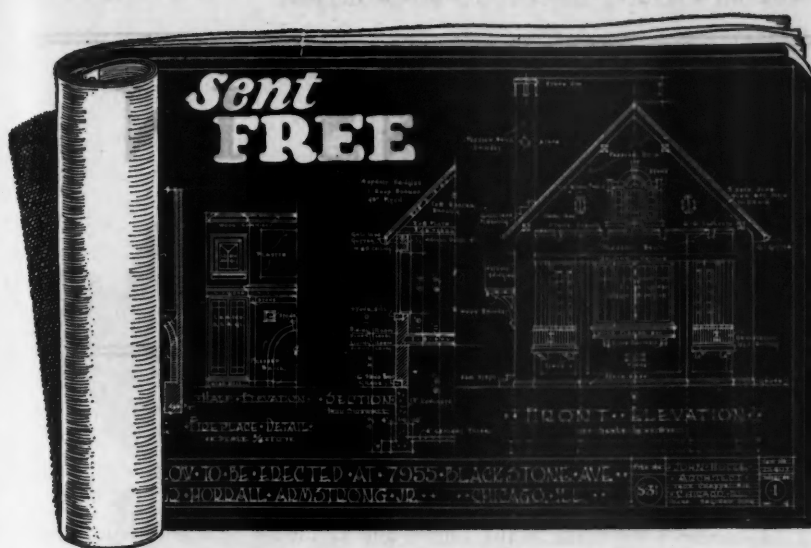
THERE are a dozen different ways to figure the board footage in a given piece of lumber. Most of these methods are involved and require a great deal of figuring. An easy method to arrive at the footage in stock, especially in odd sizes, is to take the inches to the foot, multiply by the length and divide the total by twelve.

For example:

1 pc 1½ inch by 4 inch by 8 feet = 1½ inch by 4 inch is 5 inches to the foot... 8 × 5 inches = 40 inches
 1 pc 2 inch by 4 inch by 10 feet = 2 inch by 4 inch = 8 inches to the foot... 8 × 10 = 80 inches
 1 pc 1½ inch by 2 inch by 12 feet = 1½ inch by 2 inch = 3 inches to the foot...
 3 × 12 inches = 36 inches
 1 pc 1 inch by 8 inch by 6 feet = 1 inch by 8 inch = 8 inches to the foot... 6 × 8 inches = 48 inches.

Total 204 inches
 Then 204 divided by 12 gives 15½ board feet.

This rule holds good in all cases and comes in handy when figuring 4/4, 5/4, and 6/4 material. It is especially useful in figuring such work as cornices, three or four member trim and the like where all the inches in the combined members can be added and then multiplied by the total length.—C. L. SMITH, Jackson, Miss.



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INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder

Dormer Framing

By JOHN T. NEUFELD

THE dormer roof illustrated in figure 32 presents some of the difficult roof framing problems connected with dormer framing.

When framing this dormer we must first set the two main rafters lettered A. The main roof has an 8 inch rise per foot run— $\frac{1}{3}$ pitch. The length of these main rafters can be found by multiplying the length of the rafter for one foot run (as given in tables) by the number of feet in the run. The length per foot run is 14.42 inches for a $\frac{1}{3}$ pitch. The run of the rafter is 14 feet.

The total length is $14 \times 14.42 = 201.88$ inches = 16 feet $9\frac{7}{8}$ inches.

Another rafter "B" is nailed to the rafter A for stiffening the roof.

After these rafters have been framed the dormer walls are framed. If we wish to use the square for marking the cut at the lower end of the studs for the side of the dormer we may use the same numbers as for the plumb and seat cut of the common rafter, 8 and 12 in this case, marking on the arm on which the 8 is taken.

The front of this dormer is 4 feet 0 inch above the main roof at the face of the dormer. This makes the length of the plate of the dormer 6 feet 0 inch to the point D. This is found as follows: The rise of the roof is 8 inches per foot. The total height of the dormer or the rise of the main roof up to the level of the dormer is 4 feet 0 inch. To make the rise the run must be $48 \div 8 = 6$ feet because it rises 8 inches per foot run.

The next step is to put in the valley rafter E. This rafter covers a 6-foot run in either direction. To find its length we proceed as for hip rafters. The length of hip per foot run of common rafter (given on tables) is 18.76 inches. This is the length corresponding to 1 foot of run of the common rafter. This total length would be six times this = $6 \times 18.76 = 112.56 = 9$ feet $4\frac{1}{16}$ inches. From this we must deduct one-half the thickness of the ridge on one side and one-half the thickness of the rafter on the other side. This valley rafter as it meets the ridge and common rafter has two side cuts and a plumb cut at the top.

The plumb cut at the top and the seat cut are laid out by using the rise per foot run on the tongue and 17 inches on the blade. (The run of hip is 17 inches per foot run of common rafter.)

The side cut is the same as the side cut of a hip rafter taking the number representing the length per foot run on

the blade of the square and 17 inches on the tongue; laying this on the upper edge of the rafter and marking along the tongue. This side cut was illustrated in our last lesson.

The valley rafter G known as the short valley is figured by the run of the dormer rafter. The dormer is 8 feet wide, therefore, the run of the common rafter is 4 feet. The length of valley per foot run is the same as for the long valley = 18.76 inches.

The length of the short valley is 18.76 inches $\times 4 = 75.04$ inches = 6 feet $3\frac{1}{8}$ inches.

The seat cut is the same as for the other valley. At the top is a plumb cut using the numbers 17 and 8. The cut across the top is a square cut regardless of the pitch of the roof.

The next rafters to put up are the common rafters H for the dormer. This dormer has the same pitch as the main roof. The length per foot run for a $\frac{1}{3}$ pitch roof, for the common rafter is 14.42 inches. The run is 4 feet 0 inch and the length is $4 \times 14.42 = 57.68 = 4$ feet $9\frac{1}{16}$ inches. The numbers to use for the cuts are 12 and 8 as the rise per foot is 8 inches.

The rafters K and N are Jack rafters. These are similar in many respects to the common rafters only that they do not extend the full length, as the common rafters do, as the rafters are spaced 2 feet 0 inch on centers (in this case), therefore the first Jack rafter is 2 feet 0 inch from the corners and the run for this rafter is 2 feet 0 inch. The length would be two times the length per foot run = $2 \times 14.42 = 28.84 = 2$ feet $4\frac{1}{16}$ inches. The rafter K is the

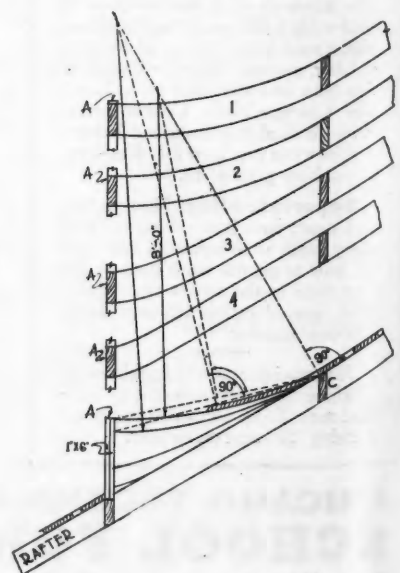
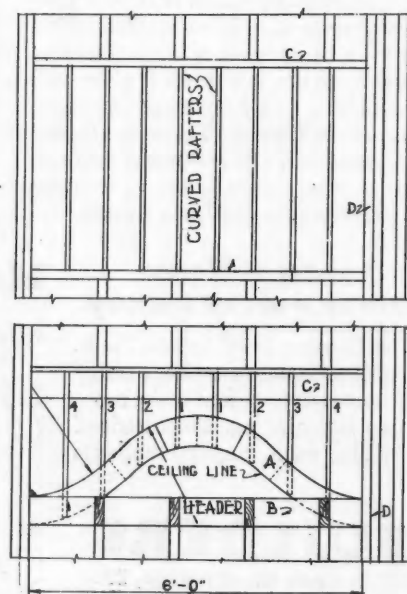
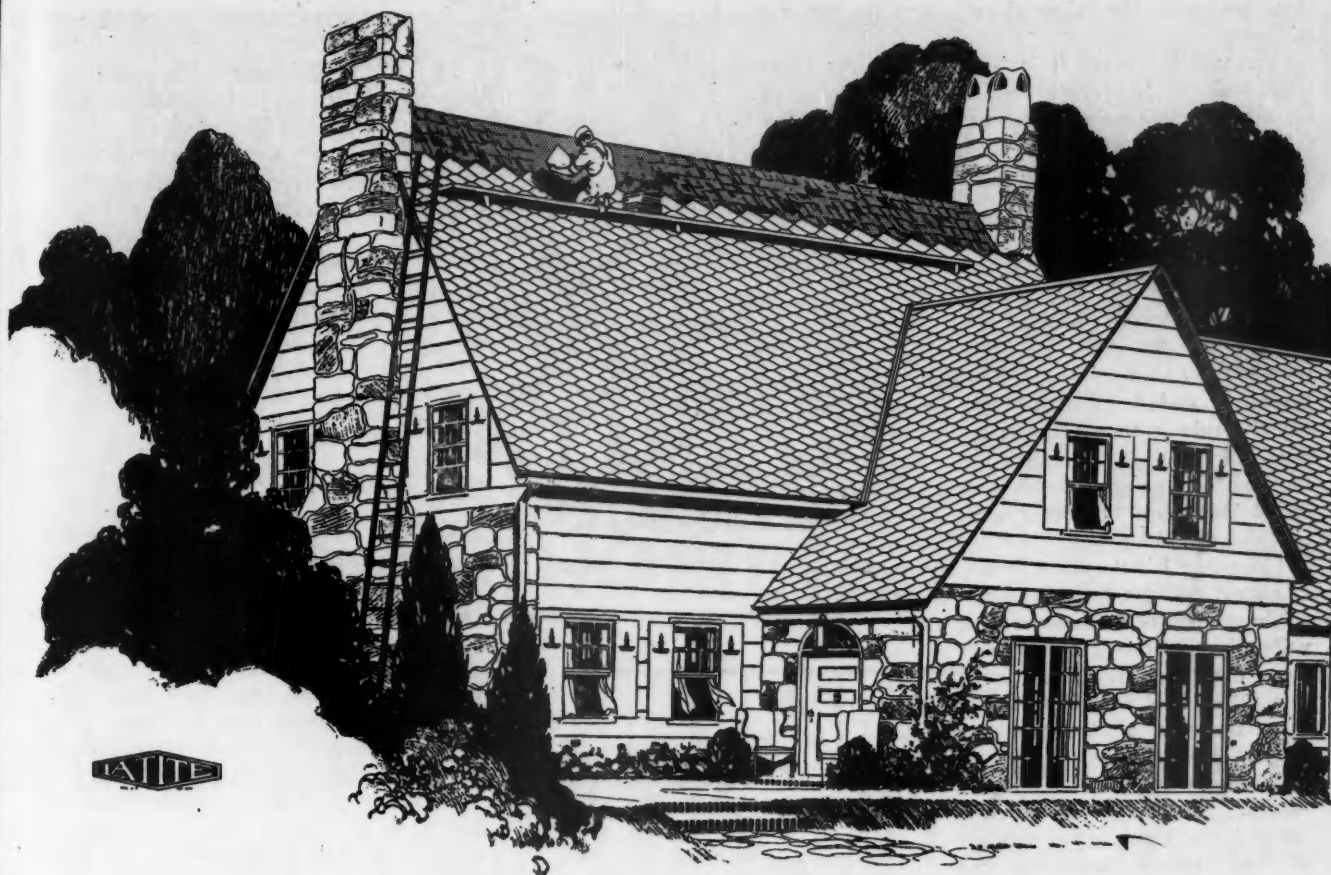
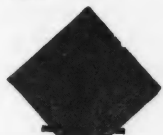


Fig. 33. The Proper Method of Framing an Eyebrow Window.

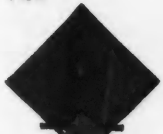


Front View



Front and back views of a Genasco Latite Shingle showing the "key" that locks each shingle to those underneath. **This "key" is invisible on the completed roof.** Genasco Latite Shingles are surfaced with non-fading red, green and blue-black granulated slate.

Back View



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This is the message we are broadcasting to millions of home owners through our national advertising of Genasco Latite Shingles.

Re-roofing the "Genasco Way"—*right over old roofs*—means avoiding the cost, dirt and risk of tearing off the old shingles.

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same length as the rafter N only that the latter has a tail end.

In measuring these it is best to measure along the longest side as the length obtained is to the center of the hip. Measuring along the longest side will take care of this as it makes it practically the same as shown by the detail at the lower right hand corner.

The cut at the upper end of the Jack rafter has a double bevel. It is spoken of as both a plumb or vertical cut and also a side cut. To mark for the vertical cut we use the same numbers as for the common rafter, 12 and 8. For the side cut the rule is to use the numbers representing the length per foot run on one arm of the square and the run of 12 inches on the other arm, therefore the side cut would be $\frac{5}{12}$ or 14.42, say $14\frac{1}{2}$ and 12.

The rafter J is the same as the common rafter H except that the toe has to be cut off.

The rafter K is known as a valley jack. It is 2 feet 0 inch from the rafter J. The run of this rafter is 2 feet 0 inch less than the run of the common rafter. The length is $2 \times 14.42 = 28.84$ inches = 2 feet $4\frac{13}{16}$ inches. The top cut of this rafter is the same as the top cut of the common rafter but the cut at the lower end is different. Here it frames against the valley rafter. To mark for this cut we use the numbers 12 and 8 on the square and mark on the side of the rafter for a plumb cut as shown in Fig. 33. As this end also has a side cut we must mark for this on the upper edge of the rafter. A square placed with the blade along the rafter and the tongue along the ridge would give the numbers to use for this side cut if the square was large enough. However, we may place a square along the rafters as shown in the illustration, so that the tongue meets the edge of the valley at the 12 inch point.

The length on the square then will be the same as the length per foot run = 14.42 or $14\frac{1}{2}$. From this we obtain the rule. To lay out the side cut of a jack rafter use 12 on one arm of the square and the length per foot run on the other arm. In this case we use $14\frac{5}{12}$ or say $14\frac{1}{2}$ and 12 to lay out the angle for the side cut to fit against the valley.

The hip rafter M has the same length per foot run as the valley 18.76 inches. The length is 4×18.76 inches = 75.04 inches = 6 feet $3\frac{3}{8}$ inches. The top and plumb cuts for this rafter are laid out by taking the numbers 17 and 8 on the square. This part is explained more in detail in the last lesson. The side cut for the hip is obtained by taking the length per foot run on the blade and the run of 17 inches on the tongue, thus $18\frac{3}{4}$ and 17 would give the side cut for the hip.

Framing an Eyebrow Window

The following framing of an eyebrow window can be used where it is desired to make the inside ceiling of the same shape as the outside, or the roof. See figure 33.

Cut a rectangular piece in your roof and place headers B and C as though you were framing for a stairway. Headers B and C are made of 2 by 6s, if the rafters are 2 by 4s. For wide windows, these headers should be doubled. The

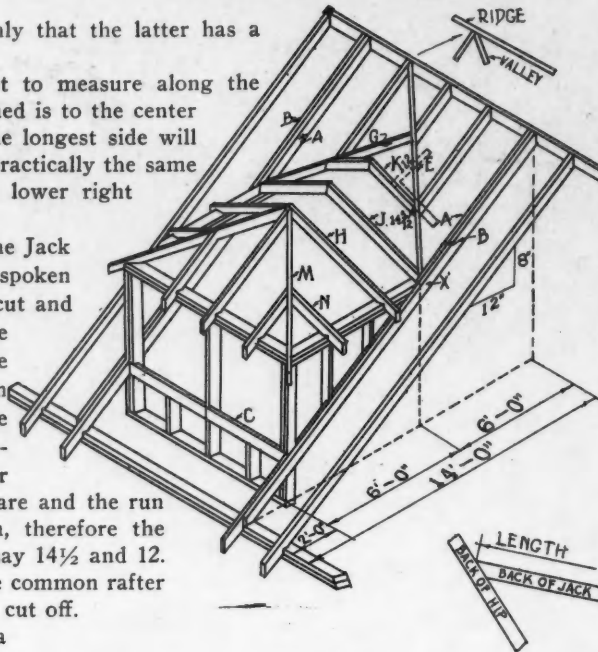


Fig. 32. Showing the Method of Framing a Dormer Roof.

next thing is to cut the curved rafter A which gives the shape of the front of the eyebrow window. The architect's details will usually give the radii to use for laying out the eyebrow window. These same radii should be used for cutting the piece A.

In this case, we have assumed the width 6 feet 0 inch and the radius for the various curves as 2 feet 0 inch. Piece A can be cut out of short pieces of inch boards and spiked together. This piece should be nailed vertically over header B.

The next step is to lay out rafters, 1, 2, 3, and 4. These are made of inch boards and should be placed close together. In this case, they are placed on 8-inch centers. It is best to lay these out on paper before starting to lay them out on the job.

The radius of the upper rafter, in this case, has been taken as 8 feet. This, of course, would depend upon the shape that the eyebrow is shown in the architect's drawing. In the lower right-hand corner, the upper edge of each rafter is shown and the curve that it makes with the main rafter. In the upper right-hand corner, each rafter is shown separate, as it would be cut and spiked together.

One end of each of these 1-inch rafters is spiked to piece A and the other end, to header C. The headers B and C when made of 2 by 6 boards, can be chipped off at the bottom, so that the ceiling line is unbroken. For sheathing, several thicknesses of thin boards can be sprung to shape on the ground before putting them on the roof. For the ceiling, metal lath can be used. The sheathing boards are run in the same direction as they run on the main part of the roof.

Problems

After studying the framing of the dormer of figure 33, it will be well to assume a different pitch for both the main roof and the dormer and to figure the lengths of the different rafters.

1. Assume that both the main roof and also the dormer have a 10 inch rise per foot run or $\frac{5}{12}$ pitch. Find the height of the front of the dormer.

Use this table.

Pitch	Length per foot run for common rafter	Length per foot run for hip
$\frac{1}{4}$	13.42 inches	18.00 inches
$\frac{1}{3}$	14.42 inches	18.76 inches
$\frac{2}{3}$	15.00 inches	19.21 inches
$\frac{5}{12}$	15.62 inches	19.69 inches
$\frac{1}{2}$	16.97 inches	20.78 inches

- Find the length of the hip rafter M.
- Find the length of the valley G.
- Find the length of the valley E.
- Find the length of the Jack N.
- Give the numbers for the side cut of the Jack rafters.
- Give the numbers for the side cut of the valley-G.
- Give the numbers for the side cut of the valley E.

(Continued to page 220.)





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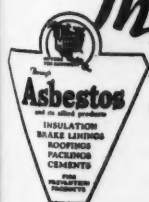
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WHAT'S NEW?



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The diameter of the horizontal circle which reads to five minutes, has been increased to four and a half inches, which enables quick reading to the vernier.

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This level is sold under an easy rental purchase plan, giving the user almost a year in which to pay for the instrument while using it.



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The tables are long and smooth and both front and back tables raise and lower smoothly and easily by means of small hand wheels. The adjustment of the front table of



A Small Woodworker Which Saves Time and Energy of Workmen Is an Economy in the Shop and This Machine May Be Used Either for Permanent Installation or as a Portable Machine to Go on the Job.

the 4-inch machine allows for a depth cut of $\frac{3}{4}$ inch and rabbetting $\frac{1}{2}$ inch, on the 6-inch machine the depth is 1 inch and the rabbett $\frac{1}{2}$ inch. Special shaped knives can be used as provision has been made to quickly widen the throat by removing steel lips. Safety is provided by a guard which automatically covers the knives.

The 4-inch machine is driven by a $\frac{1}{4}$ h.p. motor while a $\frac{1}{2}$ h.p. motor is used for the 6-inch machine. All machines are equipped with 40 degree, propulsion-induction type, continuous duty motors. Power can be obtained from any lamp socket, and the machines are equipped with 10 feet of heavily insulated cable and connector. The fence can be adjusted to any angle from square (90 degrees) to 45 degrees. The floor space required is 28 by 30 inches.

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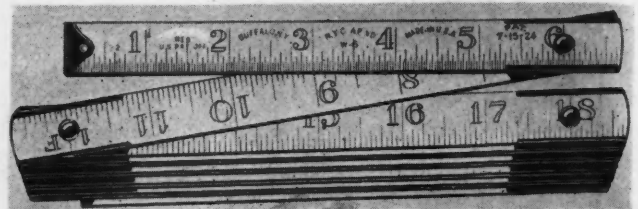
These tiles are manufactured in a great variety of colors and shades. Only permanent mineral colors are used, but there is practically no limitation to the coloring effects available in reds, browns, greens, yellows, blues, blacks and grays. They are furnished in select grades only. No seconds or culls are offered. They have exceptionally artistic and decorative merit and will appeal especially to those who wish to carry out carefully considered color schemes in tile flooring.



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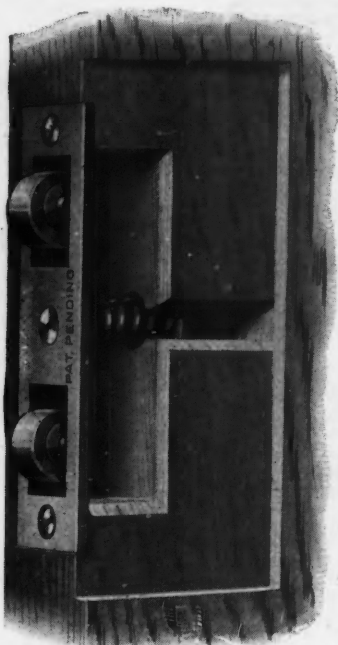
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It greatly simplifies the installation of windows, as no space need be allowed for weights, and the window frames can be set against a solid brick wall if desired. Due to the fact that the tension is adjustable, this can be used with any size or weight of window. The window lifts easily up and down, and yet stays at any desired level.



Motor Driven Centrifugal Pump

THERE was recently placed on the market a new motor-driven centrifugal pump which by its design effects a great fuel saving. In its operation as applied to a heating system it tends to create a vacuum, returns the condensation from the return lines, coils or radiators that are on a line with, or below the level of the water in the boiler, thus eliminating any sluggishness in the heating system. At the same time it introduces live steam into the returns, throwing off heat into rooms instead of cold condensation. The vacuum that this pump creates permits the water to be boiled in the boiler at a lower temperature than otherwise possible, and thus effects a great fuel saving.

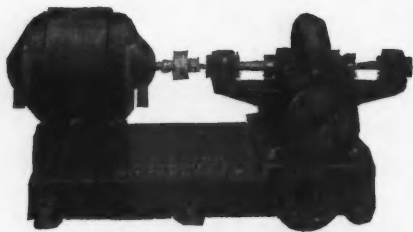
Another feature of this machine is the capacity of the pump which is between 4,000 to 7,000 feet, depending upon the size of the pump.

The design of the pump is simple, consisting of merely a bronze centrifugal pump

with a bronze impeller. This impeller consists of a wheel revolving inside the pump case. As it revolves it touches only the water and does not touch or rub against any metal part, reducing the possibility of wear. With this construction thirty-two parts are eliminated, doing away with gears, pulleys, buckets, belt and pump valves.

This electrically driven pump has a wide variety of applications. It may be used advantageously in condensation, water supply, refrigeration, circulation and heating systems. It is driven by a ¼-horsepower motor direct connected through a flexible coupling and will pump water from wells, cisterns or streams to farms, homes or commercial buildings without the use of any tank.

Another distinctive feature of this device is that either



This Centrifugal Pump Is Adapted to a Wide Variety of Uses and Can Be Used to Pump Water from Wells, Cisterns or Streams on the Farm Without the Use of Any Tank.

opening in the pump may be used as the outlet or inlet by merely reversing the motor. In addition, it is impossible to overload the pump since the capacity remains nearly constant regardless of the load.



Coated Waterproof Paper

THE manufacturers of a waterproof building paper base their claims for superiority on the coating of the paper on both sides. The oils in uncoated paper will eventually dry out destroying the waterproof qualities but it is claimed that the coating of this paper seals in the interior oils, repels water and protects the paper against rain, wind, snow, dust and alkali in stucco, indefinitely extending its life and service. It contains no tar or other acids to corrode tin roofing or nails. The difference in cost between this and uncoated papers is small. It is sold in rolls of 500 square feet 36 inches wide.



A New Kind of Expansion Shield

IN this age of concrete builders are always on the lookout for easy ways of fastening things to concrete. The practice has been to drill holes, insert screws or lag-screw shields, take a screw driver or monkey wrench and turn the screw home. One company has brought out a new expansion shield that is very simple to use. They claim that it saves fully 50 per cent of the time required in making the average installations.

This new shield permits a workman to use the work as a templet, does away with the necessity of spotting for holes and removing the work until the hole is drilled. Holes for this new shield are the same size as the holes in the fixture itself. This is a supreme advantage in installing heavy machinery.

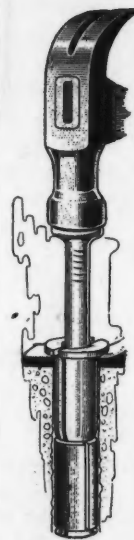
The shield is flanged top and bottom. Above the bottom flange is a soft metal wrap. When the shield is dropped in the hole and the nail driven home, the forced expansion bonds the soft metal wrap into the rough side of the hole and the bottom flange clinches the side with a vise-like grip far below the surface. The nail merely expands the metal. The top flange holds the lead.

In electrical work these shields are particularly useful in fastening conduit straps, anchoring switches and switch boxes, erecting panel boards, switch boards. They are made in seven sizes, from 3/16 inch by 7/8 inch to 1/2 inch by 2 1/4 inch.



Permanent Shade Cloth in Colors

A NEW permanent shade cloth, which was announced in July and which is tough, flexible, crackproof and can be washed with soap and water, is offered in a large variety of colors to meet every requirement of shade installation. The light colors, which are translucent, include snow, sunset, after glow, dawn, pearl, shadow, mist, and dusk. The dark colors are nearly opaque and include beaver, leaf, laurel, meadow, forest, midnight, and raven. The duotone colors are also practically opaque and are combinations of a dark color on one side and a light color on the other side. This combinations are laurel and snow, sunset, laurel and after glow, meadow and snow, forest and snow.



An Expansion Shield which Greatly Simplifies Fastening of Anything to Concrete.



“~and here’s our bright basement”

“Isn’t it bright and airy—almost as light as the rooms upstairs? It’s one of the reasons why we bought the house.”

A bright, airy Fenestra basement is one of the big advantages that home-buyers are looking for today. They want the whole basement flooded with light. They want a bright, airy laundry, a furnace room where they can see, and they want a playroom in the basement for the children.

Why not give your prospective home buyers what they want? Why not when Fenestra Basement Windows cost no more than wood windows? Why not

when they will help you sell the houses you build?

But there are other reasons that interest the builder. Fenestra Basement Windows are easy to install in brick, hollow tile, concrete block, poured concrete or field stone. They come complete—sash and frame with hinges and lock attached. Dealers everywhere carry them in stock ready to deliver with your other foundation material.

You’ll find similar advantages in Fenestra Basement Windows and in Fenestra Garage Windows. We’ve prepared interesting literature covering all Fenestra products—you can get it by calling on the Fenestra Dealer in your town or by writing us.

DETROIT STEEL PRODUCTS CO., B-2260 E. Grand Boulevard, Detroit, Mich.

Factories in Detroit, Michigan, Oakland, California, and Toronto, Ont., Canada

For Canada: Canadian Metal Window & Steel Products, Ltd., 160 River St., Toronto, Ont.

Fenestra

for homes and apartments
schools and institutions
commercial buildings
all industrial structures

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

MOTOR TRUCKS *and* TRAILERS



Keeping the Trucks on the Road

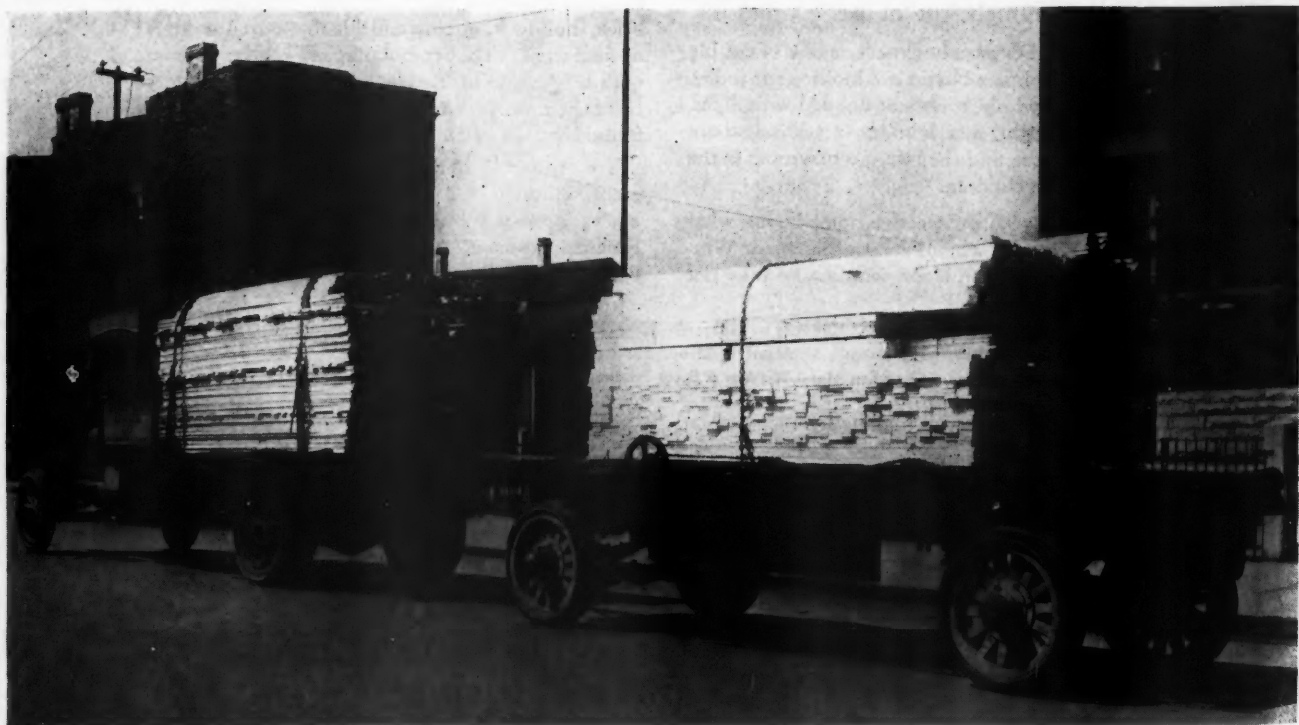
IN order to get the most economical and satisfactory service from any motor truck attention must be given to a systematic method of maintenance. Many of the largest and most successful operators of truck fleets have developed elaborate systems which might at first glance appear costly. Experience, however, has proved that such a system, when intelligently applied, is highly economical. The reasons for this should be apparent.

A truck is an expensive piece of machinery and when not kept in constant repair it rapidly deteriorates and soon must be replaced by a new truck. One of the greatest operating expenses is the item of deterioration, and it is one which is all too often overlooked entirely. Not only this but an idle truck means an actual money loss. An idle truck means an idle truck driver and wages paid to a truck driver who is loafing while his truck is not in operation are a dead loss. There is also the loss of time on important work which is delayed as well as the expenses of the repairs.

It should, then, be the aim of every truck operator to keep his trucks in operation 100 per cent of the working time day. This may seem an impossibility, but there are many operators today who are doing very nearly this.

Essential to the accomplishment of such a record are inspections and records with the provision for repairs, when needed, to be made outside of regular working hours. The practice of big fleet owners can well be copied, with certain changes to adapt it to the conditions under which the smaller owner operates.

First consideration is given to the selection of drivers, by these operators. Very full information is obtained about every applicant for a job to determine whether he possesses the necessary knowledge for driving and the care of his truck and also whether he is a man who will feel the responsibility of his job and take pride in keeping his truck always at its best. Men who drive too fast, take chances, neglect oiling and generally abuse a truck, should never be employed. For the small operator who can not



A Truck and Trailer Outfit, for Handling Lumber, Which Is Designed for Rapid and Economical Service. Rollers in the beds of these units make it possible to remove the entire load at once, requiring but a few minutes' time.



*Public Confidence Is The True
Test Of Merit*

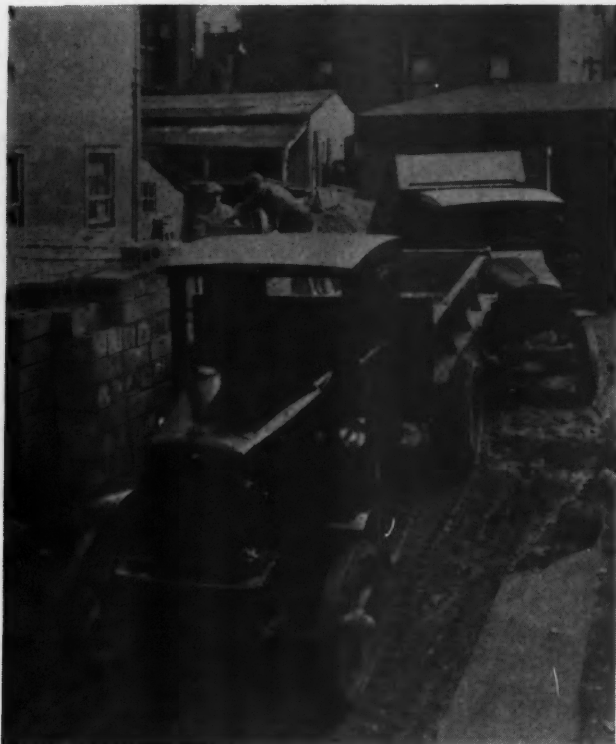
Thousands of GMC users express their faith in GMC by the surest sign—repeat orders. They know that GMC never sits back and rests in self-satisfaction every time it does a good job. GMC keeps right on working hard to do a still better job of furnishing high-grade performance with economy. These haulage buyers use GMC's continuous advance in the furthering of their own progress. Why don't you investigate GMC's performance records?

GENERAL MOTORS TRUCK COMPANY

Division of General Motors Corporation

Pontiac, Michigan

General Motors Trucks



Here Are Two Units Which Are Used in a Yard Handling Bulk Material and Also Concrete Blocks. The dump feature of the bodies makes for quick handling of the bulk material and the square box sides are suitable for the blocks.

afford to employ a special mechanic for inspection and repair work, it is an economy to employ drivers who have considerable mechanical knowledge and are capable of inspecting their own trucks and making minor repairs when needed.

After the trucks have been properly manned, the next thing is to see that they are always properly driven, and for this purpose a set of simple rules should be instilled into every driver. The owner who is not personally familiar with the handling of trucks can easily obtain such rules from the company from which he purchases trucks and copies should be furnished to the drivers and conspicuously posted in the garage.

At the end of each day's work every truck should be given an inspection to see that there are no minor repairs or adjustments needed and a report of this inspection as well as of the mileage, gas consumption and general performance of the truck, for the day, should be made on a blank provided for this purpose. If these inspections are intelligently made and the reports properly filled out, it will be an easy matter to determine whether or not the truck is giving its best performance from a mechanical point of view.

The reports will also show whether the truck is being employed economically or whether there is too much idle time spent in loading, unloading or waiting for loads. If it is found that the reports show too much idle time it is up to the man who is in charge of the work to devise a means of eliminating this and keeping the trucks on the road.

The inspection will show whether or not any minor repairs or adjustments are needed. When needed such work should be done between quitting time and time for the next day's work to start. For this work a mechanic should be employed who will be a night man, if the owner operates enough trucks to enable him to employ a full time mechanic. After the trucks have come in from the job this mechanic will make inspections and then take care of oiling and greasing and make whatever repairs are needed during the time when the trucks regularly stand

idle. In this way they will be in first class shape to start the next day's work without the loss of any working time.

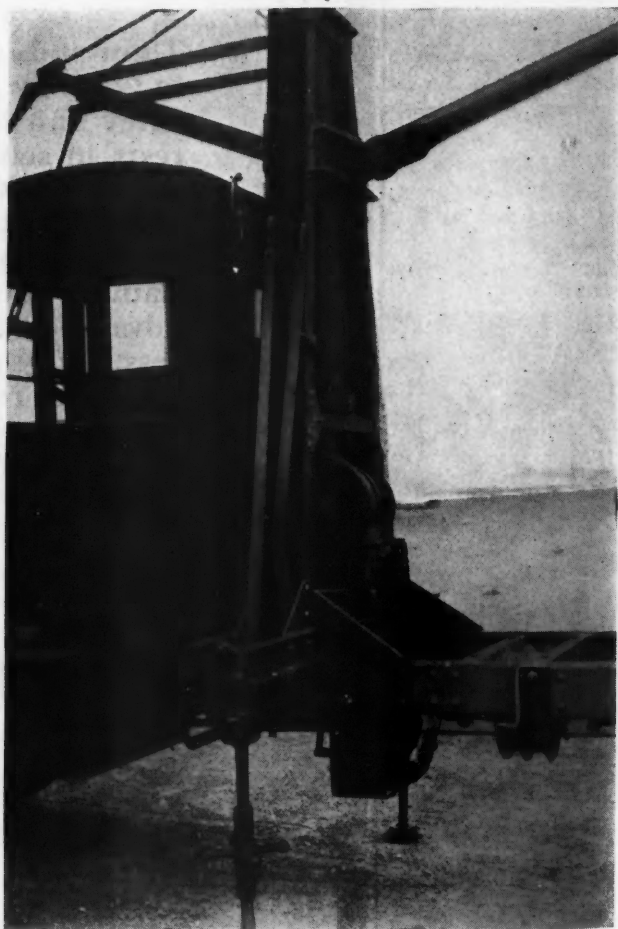
Where it is not possible to employ a mechanic, and the operator must depend upon a service station for maintenance, it is well to employ drivers who are capable of making their own inspections and adjustments. Arrangements should then be made with the service station to take care of all repairs at night after the working day is finished. This will, in the long run, prove an economy.

Such maintenance as this will serve to keep trucks operating at their best most of the time, but even under such good care they will require a periodical overhauling. No piece of machinery, no matter how perfect or costly, can be operated day after day for a long period of time without showing considerable wear and requiring the replacement of parts where the wear is greatest.

The overhaul job should be planned for regular periods. Once a year will probably be sufficient and the overhauling should be so scheduled that only one truck will be laid up at a time, and so that all of this work will fall during the slowest portion of the year. In this way it can be accomplished with the least interference with work, and if it can come in winter, which is quite possible in the building industry, it can be handled by the service station during its slack period, probably at cheaper rates.

With regular maintenance any good truck will operate in a satisfactory manner and stay on the road its full day after day, giving splendid service. But every so often an emergency will arise, in the form of an accident or unforeseen break-down which puts the truck out of commission

(Continued to page 212.)



Along the Line of Special Truck Equipment This Motor Operated Crane Is Worthy of Note. The levers control the motor clutch and gear box and there is an auxiliary gas throttle back of the cab. The jack-screws under the front cross members are secured to brackets on the frame when the crane is not in use.



Friendly Counsel

Graham Brothers truck production for the first six months of 1925 equalled their entire production for 1924.

Words of commendation from good business men in every part of the world are responsible.

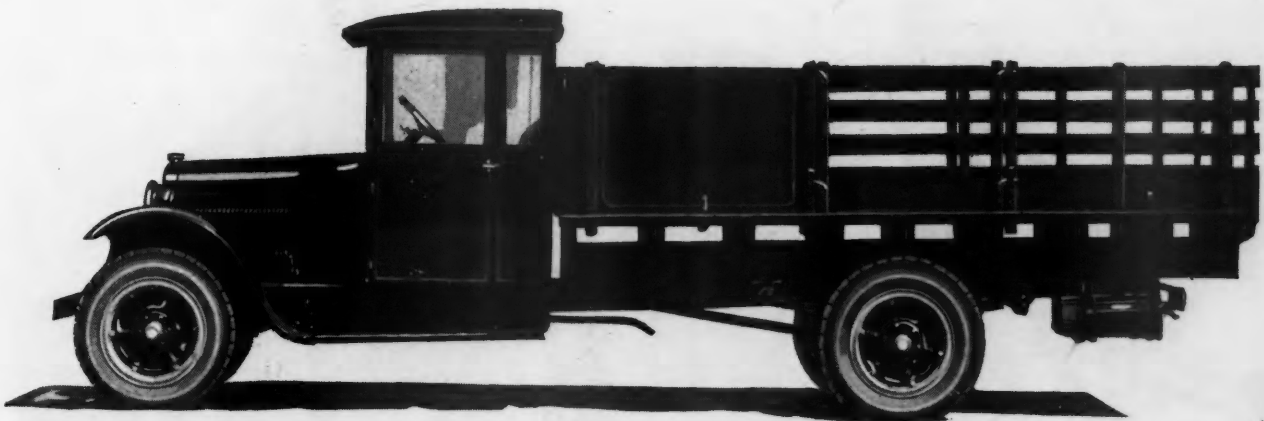
Thoroughly sold by their own experience with these trucks, they in turn are selling their friends.

1 Ton Chassis, \$1095; 1½ Ton, \$1280; f. o. b. Detroit

GRAHAM BROTHERS

Detroit — Evansville — Stockton

A DIVISION OF DODGE BROTHERS, INC.
GRAHAM BROTHERS (CANADA) LIMITED - TORONTO, ONTARIO



GRAHAM BROTHERS TRUCKS

*SOLD BY DODGE BROTHERS
DEALERS EVERYWHERE*

Homes of Distinction at Moderate Cost

A FEW years ago a New Yorker of vision, who had purchased a farm within sight of Hackettstown, N. J., referred to the Musconnetcong Valley as an "undiscovered country. Situated near the head of this valley, amid mountains and hills of unsurpassed beauty, Hackettstown has long been recognized as one of the most delightful towns of northern New Jersey. Its finely paved, maple lined residential streets and neat business district excited the admiration of visitors. However, 58 miles from New York City, just outside the recognized commuting zone, Hackettstown has not until recently felt the surge of the real estate promotor and the peculiar situation existed of a town being decidedly under boomed.

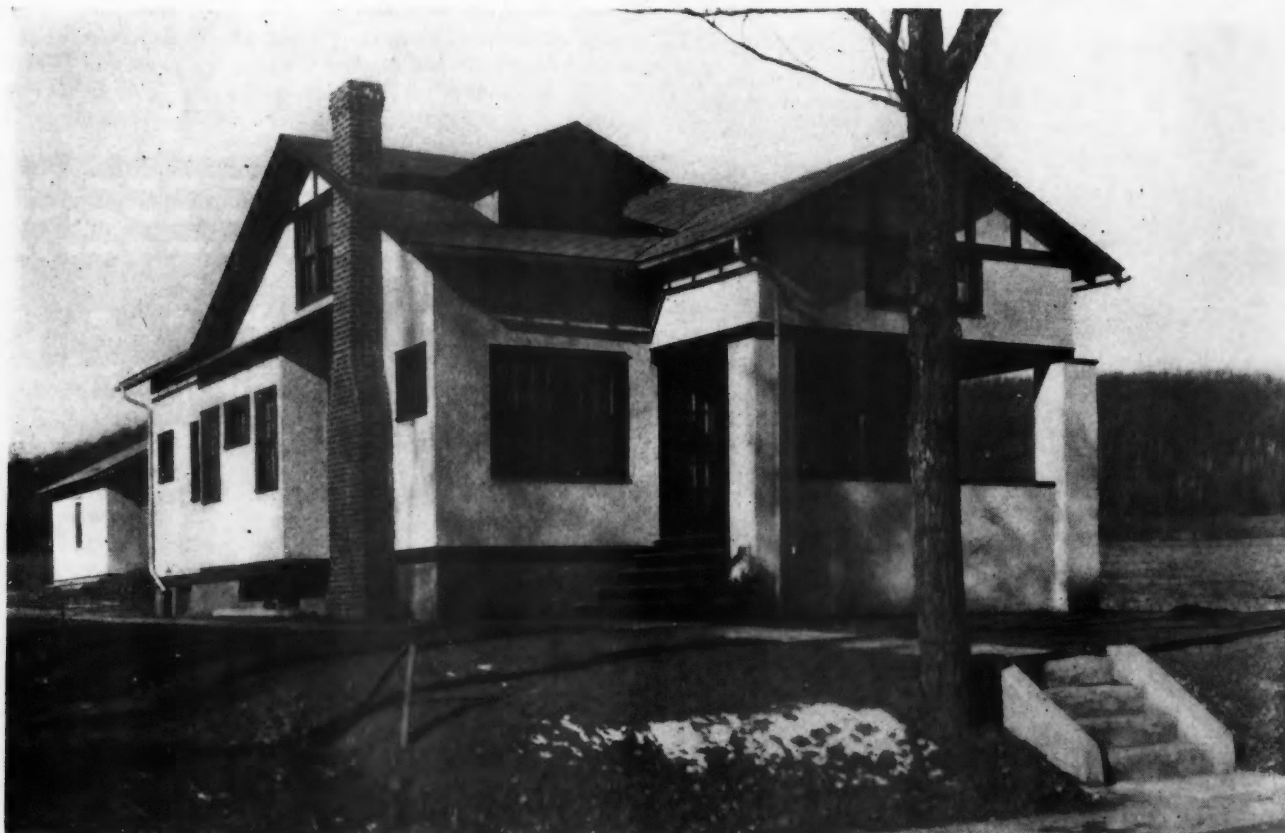
The town boasted a business and social club with commodious rooms and a membership of 100 and a waiting list attesting the solidarity of the town's citizenship. A nine hole golf course and country club, flanked on one side by Schooley's Mountain and on the other by the crystal Musconnetcong River, attract the summer residents of nearby lake and mountain resorts. The state fish hatchery and park, with its wonderful springs and inland studded lakes and ponds, the nearby game farms, the trout streams that abound in the vicinity are among the best in the state and some of them within the town limits, all have invited visitors from far and near and their access has been made easy by concrete roads radiating in every direction. And yet, though there was not a vacant store nor a vacant residence in the town, rentals were too low to invite speculative building and the growth was slow.

A healthy local building and loan association had, it is

true, built many houses in its 18 years of existence, but none to spare nor to be used to attract new residents to the town. It was out of this situation that the Hackettstown Investment & Development Company took its inspiration. The company was organized to supply homes for those who were knocking for admittance and the work which it has done has been noteworthy.



Typical of the Attractive Interiors of the Belwood Terrace Homes in Hackettstown Is This Homey Living Room with Its Comfortable Brick Fireplace.



Here Is a Fine Example of the Sort of Houses Which the Hackettstown Investment and Development Company Is Building in Its Belwood Terrace Addition and Selling at Prices Which Place Them Within the Reach of Families of Moderate Means.



Fordson Tractor Cuts Hauling Costs 70%

By using a Fordson tractor with hoist for *loading*, unloading as well as hauling bricks operation costs were reduced from \$2 per M. to 60c. This occurred in New Orleans with The Standard Brick Co.

This outfit proved so satisfactory on a trial that a second unit was ordered and a third planned for the near future.

Your business may be such that you are paying excess charges for power work which could well be reduced by the use of a Fordson tractor with special equipment. Hundreds of other concerns have learned this from their nearest Authorized Ford Dealer and are now enjoying the advantages of lowered costs and resulting higher profits. Call on him for a solution to your problem. There is no obligation attached to this service.

Fordson Tractor—\$495—f. o. b. Detroit

Ford
CARS TRUCKS TRACTORS



In One of Its Developments the Hackettstown Investment and Development Company Is Building Five-Room Bungalows Which It Sells, Fully Equipped with Water, Light, Heat, Sidewalk and Inside Walks, for \$4,800.

For a time houses were erected on lots acquired here and there throughout the town, but recently the company decided to concentrate on two sections, the most important being the Belwood Terrace addition, a fifteen acre tract having the advantages not only of residential attractiveness, but also being within a few blocks of the business center.

Already seven houses have been completed, six of which were sold before completion. The accompanying photographs and plans illustrate the general character of the development. The lower floor plan is virtually the same in all of the houses, but modifications of roofs, porches and other details lend individuality to each building and no two are alike in outside appearance.

The lots are all 50 by 150 feet and a sidewalk extends the entire length of the development, about a quarter of a mile. Each house is turned over to the buyer complete with water, light, heat, sidewalk and inside walks. These properties are sold for prices ranging from \$5,800 to 6,500 and on another development fully equipped five room bungalows are built for \$4,800.

The local building and loan association lends its assistance by financing those who are unable to buy for cash. This development has also encouraged others to engage in building operations until the building activities are extending to all quarters, for be it said that in Hackettstown north, south, east and west sides all possess home sites of marked beauty.

The rising tide of homeseekers from the largest center of population in the world is beginning to flow into the Musconnetcong Valley and Hackettstown is in the happy position of being a rapidly expanding community without a boom. Incidentally local bank deposits are eight times what they were when these activities first began.

Mr. William Swanger, of the American Saw Mill Machinery Company, is vice-president of the Hackettstown Investment & Development Company and, together with the other officers, has been an active force in this substantial home building development. Much credit is also due to Petty & Williamson, builders, both Hackettstown boys and real craftsmen, who have ably assisted in making good the company's slogan—"Homes of Distinction at Moderate Cost."



Keeping the Trucks on the Road

(Continued from page 208.)

until repairs have been made. At such times there is an unavoidable loss of time, but it is still possible to look forward to such circumstances and arrange to cut the loss of time to a minimum, by the proper provision of repair parts and repair facilities.

It is because of this fact that it is always wise in buying

trucks to select a truck which has ample service facilities ready at hand and for which parts can be obtained without sending to a distant source of supply.

As an example of what is meant we can take the experience of a certain man with his new passenger car. He had recently bought a rather high priced car turned out by a reputable manufacturer and it gave him excellent service. He was highly pleased with his new machine and planned a trip through the East. While on this tour he was the victim of an unfortunate accident in which an axle was broken. At the town nearby no axle was available and he immediately got in touch with the nearby cities, but without any better luck. Finally he was forced to wire to the factory for an axle, and before it had arrived and was installed so that he was able to go on his way, several days were lost. Needless to say he disposed of the car at the end of his trip and invested in a car for which he could always be sure to obtain replacement parts without delay.

In line with this matter of quick replacements it is well to mention the system of unit construction which has been adopted by some of the truck manufacturers. By this system the truck is constructed in units which can be easily and quickly removed and replaced by rental units while repairs are going on. This system extends even to the engine. With this system something may go wrong with the engine. The truck is driven into the service station. Here there are several spare engines, in good condition at all times. The engine is removed, a spare engine installed and the truck goes about its work with little delay. When the original engine has been repaired the truck is again sent to the service station, but outside of working hours this time, the spare engine is removed and the original engine replaced.

The system is much like the system of rental batteries which is used by battery charging stations, and many truck operators have found it a great money saver, enabling them to keep their trucks on the job with the least possible loss of time.



Standard Contracts Are Ready

ANNOUNCEMENT is made by the Joint Conference on Standard Construction Contracts that the Standard Contract for Engineering Construction is now available for distribution and copies may be obtained from the Associated General Contractors of America.

The fourth edition of the Standard Document of the American Institute of Architects is also just off the press and copies may be secured from the headquarters of the Institute in Washington, D. C.

These contracts are the result of years of careful effort, on the part of a number of organizations, to evolve a contract form that would be fair to all parties.

New Jersey
zinc

zinc

The same qualities that make Horse Head Zinc an excellent material for conductor pipes, eaves-troughs, and gutters make it equally desirable for standing seam roofs. It is rust-proof, easily laid, free from repairs, inexpensive, good-looking, ever-lasting.

Standing Seam Horse Head Zinc Roofing is shipped in casks complete with nails, Zinc for clips, and full instructions. Each cask contains enough Zinc to cover one roofing square (one hundred square feet) with full allowances for seams and laps.

The New Jersey Zinc Company
Established 1848
Products Distributed by
The New Jersey Zinc Sales Company
160 Front Street, New York City
CHICAGO • PITTSBURGH • CLEVELAND • SAN FRANCISCO

15-Pound Portable Electric Saw

IT will rip and cross-cut thousands of feet of lumber a day and then the tale is not half told of its virtue. In fact it is a glutton for work, claims the manufacturer of a new 15-pound portable electric saw which is said never to be tired and never stops except to move to another job or to rest the worker. It carries its well-known manufacturer's genuine guarantee of merit.



Weighing Only 15 Pounds and Operating from Any Light Socket, This Little Saw Will Cut Thousands of Feet of Lumber in a Day.

A dust shield is provided and removable without a tool.

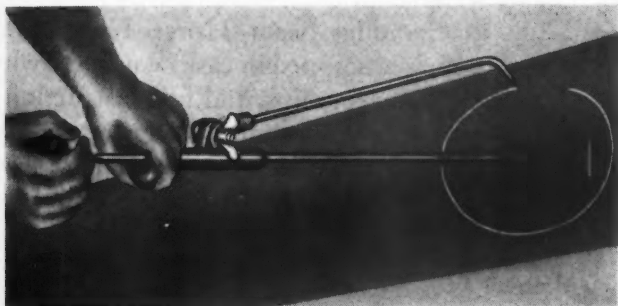
All you have to do in operating the saw is to hold it on the line and it will keep eating its way through wood or bone, wall board, plaster board, ply-metal, fiber, linoleum, hard rubber, light gauge soft metal, bakelite, cork, and many other materials. The saw blade is 6-inch or 7-inch as required.—L. E. RAVENSCROFT.



New Tool for Sheet Metal Work

A DRAWING tool for sheet metal workers, tinnerns, coppersmiths and other mechanics that will make a true circle anywhere has recently been placed on the market by the inventor.

It is so constructed that it will draw a hole for a pipe at any angle and position without being obliged to lay the pipe out. It is operated on the same principle as a compass or divider and has a sliding motion which permits it to draw a circle on any surface, round, flat or uneven, and at any angle required. No matter what the surface



By the Use of This New Tool, Sheet Metal Workers Are Able to Make a True Circle Anywhere on a Pipe or Other Surface.

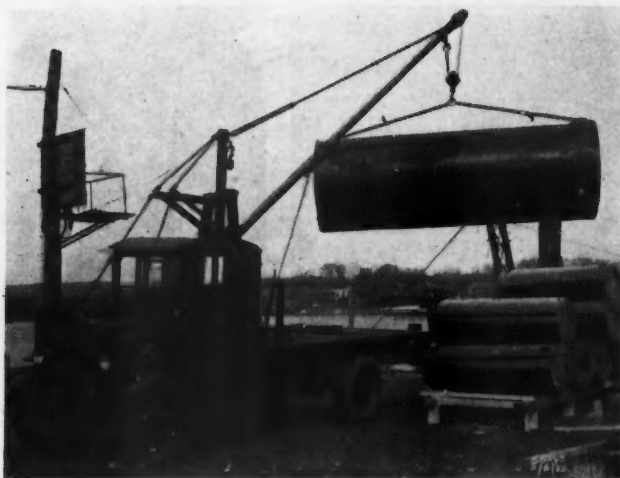
underneath, the tool will make a true circle.

If a hole is to be made on a pitched roof, it cannot be perfectly round, unless made with this tool, it is said, as dividers cannot do this job. Dividers do not outline a hole in a round pipe, but this invention will. The inventor compares it to dividers which would be required to make a true circle from the north pole over hills and valleys, declaring that in principle his device executes the same service.—R. G. THACKWELL.



Portable Crane for Light Trucks

BY virtue of its mobility, the motor truck crane is able to serve a large number of people whose business does not warrant the installation of stationary hoisting devices. Of the several types of portable cranes on the market, the majority are built for use on trucks of five tons capacity or over. To meet the constantly growing demand for a lighter truck-crane combination, one of the truck manufacturers has developed a crane, mounted on trucks of 1½, 2 and 2½-tons capacity.



Great Mobility Makes This Crane, Mounted on a Truck, a Most Serviceable Piece of Equipment, and It Requires Little Alteration of the Truck for Mounting.

This crane, primarily designed for the purpose of unloading 1,000-gallon fuel oil tanks from gondola cars, is adaptable to many other uses, such as handling gasoline drums, barrels, stone slabs, etc., weighing upward to 2,500 pounds.

The equipment consists of a mast, braced and anchored to the chassis frame; a special drum-winch and two booms, the longer of which is shown in the accompanying illustration. The long boom measures 13 feet 3½ inches and has a 16-foot clearance from the ground, while the short boom, measuring 8 feet 11½ inches, has a 10-foot clearance.

Power is applied to the winch from a power take-off through a one-speed forward and reverse gear and a chain drive to the winch-worm sprocket. The controls, consisting of motor-clutch and gear shift, are located directly behind the cab, on the left side of the mast, and attached to the back side of the cab is an auxiliary gas control which permits the operator to regulate the engine speed without leaving his position at the control levers.

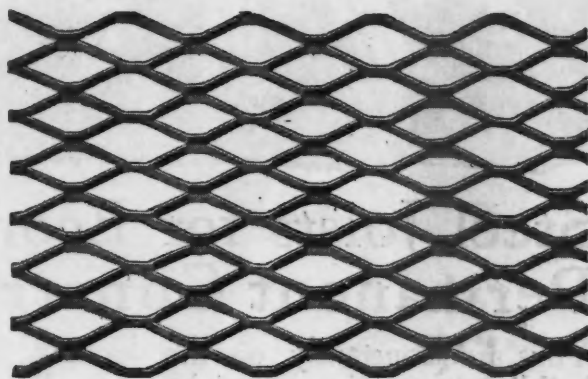
To insure rigidity of the chassis while the crane is being operated, two jack screws support the mast from the ground. These screws are attached to the cross-members under the mast by means of a swivel arrangement, so that when not in use, the free ends may be fastened to brackets on the sides of the frame.

The entire assembly may be mounted on any standard truck made by this company with but little alteration to the body and none to the cab.

STEELCRETE METAL LATH



*The handsome lobby of the
Bedell Store in Chicago
Wm. Balhatchett, Plastering
Contractor.*

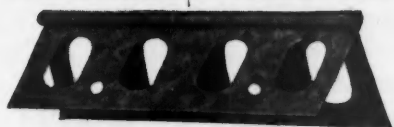


The Hidden Strength that brings Better Plastering

LET every structure you build, large or small, have the protection, the safety, the permanence, provided only by Metal Lath.

There is no compromise with security when you use Steelcrete Metal Lath. There is a suitable Steelcrete Lath for every construction requirement—to provide safety, durability, ultimate economy. Steelcrete Metal Lath is sold by leading dealers in building supplies.

Protect All Plastered Corners with Steelcrete Corner Bead



Steelcrete Wing Type Bead

ON PLASTERED walls all outside corners, where the wear is greatest and the knocks most frequent, should be protected by adequate Corner Beads. There is a suitable Steelcrete Corner Bead for each of your plastering needs. Ask your dealer in building supplies.

STEELCRETE

CONCRETE REINFORCEMENT

Expanded Metal Reinforcing Mesh is the one type of concrete reinforcement which is obtainable through building supply dealers. Agents everywhere.

Used for porch floors, retaining walls, concrete driveways, garages, swimming pools, etc.

Send plans for our estimate and suggestions

The Consolidated Expanded Metal Companies BRADDOCK, PA.

Branch Offices

PHILADELPHIA: 1075 Germantown Ave.
PITTSBURGH: Oliver Bldg.
CHICAGO: 1234 W. Washington Blvd.
NEW YORK CITY: 103 Park Ave.



MINNEAPOLIS: Builders Exchange
DETROIT: Majestic Bldg.
CLEVELAND: 450 Leader-News Bldg.



Steel Joist construction proceeds rapidly with a minimum amount of field labor.

Steel Joists for Economical Permanent Construction

You are constantly on the lookout for better building materials—materials that make your construction easier and quicker, that save you money, time and labor. Truscon Steel Joists will therefore appeal to you particularly. Truscon builds up these Joists for you—to the length specified—they come to you complete, do not have to be cut or fitted. The labor of placing the Joists is all you pay. Learn from Truscon how you can make your construction more profitable with Steel Joists. Inquiry implies no obligation.

Write for catalog and information.

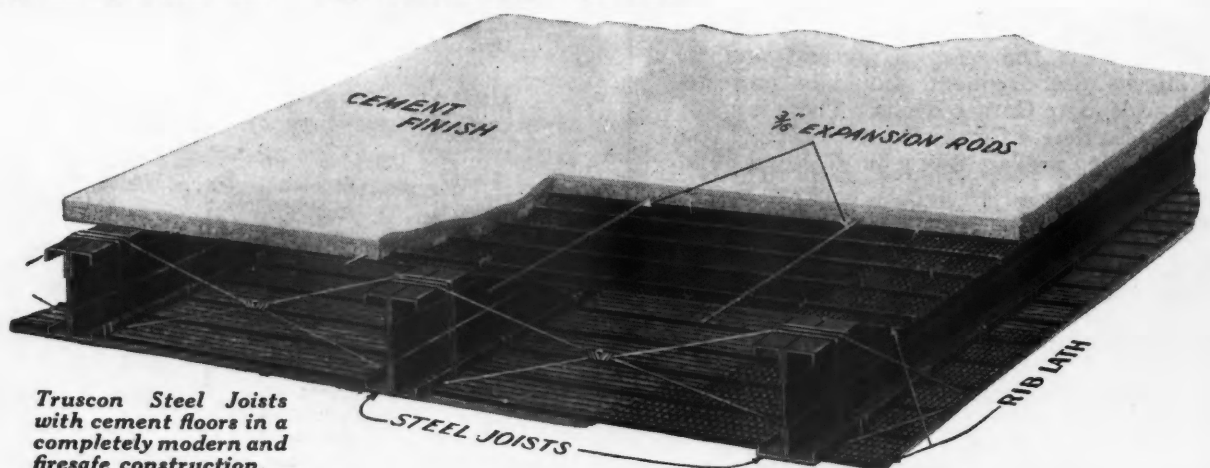
TRUSCON STEEL COMPANY, Youngstown, Ohio

*Warehouses and Sales Offices in Principal Cities
Foreign Div.: New York. Canada: Walkerville, Ont.*

TRUSCON

STEEL JOISTS

Truscon Steel Joists give you a rigid, fire-proof and sound-proof construction. With cement floors they are actually cheaper to build with than wood joists with hard-wood flooring.



Truscon Steel Joists with cement floors in a completely modern and firesafe construction.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Free—Waterproofing Specifications

This handy-reference, file-tabbed specification book—8½x11 inches—covers practically every condition requiring the use of waterproofing, dampproofing or oilproofing materials. The descriptive index on the first page enables you to determine instantly the product you need for the job, and refers you to the page containing detailed specifications for its use on the particular type of work in question. You need this book for your files and it's yours for the asking.

Write for it today

THE TRUSCON LABORATORIES

304 Truscon Bldg.

Detroit, Mich.

The following representative structures have been given proper protection with Truscon Waterproofing Products:

General Motors Bldg., Detroit; Sears Roebuck Warehouse, Philadelphia; Fisher Body Co., Cleveland; Victor Talking Machine Co., Camden, N. J.; Cornell Stadium, Ithaca, N. Y.; Western Sugar Refining Co., San Francisco; Oliver Chilled Plow Co., South Bend; General Electric Co., Schenectady; Western Electric Co., Chicago, Ill.; Grand Central Terminal, New York.





What a world of difference a beautiful entrance makes!

It is a significant fact that many of the finest homes all over the country depend upon Hartmann-Sanders designing and craftsmanship for entrances of beauty.

These famous entrances are so artistic in proportions—so distinctive in beauty—so substantial in quality—and so faithful in their conformance to sound architectural practice—that no architect or contractor hesitates to stand sponsor for them.

Used in remodeling, Hartmann-Sanders Entrances literally make all the difference in the world in the appearance of the

building. Besides, they enhance value far beyond their comparatively small cost.

Back of Hartmann-Sanders Entrances are 26 years of experience and America's largest facilities for economical production. They are also designed to your own or architect's specifications. Manufactured complete, ready to erect. Every entrance stabilized by famous Koll Lock-Joint Columns.

Write for new catalog No. Y51 containing many entrance suggestions. Address Hartmann-Sanders Co., 2171 Elston Ave., Chicago, Ill., Eastern Office and Showroom, 6 E. 39th St., New York City.

HARTMANN-SANDERS

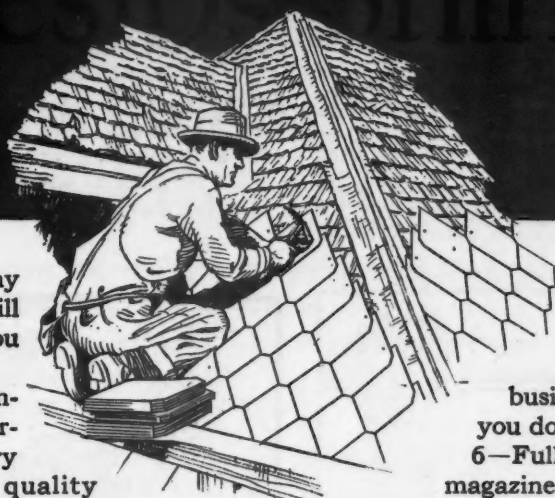
Colonial



Entrances



Seven reasons why you can do more business with Eternit Rigid Asbestos Shingles



THERE are seven good reasons why the Eternit Shingle proposition will bring you a volume of business you never thought possible.

1—Eternit Rigid Asbestos Shingles make the beautiful, weather-proof, fire-proof roof that every home-owner wants. From a quality standpoint, you can go the limit in recommending these shingles. They will make good.

2—High though the quality is, the price of Eternit Shingles has been hammered down until you can compete with substitute roofings and make a generous profit.

3—Our financing plan lets you sell Eternit roofs on easy time-payments. With it you can land business that would otherwise get away or that you would have to carry on your books.

4—Because of our exclusive dealer policy you cash in on all the business developed in your territory.

5—Both through our field force and the home office, we keep in close touch with you. We show you how to develop business in your territory—and help you do it.

6—Full-page advertising in colors in magazines of national circulation is consistently keeping Eternit Shingles before your customers.

7—Planned production and enormous reserve stocks assure prompt service that lets you fill any demand promptly.

The best evidence of the effectiveness of the seven-point proposition is the success it is bringing Eternit dealers in other territories. Your territory offers the same opportunities. Write today for full details of the profits that are waiting for you as the Eternit Shingle Man.

*Ask about Eternit Asbestos Building Lumber
—the same materials made up in sheet form.*

AMERICAN INSULATION CO.

Roberts Avenue and Stokley Street, Philadelphia, Pa., or Hibernia Bank Building, New Orleans, La.

Eternit

REG. U. S. PAT. OFF.

RIGID ASBESTOS SHINGLES

Make your first roof last

Less for Plastering on Cinder Block

THAT cinder block is an economical material to use as a plaster base is brought out by following letter from a plastering company to a well-known Kansas City contractor:

Kansas City, Mo., July 29, 1925.

Fogel Construction Co.,

Kansas City, Mo.

Gentlemen: Re: Plastering Paseo High School.

If cinder block are used in place of clay tile for partitions in the Paseo High School, I will deduct \$1,000.00 from our contract price for the plastering.

There are about 65,000 square feet of partitions in this job.

Hoping this will meet with your approval, we are,

Yours very truly,

H. G. BEARD PLASTERING Co.,

By H. G. Beard.

Correcting a Mistake

UNDER the title "Distinctive Cinder Block Home" there appeared an article, in the May, 1924, issue of AMERICAN BUILDER, describing the beautiful residence of Mr. Grove Locher, near Lancaster, Pa. Through a lack of complete information in the office of the company which supplied the cinder blocks, the supervising architect was credited with this house. The error has since been discovered. The original plan was the creation of Mr. H. E. Yessler, architect, of New York City, and is an excellent example of the fine work for which he is known.

De Vilbiss Mfg. Co.

A DETROIT sales and service branch has recently been opened by the De Vilbiss Manufacturing Company, of Toledo, Ohio. Occupying, at 4614 Woodward Avenue, a portion of the ground floor and basement of the Garfield

Building, gives the De Vilbiss company a commodious and convenient downtown place of business in the Michigan metropolis.

An Acknowledgment

THE first of the colored pages in the July American Builder, color plate J-I illustrated a Fourth of July scene—a beautiful swimming pool and garden with the American Flag reflected in the water. The descriptive caption stated that this swimming pool was in connection with a Washington home. This was an error.

This beautiful garden and pool are located in Omaha, Nebraska, in connection with the home of Mr. Clyde W. Drew of the firm of Briggs & Drew, Drainage Contractors, photograph by Louis R. Bostwick of Omaha.

The editor is very glad to make this correction giving credit where credit belongs for a very beautiful photograph and a most unusual home garden feature.

Answers to Problems on Page 198

1. The height of the front of the dormer is $10 \times 6 = 60$ inches = 5 feet 0 inch.
2. The length of the hip M is 4×19.69 inches = 78.76 = 6 feet 6 $\frac{3}{4}$ inches.
3. The length of the valley G is the same as the hip M. It is 6 feet 6 $\frac{3}{4}$ inches.
4. The length of the valley E is $6 \times 19.69 = 118.14$ inches = 9 feet 10 $\frac{1}{2}$ inches.
5. The length of the jack N is $2 \times 15.62 = 31.24$ inches = 2 feet 7 $\frac{1}{4}$ inches.
6. The numbers for the side cut of the Jack rafters are 15 $\frac{1}{2}$ and 12 marking along the arm on which the 12 is taken.
7. The valley G has no side cut at the upper end.
8. The numbers for the side cut of the valley E are 19 $\frac{1}{2}$ and 17.



Install **Levolver** White Glazed Porcelain Brackets

An unusual combination of convenience outlet and artistic, durable bracket. On new work may be installed at cost of conduit run and outlet. On old work does away with tearing up floor and wall. Easily kept clean and will not soil while installing. The finish is everlasting and will not chip, scratch or stain.

The soft white finish and rust-proof nickel trimming presents a pleasing appearance and harmonizes with other fittings. The lamp may stand upright or hang inverted to suit surroundings.

Write today for Descriptive Folder

Levolver
 Pull Sockets
 Pull Hooks
 Conduit Box
 Picture, Lever, Pull
 and In-Servant
 Switches
 - Brackets

MCGILL
MANUFACTURING CO.
Electrical Specialties of Quality
 ESTABLISHED 1904
VALPARAISO - INDIANA

Levolver
 Lamp Guards
 Lamp Coloring and
 Fronting
 Soldering Flux
 Glow Torches
 Lamp Changers



These **HEAT WAVES** show how the heat **RISES** and **ESCAPES** through the roof and walls of your house

That's what makes the snow melt so fast on your roof. Do you like to buy coal to melt snow? This is sheer waste, and you can stop it by insulating the roof and walls of your house with

CABOT'S Heat ~ "QUILT" ~ Insulating

You can lay Quilt under your shingles, siding, tiles or boarding, or between your studs or rafters or under your attic floor. It will save enough coal to pay for itself in two or three winters, and keep on saving heat and doctor's bills and making you comfortable as long as the house stands.

Send for Free Sample of Quilt and full information

SAMUEL CABOT, Inc.
 141 Milk Street Boston, Mass.
 342 Madison Avenue, New York
 5000 Bloomingdale Ave., Chicago
 Los Angeles Portland

Cabot's Cresote Stains, Stucco Stains, Old Virginia White, Double-White, etc.



One tenth of one percent makes all the difference

Have you received our helpful booklet on complete wiring, "The Home of a Hundred Comforts"? Send for a copy.

Section AB-9
Merchandise Division
General Electric Company
Bridgeport, Connecticut

No longer do people think that an electrical installation is merely a matter of price. G-E advertising has taught them that it is a matter for careful planning. Therefore, when you build a wiring system into the walls of a house, it is important that you put in *quality*.

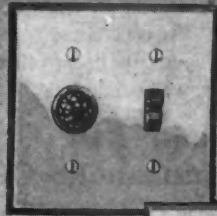
Using General Electric wiring materials throughout may cost a little more, but it cannot add one tenth of one percent to the cost of a house. Yet that one tenth of one percent makes all the difference in comfort, in safety, and in ultimate economy. The few extra dollars of initial outlay often mean many dollars made in selling a house faster. People now know the "G-E Wiring System", just as they know the best in furnaces and in plumbing. It is a very effective selling point for a house.



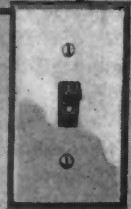
WIRING SYSTEM

—for lifetime service

In a G-E Wiring System these materials mean convenience—and lifetime service.



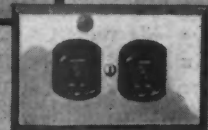
G-E Tumbler Switch with pilot to show that the current is on.



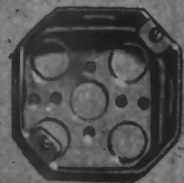
G-E Tumbler Switch—a flip of the finger works it.



G-E Convenience Outlets sturdy for service. Plenty of outlets mean real convenience.



G-E Outlet Boxes mean protection inside your walls.



G-E Conduit and Code Wire serve unshakably in big buildings.



G-E BX Cable is the Reliable armored wire for permanent.



GENERAL ELECTRIC

Dealers Visit Steel Plant

MEMBERS of the Altoona (Pennsylvania) Builders Supply Dealers' Association made a very interesting motor trip to Warren, Ohio, June 29th, to visit the Youngstown Pressed Steel Company's factory. Most of the time was spent in going through the plant, although entertainment was included. ✱

Chain Belt Opens Minneapolis Office

THE Chain Belt Company of Milwaukee has announced the opening of a sales office in Minneapolis, Fred S. Van Bergen to be in charge. The office is located at 614 Builders Exchange Building.

This office will handle all of the Chain Belt Company's chain and engineering lines, marketed under the trade name, "Rex," including all types of transmission and conveying chains, sprocket wheels, elevator buckets, transmission machinery, and elevating and conveying machinery.

The Chain Belt Company will also be the Minneapolis distributor for the products of the W. A. Jones Foundry & Machine Company, Chicago, the variable speed transmissions of the Reeves Pulley Company, Columbus, Ind., and belting manufactured by the Victor Balata & Textile Belting Company of Chicago.

The territory covered by the Minneapolis Office includes

the states of Minnesota, North Dakota, South Dakota and parts of Iowa and Wisconsin. Mr. Van Bergen, in charge of the office, was formerly general manager of the Power Equipment Company, Minneapolis.

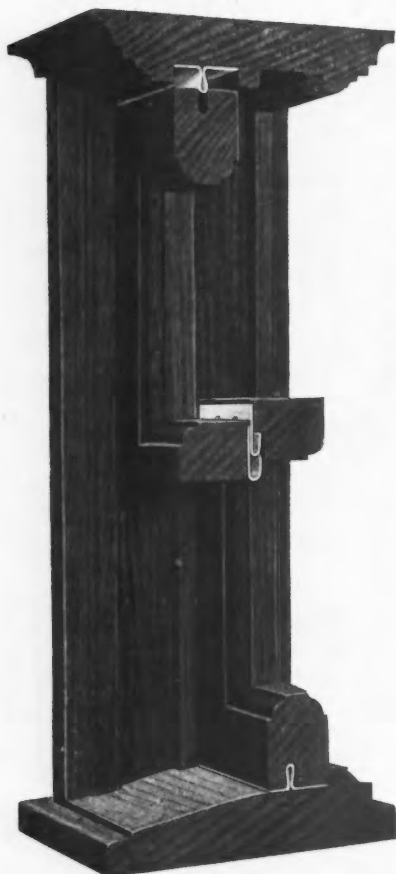
Rex Concrete Mixers and Pavers will continue to be stocked and distributed by the Wm. H. Ziegler Company of Minneapolis, which has been the exclusive mixer representatives of the Chain Belt Company for the last three or four years. ✱



Members of the Altoona Builders Supply Dealers' Association at the Youngstown Pressed Steel Co. factory. Left to right, top row: Lee Harter, Parke Bachman, A. L. Collins, Harry Hartley, Orwell Deibert, M. S. Allen. Lower row: Irwin Forsht, W. H. Copp, C. W. Forsht, E. K. Yeager.

Brass Company Appoints Agent

THE Bridgeport Brass Company, Bridgeport, Conn., has appointed the E. F. Keating Company, 452 Water Street, New York City, to handle the sale of Plumrite brass pipe in the metropolitan district. The Keating company has a large sales force covering New York City, Long Island, northern New Jersey and all of New York State. It has a plant at Hartford for the fabrication of piping and tubing of iron, steel, brass and copper. This new company is known as the E. F. Keating Pipe Bending & Supply Company. As this company manufactures and sells coils, bends, heaters and pipe pressure power plant piping, hot water service heaters and many other things along this line, the Bridgeport Brass Company feels that it is fortunate in securing it as agent.



ALLMETAL WEATHERSTRIP

THERE IS A GOOD REASON

why any contractor, carpenter or mechanic should be interested in this work.

HOME OWNERS AND HOME BUYERS WANT IT therefore, you are assured of plenty of work and an opportunity to establish a profitable business of your own.

AGENTS WANTED NOW to represent us in their locality.

Our service is prompt as all orders are filled and shipped within 24 hrs. after being received.

ALLMETAL WEATHERSTRIP CO.
231 W. Illinois St., Chicago, Ill.

GENTLEMEN:—

Without obligation, please send me samples and literature.

NAME.....

ADDRESS.....

CITY.....STATE.....



Instinct tells him what *Science* tells you

Perhaps the man who uses a scrap of wood as a cushion between his feet and a concrete floor would simply tell you that it gives him "the miseries" to stand on that hard, cold floor.

Science would tell you more. It would present figures gathered by great business firms, showing that men who stand on concrete do less work in a day—take off more time on account of sickness, and change jobs oftener.

Science can also tell you more about the advantage of laying a Maple floor over concrete. Maple polishes, where stone pulverizes, from wear. Tough-fibred, tight-grained Maple becomes smoother and smoother under the traffic of feet and trucks, while stone-like floors give off a fine dust which may feel like flour to your fingers, but in the bearings of machines it cuts like diamonds.

Floor with Maple in your factories and industrial buildings, and you protect both your men and your machines. Floor with Maple in stores, offices, public buildings, schools—and all the places where people stand, or work, or walk. For longer service, a smoother surface, and greater human comfort, experience proves that maple is the floor to use.

In the Tribune Tower, Maple has been chosen as the flooring for the press rooms. Anyone who knows the rush and turmoil with which each new day's issue of a great newspaper is published, knows that the floor which must withstand this usage meets a hard test of service and contributes to human efficiency, keyed to the highest pitch.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1055 Stock Exchange Building, Chicago

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to

manufacturing and grading rules which economically conserve every particle of these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you buy.

MFMA



Floor with Maple

Beech or Birch

Approve Lumber Standards

AT a recent meeting of the West Coast Lumbermen's Association it was arranged to put the practice of American Lumber Standards into effect. A resolution was unanimously adopted approving these standards with four minor exceptions, the sizes of finish, drop siding and rustic and designs and sizes of mouldings, the provisions for which increase waste in west coast manufacturing practice.

This resolution also provided for a committee to promote the general observance of the American lumber standards in the west coast lumber industry and to secure written pledges from individual manufacturers to guarantee general observance not later than November 1, 1925.



Appoint Sales Promotion Manager

JOHAN J. GUERIN, one of the best-posted men in the stove industry, who has been associated with the Michigan Stove Company for twenty-three years, has been made sales promotion manager for this organization.

Mr. Guerin's new duties will be to work more intimately in sales development with the ever-increasing number of Garland dealers throughout the country. He has had thorough training in both stove manufacturing and merchandising, and is giving up the position of chief of the purchasing department of this company to assume his new duties.



Grout Joins Bridgeport Brass Co.

L. W. GROUT, formerly vice-president and sales manager of the Keating Valve Company, Springfield, Mass., for the past three years, has joined the sales organization of the Bridgeport Brass Company, Bridgeport,

Conn., to take charge of the sale of Bridgeport-Keating flush valves which are now being manufactured by the latter company.



Introduces New Interior Paint

THE Sherwin-Williams Company has put on the market a new interior paint known as semi-lustre which possesses the hard-drying and washable qualities of an enamel, yet brushes out and works like an oil paint. It dries with a half-enamel gloss. Its manufacturers believe it meets the increasing demand for a paint of this character for interior plastered walls and woodwork where a flat wall finish is not desired. It is being made up in ten colors in addition to white.



Tri-State Association Organized

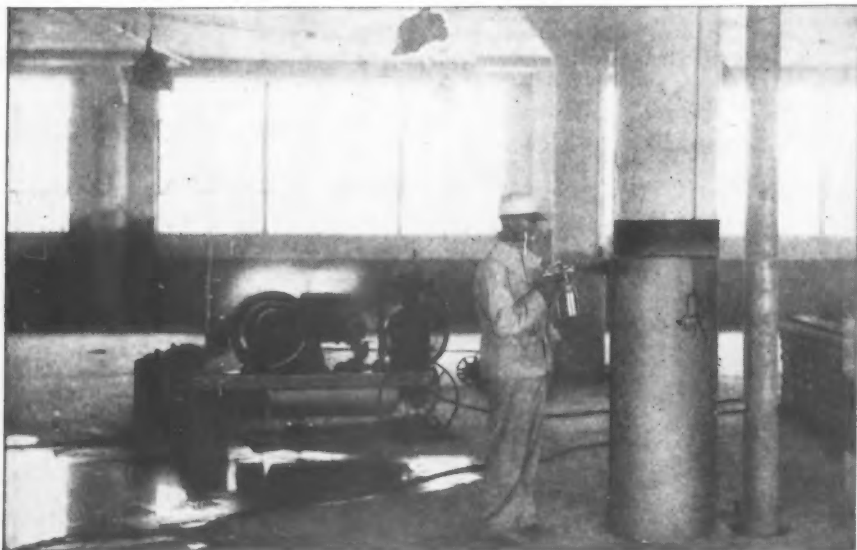
COMPLETION of the organization of the Tri-State Sawmill Managers' Association, comprising managers and superintendents of sawmills in northern Louisiana and Texas and Southern Arkansas, was effected at the regular monthly meeting of the association recently held in Shreveport, La. E. M. Decker, of Farmerville, La., presided at the session, which was attended by about a score of members and visitors.



Obtains Big Contract

THE American Sawmill Machinery Co., Hackettstown, N. J., has been awarded the contract for a number of woodworking machines for the University of North Carolina at Chapel Hill, N. C., consisting of power feed rip saw, planer and matcher, tenoning machine, hollow chisel mortiser, jointer, shaper, boring machine and lathe, including motor equipment for each machine.

You Paint to Make Money— Painting the DeVilbiss Way Will Increase Your Earnings



[Painting the dado—here the operator is using the DeVilbiss spray gun with Type I K N Pressure Feed Cup attached, which is advantageous on many kinds of work]

DeVilbiss
Spray-painting System

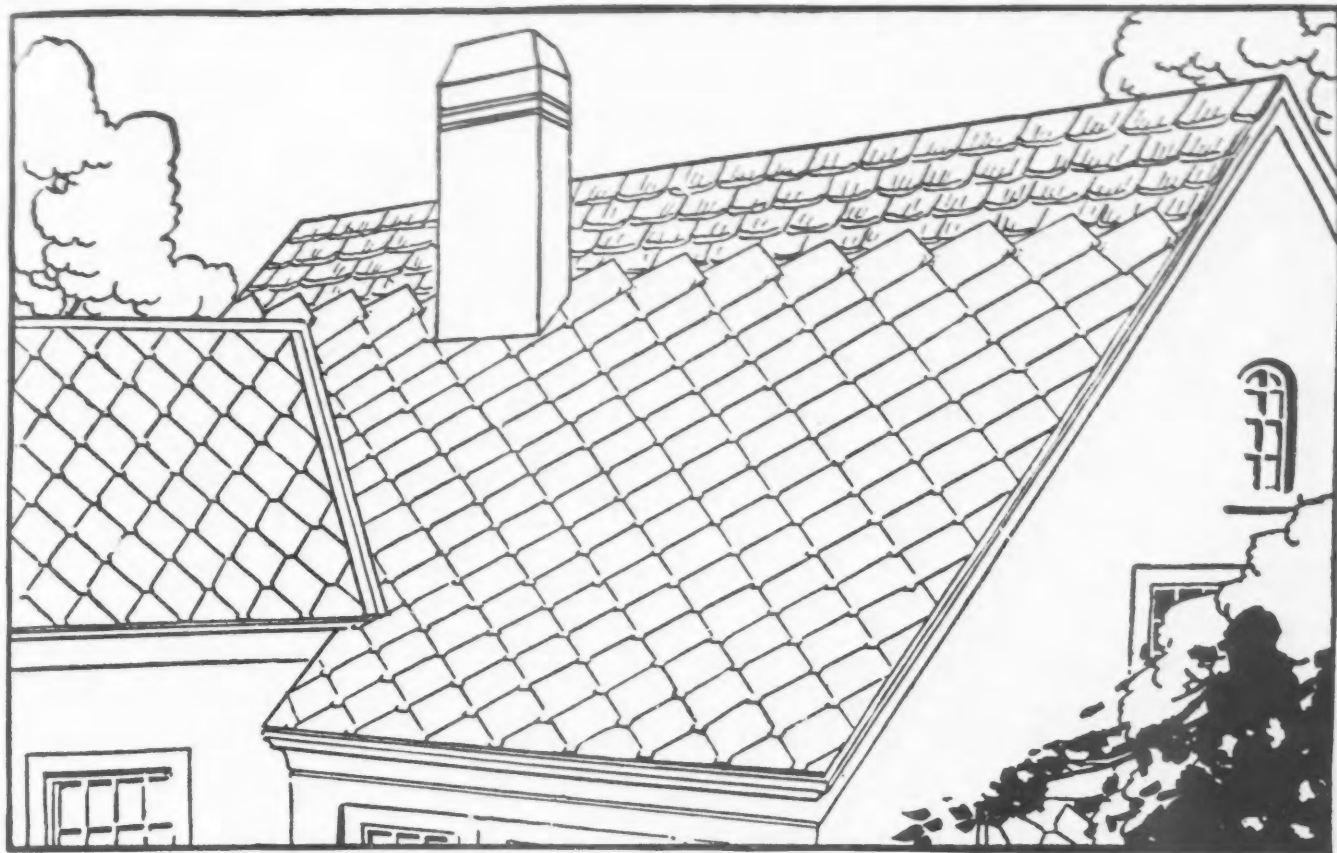
Doing at least two painting jobs in the present working time of one; doubling your profits, or better; improving your service; taking prompter and better care of your customers—these are some of the greater money-making advantages of painting with the DeVilbiss Spray-painting System.

In addition, painting the DeVilbiss way gives to your work the stamp of progressiveness and makes for a more satisfied crew of painters.

The speed of DeVilbiss spray-painting averages 4 to 5 times faster than hand-brushing. The spray-applied coating completely covers the surface, and is even and uniform regardless of character of surface painted and kind of paint used. The best possible results are produced with the DeVilbiss spray gun at the lowest practicable air pressure and without drips and spatters.

Here is opportunity for making a worthwhile increase in your earnings. Additional operation and equipment details of the DeVilbiss System will be promptly mailed to you. Address—

THE DEVILBISS MFG. CO.
238 Phillips Ave. TOLEDO, OHIO



They Turn Time Into Profits

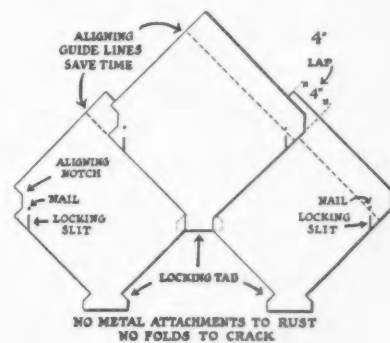
WHEN you do a re-roofing job with Ruberoid Re-roofers, you finish it in record-breaking time, because—

- 1—You lay them over the old wood shingles and save the time and trouble of removing the old roof.
- 2—Ruberoid Re-roofers are the fastest laying shingles on the market.
- 3—You use only 56 shingles and drive only 112 nails to cover 100 square feet.
- 4—The shingles are self-aligning. They interlock easily—no metal attachment to slow up the work.

The finished roof is one of the highest quality—Ruberoid quality—the kind that has lasted twenty, twenty-five, and thirty years and is still giving excellent service. It's a roof you will be proud of and one that will boost your business.

Double locking tabs prevent Ruberoid Re-roofers from curling or lifting with the wind. They are surfaced with sage-green, tile-red, and steel-blue genuine slate.

If you want to know more about these profitable Re-roofers, drop us a line. We will send you samples and instructions for laying. The coupon is for your convenience.



*There is but one Ruberoid.
Look for the Man on the Label.*

**The RUBEROID Co., Dept. 1
95 Madison Ave., New York.**

Gentlemen: Please send me samples of Ruberoid Re-roofers and instructions for laying.

Name

Address

RUBEROID

SHINGLES AND ROOFING

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Buffalo Gas Radiator Corporation, North Tonawanda, N. Y., has issued a small pamphlet completely illustrating and describing its gas fuel steam radiators with automatic operation.

The Upson Company, Lockport, N. Y., has published a booklet summarizing the opinions of lumber associations and retail lumbermen on the recently inaugurated Upson partial payment plan.

The Lincoln Electric Company, Cleveland, Ohio, offers a new catalog of Lincoln "Stable-Arc" welders with a partial listing of the industries in which they are used.

"The Handwriting on the Wall" is a bulletin issued by The Celotex Company, 645 N. Michigan Ave., Chicago, Ill., describing Celotex as the modern wall insulation.

"Frigidaire—Electric Refrigeration for the Home" is a 16-page booklet issued by the Delco-Light Company, Dayton, Ohio, describing the cooling coils which can be installed in any ice box now used in a home.

The Bovee Furnace Works, Waterloo, Iowa, has issued a new catalog of the furnaces and fittings which it manufactures.

The Warner Elevator Mfg. Co., Cincinnati, Ohio, has issued a new bulletin, F-18, describing its new electric dumb waiter.

The Hydrex Asphalt Products Corporation, 120 Liberty Street, New York City, offers three technical bulletins in form for filing. These are "Dampproofing Wall," "Sheathing and Insulating Paper," and "Sound Deadening and Insulation."

The Columbia Metal Box Co., 226 E. 144th St., New York

City, has issued a descriptive circular of its mail boxes designed to meet the new requirements of the Post Office Department.

The Herwig Company, Chicago, Ill., now offers a most attractive new catalog covering its line of ornamental, cast metal, outdoor, lighting fixtures.

Toch Brothers, 320 Fifth Ave., New York City, offer a series of circulars and booklets completely covering all phases of their colored integral hardener for concrete and its various applications.

"Carpenter's Practical Aid" is a pocket size handbook of valuable working information for carpenters and apprentices written and published by P. Ligthvoet, 519 Woodward Avenue, Kalamazoo, Mich. It is based on twenty years of practical experience. Price 50 cents.

The National Radiator Company, Johnstown, Pa., has prepared a new catalog, No. 35, of its line of boilers and radiators and two pamphlets describing these products and featuring its legless radiators.

The National Brass Company, Grand Rapids, Mich., has issued two new catalogs. One is devoted to its Dexter tubular locks and latches while the other covers new additions to its line of builders' hardware.

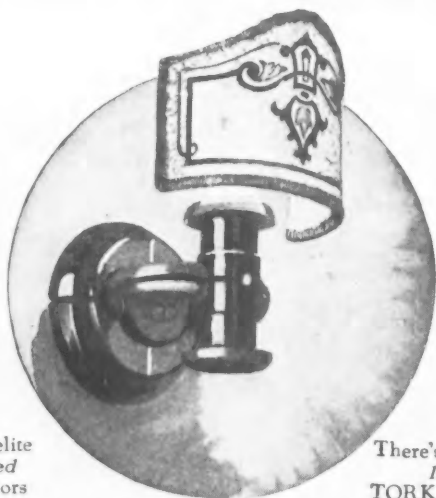
The Hart & Hutchinson Co., New Britain, Conn., has just issued a new catalog F, which is prepared for filing under the A. I. A. system and which covers this company's line of steel lockers, cabinets and partitions in an attractive manner.



Changes in Personnel

AN announcement has been received from the Consolidated Expanded Metal Companies, Braddock, Pa., that H. E. Hollingsworth has been named to succeed to the position of New York branch manager, formerly held by Thos. R. Herbst, Jr., who has assumed the duties of vice-president and director of sales at the home office.

Untarnishable



All Bakelite
moulded
in 6 colors

There's nothing
like
TORK LIGHTS

A Finer Electric Bracket and a
Better Service Outlet in one.

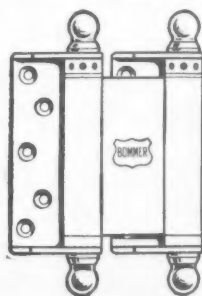
TORK LIGHTS are not only a *new economy* but
the finest finishing touch for any wired home.

TORK LIGHTS

Ebony—Flame Orange—Pottery Green—Old Mahogany—Fine Bronze—Ambergold

TORK COMPANY, 8 West 40th St., New York

TORK CLOCKS TORK TIMERS TORK LIGHTS WIRE-NUTS



**Buy the Best
HARDWARE
For Hard-wear**

For more than 48 years Bommer Spring Hinges have maintained their leadership and proven their superiority over all others.

They have kept pace with the times, because they have been kept up with the times whenever improvement was possible.

BOMMER SPRING HINGES ARE THE BEST

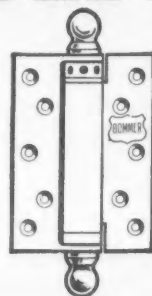
They are in universal demand—
easiest to apply and the most satisfactory spring hinges made.

Your Dealer handles them.

Send for New Catalog 47. It is a big help in ordering.

Bommer Spring Hinge Company

MANUFACTURERS
BROOKLYN, N. Y.



SOLID CONCRETE WALL
CONTINUOUS SEALED AIR SPACE
SOLID CONCRETE WALL

Boiling it Down

The Van Guilder System means—

STRENGTH proven by the earthquake test.
SIMPLICITY—Experienced laborers unnecessary.
ECONOMY—The only successful method of laying up a concrete wall without forms.
MERIT—The continuous air space unbroken by any masonry means a building that is warmer in the winter, cooler in the summer, and damp-proof, thereby eliminating the only objection to a concrete wall.

Mr. Builder, your clients want the best value that they can get for their money. **Give them this earthquake tested wall** at a cost less than any other system of construction.

Write for your copy of our new pamphlet "What Lesson Did The Santa Barbara Earthquake Teach You?" Benefit by experiences in one of the greatest disasters this country has ever had.

VAN GUILDER SYSTEM CONCRETE BUILDING, Inc.
 15 East 40th Street NEW YORK

SOLID CONCRETE WALL
CONTINUOUS SEALED AIR SPACE
SOLID CONCRETE WALL

Zinclad Nails Make PERMANENT ROOFS

The home owner has a right to expect a perfect roof. That's why you should use Zinclad Nails on the roof. We manufacture Zinclad Nails for Asphalt Shingles, Asbestos Shingles, Cement Shingles, Metal Shingles, Slate Roofing, Tile Roofing, Felt Roofing, Canvas Roofing and Zinc Roofing. Zinclad Nails are sold by leading dealers everywhere.

Our booklet "The Point" tells why Zinclad Nails prolong the life of the roof. We will send you the booklet and sample Zinclad Nails **FREE** in return for coupon below.

Send coupon today for Booklet and sample nails.

W. H. MAZE COMPANY
 Peru, Illinois

SEND THIS COUPON

W. H. MAZE CO.,
 Peru, Illinois

Gentlemen: Please send me your Booklet "The Point" along with sample Zinclad Nails.

Name

Street

City..... State.....

*The
Point*



LEADERSHIP *in*

**Production of Rapidly Selling
Block and Tile**

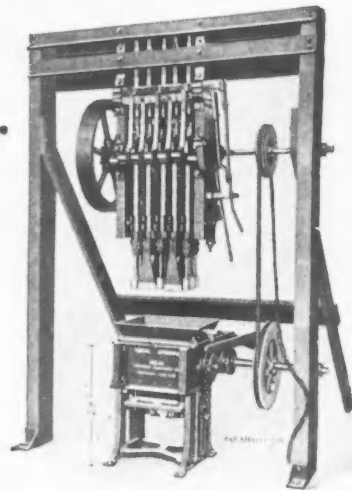
easily and quickly attained with the

Ideal Vertical Stripper

Quality tells. So does service. And with this really wonderful machine you can furnish both, and corral the lion's share of Block and Tile business of your community.

The Vertical Stripper has low, convenient offbearing height and is the most flexible stripper—making two logical reasons why this machine should be building up your business.

***Get your share of the big fall business;
start the ball rolling by writing for
details.***




If you can't afford to take chances, ask us to tell you all about the

Ideal Power Roll-Over Stripper

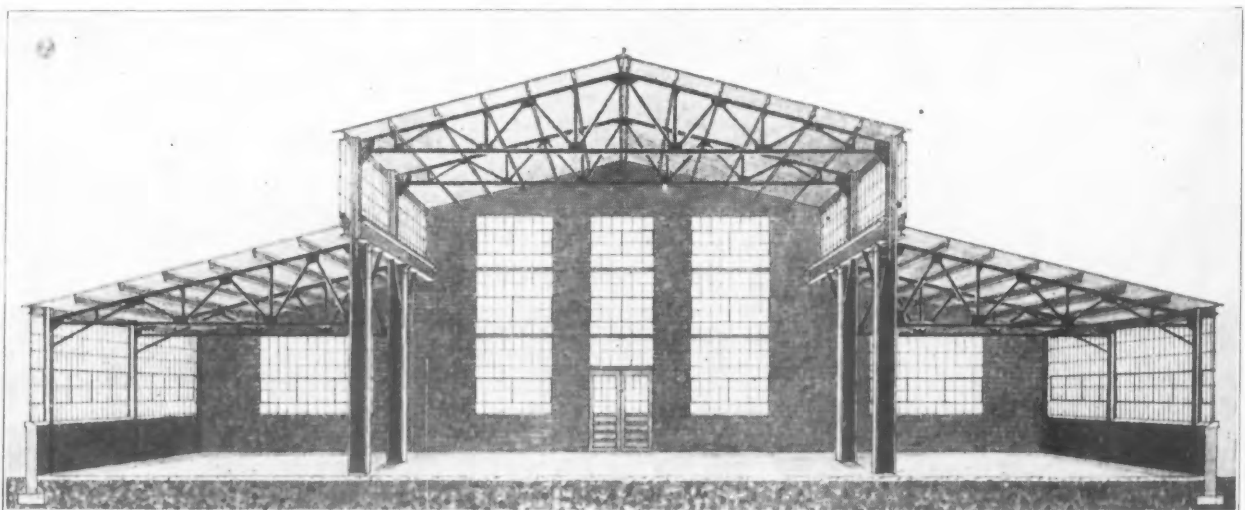
IDEAL

THE IDEAL CONCRETE MACHINERY CO.
5014 SPRING GROVE AVE. CINCINNATI, OHIO

TRADE MARK  REG. U.S. PAT. OFF.

Steel Designs Win!

Our Steel Designs for Factories, Garages and Store Buildings have clinched the contract for many a progressive Builder.



Let us help you on the road to real success. Designs, Estimates Free

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**Revolutionizes
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**Uses about 1 Gallon of Water
to 1 Gallon of Oil**

**Generates and Burns
Carbureted
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The average temperature of a coal fire ranges from 1100 degrees F to 1300 degrees F. Tests made with GREGORY HEAT by independent engineers over a period of hours record an average of 2269 degrees in the flame, while the average temperatures showed only 580 degrees F.

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Gregory Heat has no motors or machinery of any kind. Its action is chemical; feeds water, oil and air in a natural way; allows no odors to escape; is thermostatically controlled; entirely automatic and positive in its action; has a capacity up to 2000 feet of hot water radiation.

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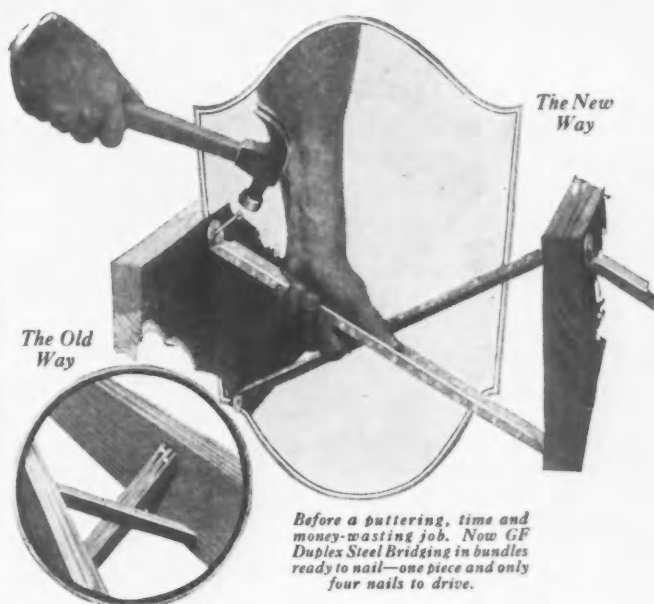
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F. O. B. Chicago. Price covers installation in any type of heating plant—old or new. Tanks extra.

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GF Duplex Steel Bridging has definitely taken the place of wood. It is lighter—more rigid—made in one piece—cannot warp or split—occupies less space.

With all these advantages it costs less money installed than wood. It can be put up in one-eighth the time. A twist of the wrist and the driving of four nails and the job is done.

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**GF Duplex
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Name

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You Can't Do This By Hand!

Foley Files a Saw Perfectly in 5 Minutes

The Foley Automatic Saw Filer makes hand filing a thing of the past. Here's what S. J. Bottomley of Norwich, Conn., says about this wonderful machine: "I have filed saws for 40 years but the Foley Filer has me beat, both as to better work and speed. I am very highly pleased with my Foley Saw Tools as they sure do the work fine."

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"You certainly told me the facts about your saw tools which do the work much better than can be done by hand, and also 10 times faster."

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"I have filed 1600 saws with your Foley Saw Filer and am busy from morning to night, owing to the reputation for doing the best work that I have made with your tools."

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Saves Money—Saws—Eyes

You simply clamp a saw in the machine, turn the crank or let the motor turn it, and in 5 minutes you have a perfectly sharpened saw. The Foley Saw Filer works **automatically** with a speed and accuracy that cannot possibly be duplicated by hand. Teeth do not vary 1/1000th of an inch. Handles hand, band, back, meat or circular saws—even retoothes saws that have been abused by poor filing. It's a money maker, a time saver, and eliminates eye strain.

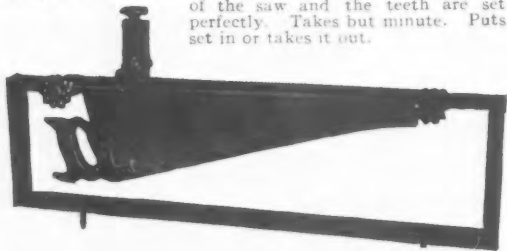
Model F-3 Hand Driven

Foley Hand Drive Outfit; ideal for small contractors, builders and professional filers. For hand, band, back and meat saws. Circular saw attachment extra.



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One pull of the FOLEY ROTARY SAW SET the length of the saw and the teeth are set perfectly. Takes but minute. Puts set in or takes it out.



Easy to Operate

No experience necessary. Takes just a little practice to be an expert filer. Hundreds of men are using the Foley Filer—we'll send you some names in your own state.

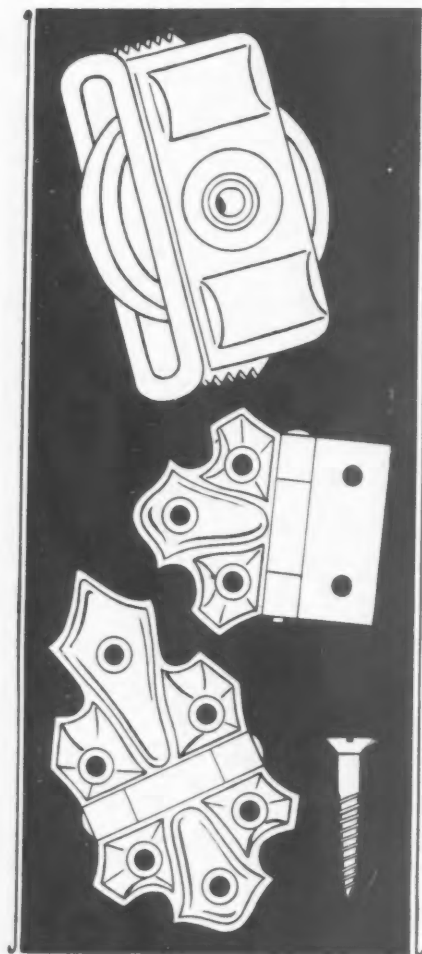
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FOLEY SAW TOOL COMPANY

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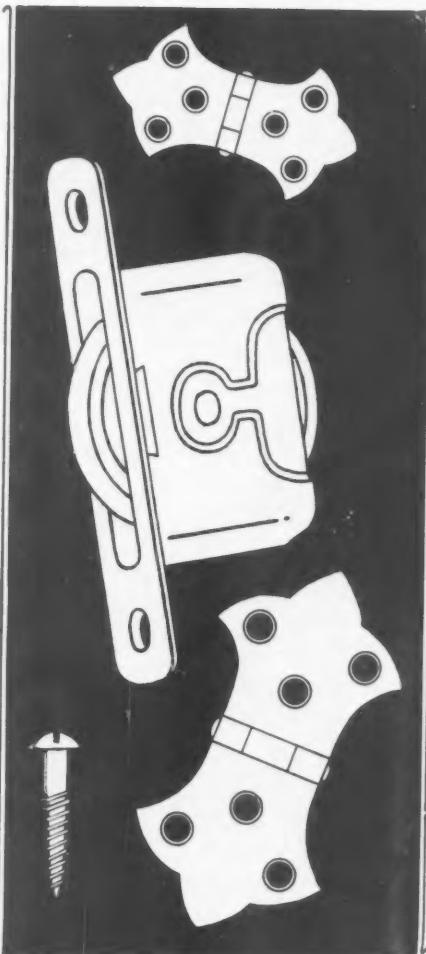
YOU gain in four ways when you use Rockford Sash Pulleys. 1. They're correctly designed—run true and operate with perfect smoothness. 2. They're durably made—will give long-lasting good service. 3. They're superior in finish, and thoroughly coated with rust-resisting material. 4. Advantageous delivery from our centrally located factory.

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THE closer a man is to the job, the more he appreciates the special merits of Bostwick "Truss-Loop" Metal Lath.

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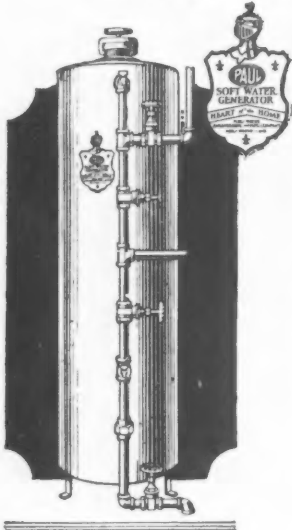
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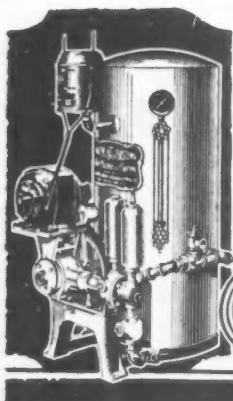
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The new
PARKS
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No. 7
\$250.

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Contractors wanted it! Parks built it!

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Motor is where it belongs, out of the way.

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Bovee's Compound Radiator Furnace Cased for Regular Piping

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Note the large ash pit with independent shaking grates. A Clean Heating Surface from top of ash pit to smoke collar. A direct heating surface always clean from soot.

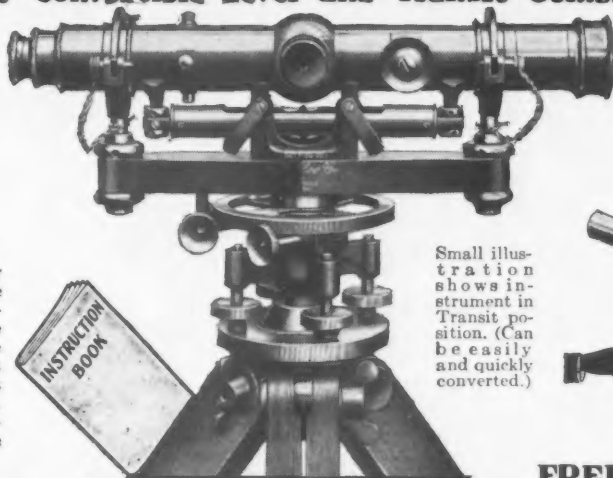
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Aloe Convertible Level and Transit Combined



Small illustration shows instrument in Transit position. (Can be easily and quickly converted.)

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- ☐ BROOM CLOSET, to set in any kitchen ☐ to be built into wall ☐.
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An important factor in the modern apartment—used with great success the country over.

Our architectural staff will draw plans for your building, showing its uses and space-saving, room-adding features.

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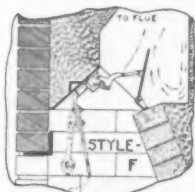


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MAKES the formation of the throat of the fireplace easy and right. The throat is a vital part. You can't go wrong with a Colonial Head.

This is the only damper made that takes up heat expansion and thus avoids the cracking of the fireplace front. Gives perfect draft control and avoids smoking. With the Colonial Head and our FREE fireplace plans you can be sure that every fireplace you build will give satisfaction and reflect credit on your workmanship.

We supply complete fireplaces in all-brick or in Colonial wood mantle design. Also everything for the fireplace: ash traps, ash pit doors, andirons, fire sets, fenders, grates, hoods, screens, etc.



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For all classes of concrete work and in Portland Cement mortar, use Solvay Calcium Chloride to save time, labor and money.

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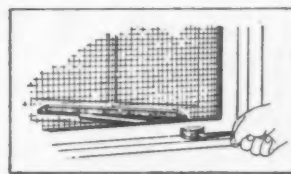
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*—without
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New Standard Type—one of a variety of styles and finishes. Handles furnished detached or permanent.



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It doesn't take a long time to find out—sometimes as soon as two years or even less. The house pictured above was built only two years ago and is now being reroofed with Slate. Is this not enough evidence that slate is the most economical of all roofing materials.



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WILLIS

Metal Windows



IN THE NEW KENTUCKY HOTEL LOUISVILLE, KY.

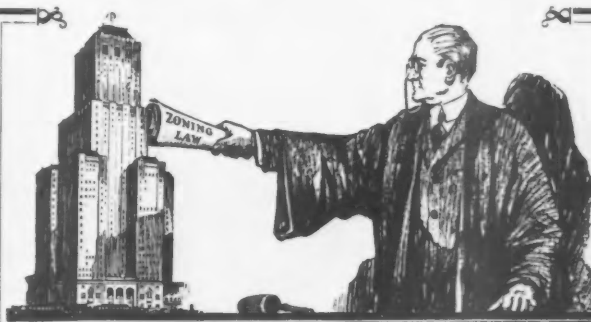
It is a significant fact that those responsible for the material that went into the building of this new handsome structure chose Willis Metal Windows. They demanded windows which were uniform and easily as well as quickly installed so they picked the "Willis."

WILLIS METAL WINDOWS

Never sag, work perfectly always in all kinds of weather. Priced so low that builders never hesitate. They're better than others and cheaper than most.

Write for catalog and prices.

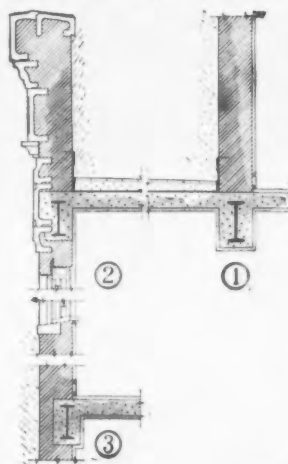
WILLIS MANUFACTURING CO.
GALESBURG, ILL.



A New waterproofing problem solved

THE passage of zoning laws necessitating set-backs in the erection of tall buildings, automatically created new waterproofing and damp-proofing problems. These set-backs are potential sources of interior damage unless adequately protected against the entrance of moisture.

Section I of the accompanying drawing illustrates a wall set back from the building line. Note the unprotected fire-proof beam, the abutting concrete floor, and roof slabs of cinder concrete which are too porous to prevent the entrance of water into the building.



The weak point is in the mortar, for ordinary mortar contains countless pores which permit the absorption of water and moisture. The remedy is to lay up the brick in cement mortar not subject to capillary attraction.

These desirable properties can be readily and economically obtained through the use of "R. I. W." Toxement Mortar Paste*.



Toxement Mortar Paste*

For the integral waterproofing of cement mortar and stucco. For cement mortar troweled on the outside of brick or rubble foundations.

Consult SWEET'S catalog for specifications. The Tox Specification Book gives valuable information relative to this new waterproofing problem. For your copy address Dept. B.

Tox Brothers
INCORPORATED
Technical and Scientific Paint and Varnish Makers
Since 1848
410 EAST 42nd STREET, NEW YORK, N. Y.
Opposite Grand Central Terminal
Works: Long Island City, N. Y.

*Patented



The Gabriel glass door type showing door in open position with hopper attached.

Know "GABRIELS" by Comparison

This Coal Chute Pleases Both Builder and Owner

As a builder you are interested in securing materials that are easy to use, that satisfy your customer, that are substantial and make your property more salable. There is no better way to advertise the quality of the homes you build than by the use of a Gabriel Chute.

The Gabriel Rolled Steel Coal Chute is attractive in appearance, is wind and weather proof and is guaranteed to be unbreakable. It has the special chain release which permits automatic opening of the door without descent to the basement—a feature that immediately appeals to the housewife.

Full details will be sent on return of the Coupon.

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BELLEVUE AVENUE - DETROIT, MICH.

GABRIEL

ROLLED STEEL
PRODUCTS

GABRIEL STEEL COMPANY
Bellevue Ave., Detroit, Mich.

Send me full detail and prices on Gabriel Rolled Steel Coal Chutes.

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Address _____

A. B. 9-25



Residence of Murray Springer, Esq., Longwood Drive, Chicago, Ill.
All "Tidewater" Cypress—foundation sills, siding, porches, trim and shingled roof.

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for the builder—greater satisfaction and economy for the buyer (and its resulting goodwill for the builder), are a few of the many *real values* in "Tidewater" Cypress construction.

Fortified with a natural preservative against the rot-producing agencies of humidity, bacteria, fungus growths and moisture, "Tidewater" Cypress is the best material for all parts exposed to the weather or in contact with the soil—*foundation sills, siding, shingles, porches (supports, floors, steps, rails and columns), cornices, sash, frames, doors, and all exterior trim.*

For interior economy, beauty and durability, "Tidewater" Cypress is an ideal trimwood in natural finish, under stain or enamel. Easy to work.

It pays to know all the advantages of "Tidewater" CYPRESS in carpentry work of every kind. WRITE TODAY for descriptive literature (also on Tupelo, the hard-wear flooring.)—IT'S FREE. Correspondence invited regarding special problems.

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The Arrow identifies the genuine "Tidewater" CYPRESS



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The WOLVERINE F-3 is one of the most popular all around general purpose barrows made and adapted for all high grade construction work. Used by leading contractors everywhere and built by America's oldest and largest manufacturers of wheel barrows.

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For Permanent Beauty

Contrasting greens and blues and gray emphasize the whiteness and permanent beauty of the home stuccoed with Pyramid Stucco.

Architects and Builders, by specifying Pyramid Stucco you insure your good name and assure your client walls that will remain permanently white and permanently dry. Dampness can never penetrate this stucco. Pyramid Stucco, when properly applied, becomes extremely hard. It has remarkable strength—strains that crack ordinary stucco will not develop a hair line crack in Pyramid Stucco. Expansion and contraction will not crack Pyramid because of its remarkable elasticity, due to its high magnesite content. Our guarantee covers your job.

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PYRAMID COMPANY,
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An Electric Grate That Really Heats



The "Glo-Hot" No Flue Necessary

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Approved by Board of Underwriters

GIVES real fire effect and heats at the same time. Absolutely odorless and clean. At the first snap of the switch the grate is flooded with a life-like flicker of glowing coals. At the second snap of the switch the heat flows out from the concealed "Glo-bar" unit under the hood. The scientifically designed copper reflector throws all the heat rays straight into the room.

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Also manufacturers of the Colonial Head Throat and Damper—Complete fireplaces, fireplace furnishings such as grates, screens, hoods, etc.

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A few valuable territories
are open to progressive
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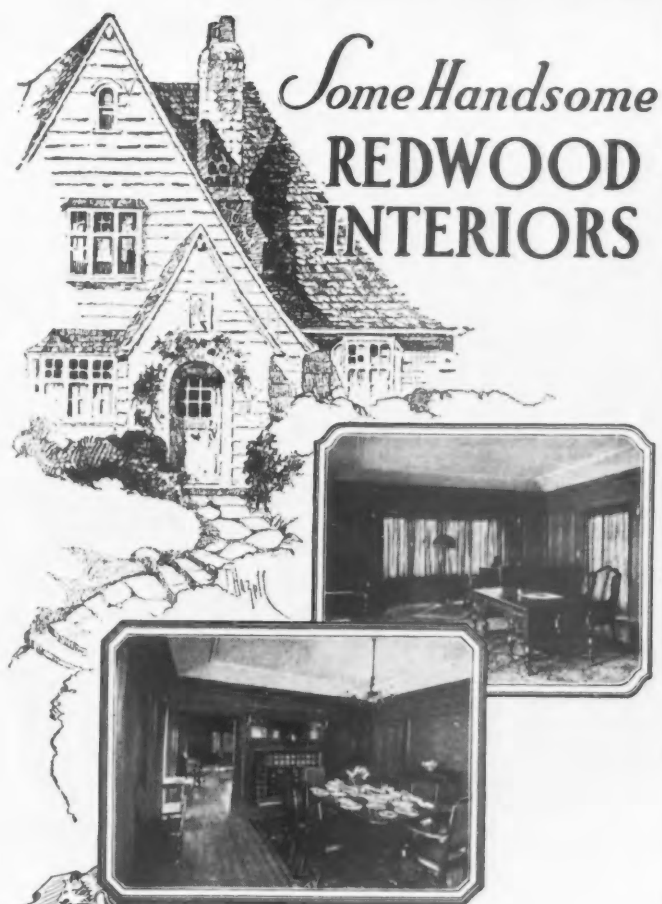
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Some Handsome REDWOOD INTERIORS

REDWOOD is primarily the wood for everlasting exteriors. Permeated with a natural preservative during growth, it is immune to all forms of decay—is the most economical and most satisfactory lumber and millwork for the outside of frame houses.

No wood outlasts Redwood for clapboards, siding, shingles and cornices, for porch posts, railings, balusters and finish, for sills and foundation timbers, for window and door frames, pergolas, summer houses, garden furniture and greenhouses. Redwood shingles have given forty years of service and remained sound and strong.

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FOR EVERY REQUIREMENT



The New
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\$85



The Dayton "Cub" is an outstanding value at its low price of \$85.00. It is recommended where source of supply is not more than 22 feet (vertical) below pump, and a supply up to 200 gallons per hour is needed. It occupies little space and like other DAYTON models is covered by a written guarantee.

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BUILDERS and architects who now invariably specify DAYTON Automatic Water Supply Systems for any running water requirement have not depended upon reputation alone to establish DAYTON supremacy. Comparison of mechanical features has many times settled the matter of superior performance and dependable operation.

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**The Dayton Pump
& Mfg. Co.**

Dayton, Ohio, U. S. A.



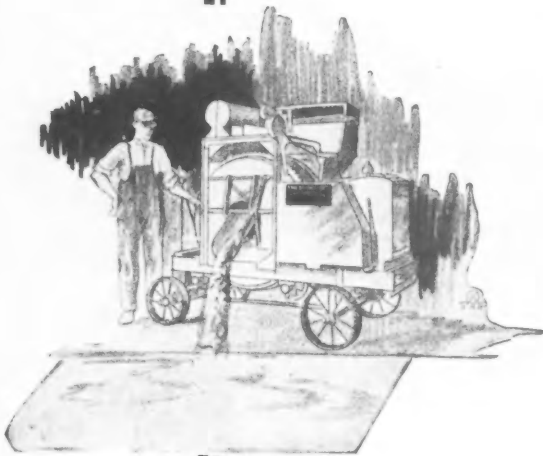
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"Dayton" Pumps
Make the water do the running

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More and Better Concrete Per Hour

can absolutely be had by the use of

"THE" STANDARD MIXERS

1st—the charging scoop is wider and steeper, the load is dumped in place faster.

2nd—it is dumped in one concentrated pile in the drum—not all over a wide bottom, consequently the operation of bringing it into a pile is eliminated, more time gained.

3rd—as the drum is larger in diameter it mixes more thoroughly and quicker.

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There is a great saving in every operation. Besides the low and power charger are interchangeable.

The controls are centralized where operator can see the mixing and control at same time.

The chassis is firm—non-tipping.

The front wheels turn very short.

It will go anywhere.

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The DE WALT WONDER-WORKER BUILDERS and MILL Owners

It is fascinating to watch this machine work.

Every cut precise and quickly made.

A 16 foot STAIR STRINGER routed accurately in 20 minutes. Cross cuts and rips almost as smooth as a planed finish.

A DE WALT WOODWORKER will do practically all the special Mill class of work right on your job rapidly and satisfactorily.

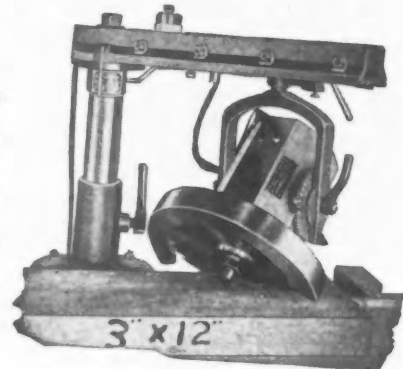
Built in four sizes.

Two men can easily carry the machine from floor to floor. No legs to make it harder.

Think of it! This De WALT WOODWORKER will cut 20 different kinds of cuts in one hour and every cut as fine as you have ever seen it done. This time includes machine changes and cutting. Can you beat it?

Any Carpenter or Mill-hand can work it. No expert required.

Think of the saving of TIME on Your Jobs. Money saved.



2 H. P. Mitering and Beveling
in one operation

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March 24, 1925.

De Walt Products Company
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Gentlemen:

We have had a De Walt Woodworker in our shop for the past year. We use it for housing stairs, for cross cutting, all sorts of bevel cuts, and we have witnessed no trouble with it to date.

We certainly think a great deal of this saw and we would not be without it.

Very truly yours,

EVANS CONSTRUCTION COMPANY
Thomas R. Evans
President.

TREK

De Walt Products Company
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Machine accurate and good for a lifetime.

Mailing Coupon

De Walt Products Company,
Leola, Lancaster County, Pa.

A. B.

Gentlemen: Without obligating myself, please send me Catalogue, full particulars and prices of the De Walt WOODWORKER.

Name

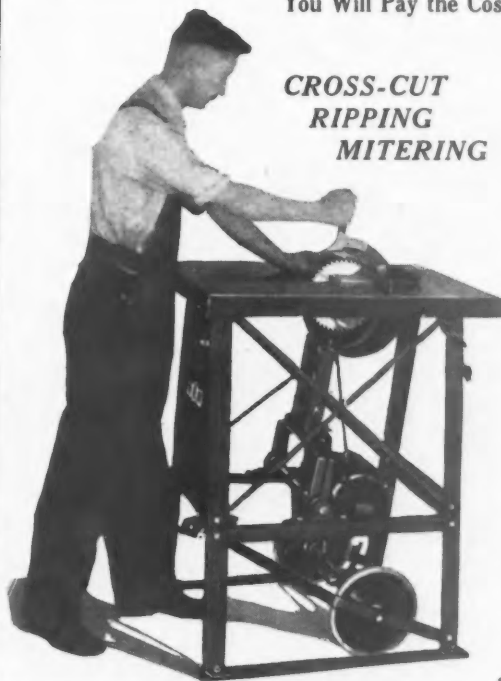
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You Can Use This Saw Anywhere Take It Right To The Job

One of the big advantages of the Onan "Safty Saw" is that you can take it anywhere. Just plug in on the lighting circuit and the saw is ready for immediate use. No delays. **No Installation charges are necessary.**

You Will Pay the Cost on a Single Job—Capacity, 2 x 12 In.—1 x 15 In.

**CROSS-CUT
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All Standard Building Dimensions

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**Furnished with Either Gasoline or Electric Motor
TRY AT OUR RISK!**

Cost Less Than One Half of Any Machine of Equal Capacity

Get the full facts about the Onan "Safty Saw". Read the letters of satisfied users. See how handy and convenient this saw really is. To prove to you the savings you can make, we will send the saw on trial. Write today for descriptive circulars and trial offer. No obligations now or later.

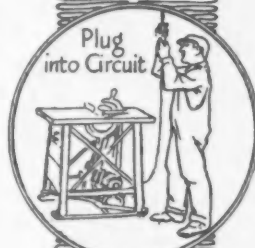
Write your name on the coupon and mail with a letter-head or piece of your stationery. We know what information you wish and will get it to you promptly.

Name.....

Firm.....

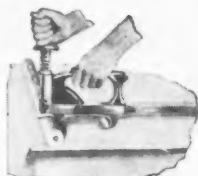
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ONAN "SAFTY SAW"**



Crofoot SCREEN TACKER

Crofoot Tackers Patented U. S. and Foreign Countries



Crofoot Shade Tacker
and 10M Staples,
Trial Outfit,
\$9.75 Postpaid

J. B. CROFOOT CO.
has established an
enviable reputation for
efficient service and
fair dealing

"Draw with a Claw Tack with a Whack"

That's the way the Crofoot tacker works. 77 times you can draw and 77 times you can whack. Each whack you may be sure of that staple going to the spot where directed.

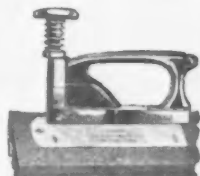
The Crofoot is the simplest and best device for fastening screens. 5 times the speed of tacks and hammer; absolutely guaranteed. One loading, 77 staples. Can be reloaded in 3 seconds. All working parts made of high-grade steel, properly hardened and tempered. Does not clog or get out of order.

Genuine Crofoot Staples are packed only in sealed boxes under the Crofoot Trade Mark. 10,000 staples to the box.

Fast as you whack it, Crofoot's Tacker tacks it.



**HARDENED STEEL
REPLACEABLE CLAWS**
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Crofoot Tag Tacker
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Trial Outfit,
\$8.50 Postpaid

Order Now at Our Risk—\$9.75

Return within 10 days if not entirely satisfactory, and we will refund purchase price, less amount for actual staples used. The price, **\$9.75**, is complete Crofoot Screen Tacker and 10,000 staples.

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You may send us one Crofoot Screen Tacker
and 10,000 Genuine Crofoot Staples for which
I will pay the postman \$9.75 plus postage. ☐
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Leaky Concrete Made Waterproof with an "ANTI-HYDRO" Plaster Coat in this Post Office

The concrete pits and walls of the pipe tunnels in this post office leaked badly. A cement plaster coat mixed with "ANTI-HYDRO" was applied to the inside of the walls and pits and now they are absolutely and *permanently* waterproof.

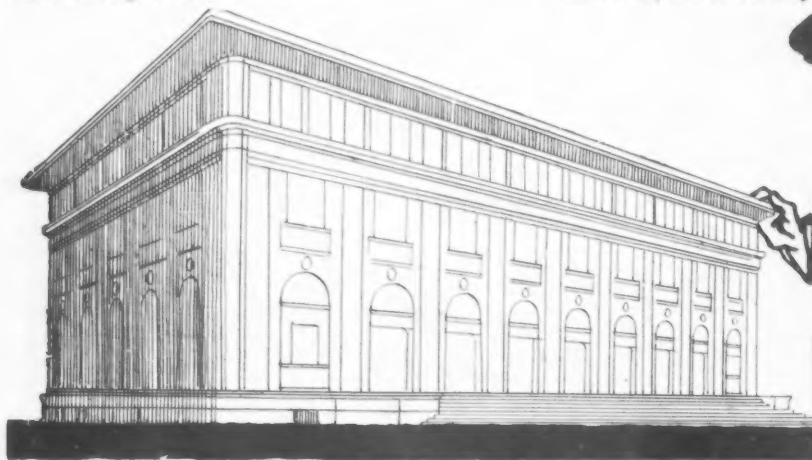
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"ANTI-HYDRO" has been repeatedly specified and used by leading architects, engineers and contractors for 21 years. Use it on your next job.

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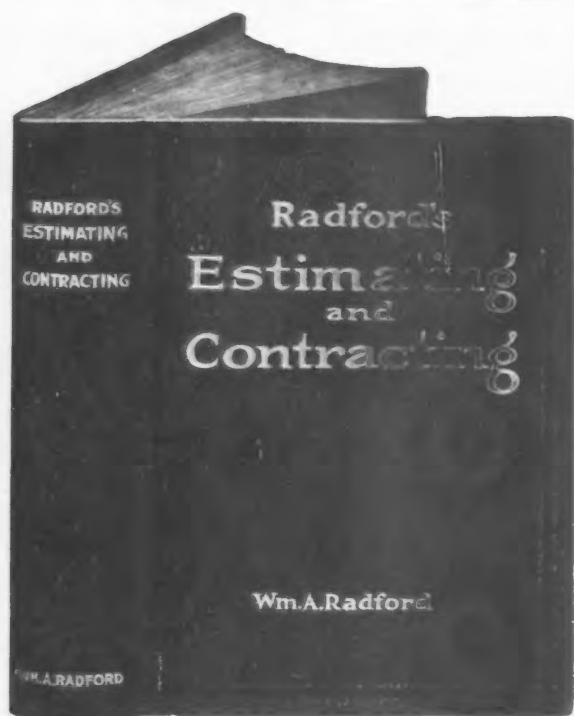
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The most important room in the home can also be the most beautiful by equipping with "SNO-WITE" Bath Room Trimmings.

"SNO-WITE" trimmings are made of enameled iron, finished in glistening, vitreous porcelain enamel under a special process originated by us.

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Are you content to make a small profit slowly on hand labor or—a large profit quickly by means of a modern machine?

\$25.00
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TO YOU



Mix Your Concrete
Does It Faster—Better—Cheaper

This mixer puts you in the position to do all kinds and classes of concrete work. It lifts you out of the old, expensive shovel and mixing board method, enabling you to work faster, to do more work, to do bigger work, to do better work and cheaper with a bigger profit on every single job.

The Best Mixer On The Market

The most practical and efficient Mixer in America. With the "Magic" and two men you can do as much work as you formerly did with six men. You can do it easier, quicker and better, producing an absolutely uniform batch every time. Loads and dumps from either side. Mixes $4\frac{1}{2}$ to $5\frac{1}{2}$ cubic feet per batch—can be speeded up to a batch a minute—over 2,000 cubic feet per day. Mechanically simple yet perfect. Fitted with $2\frac{1}{2}$ horse power, 4 cycle horizontal type gasoline engine. Powerful, reliable, economical—requires only 2 gallons of gasoline a day. Protected by all-steel housing. Two doors at rear makes it easy to get at. Comes complete ready to take out on the job the minute it arrives. Nothing complicated—nothing to get out of order. Can be operated by any one who will read the simple directions which accompany each machine. Mounted on steel wheels. Guaranteed to give satisfaction.

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Just \$25.00 brings it to you on 10 Days Free Trial; should you not be perfectly satisfied return it and get your money back.

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INVESTIGATE-THIS MEANS MUCH TO YOU!

The road to bigger profits, bigger business, bigger success is open to you. The opportunity to make yourself a big man is before you. Don't sit idly by while other men are forging to the front. Get the facts. The simple act of signing and mailing this coupon may be the turning point in your career. The time to act is NOW.

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You actually save \$50.00 to \$60.00 per thousand square feet in laying wood floors over concrete by using Bull Dog Floor Clips. The solid one-piece construction feature of Bull Dog Floor Clips is one point in their favor. The large anchorage surface is another. The simplicity of installation is still another. There are many other points of merit that recommend the Bull Dog method of floor anchorage to good architects and contractors.

If a Fill Is Required You Continue to Save

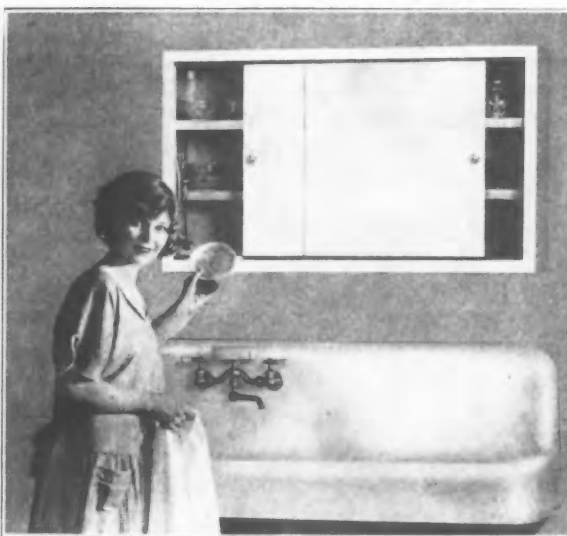


Bull Dog Juniors are used where building requirements demand a fill. They are the same design as regular Bull Dog Clips and half the width. Made in the same sizes, for 2, 3 and 4-inch sleepers. Write for samples.

Bull Dog Floor Clip Co.
WINTERSET, IOWA
90 Branch Sales Offices
15 Convenient Distributing Points



BULL DOG Floor Clips



INSTALL STEEL WALL CABINETS in the Kitchen

Builders and Contractors!

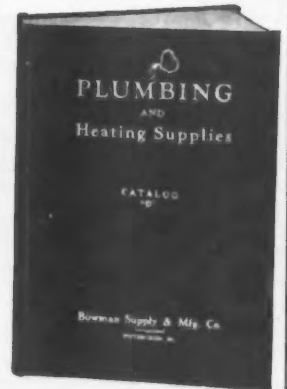
Make the home more sanitary and convenient.

Install Steel Wall Cabinets.

These Steel Wall Cabinets provide many square feet of extra shelf space. Equipped with sliding doors—no outward swing, no bumping of heads—very essential in cabinets over sink. Easily cleaned. Women appreciate steel wall cabinets because they are convenient and improve kitchen sanitation. Appeal to the housewife by installing Steel Wall Cabinets and see how quickly you rent or sell. 4 sizes—30" to 48".

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is a complete file in itself for plumbing and heating supplies. Our catalog is a reference of the best in supplies. If you haven't a copy, let us send you one. It will help you in your work of visualizing to your client the bathroom furnishings, plumbing and heating installation.

Our modern lavatories, bath tubs, sinks, closet bowls and tanks are made of the best por-



celain enameled cast iron and vitreous china. Well made and reliable.

Write today for our
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new catalog "D" and
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The Famous "Hypo" Warm Air FURNACE

Built to last a lifetime with but few repairs—cast iron construction—massive and solid—no steel to rust or burn out. Can be used in any height of cellar either high or low. Galvanized casing lined with asbestos. Prices, 24-inch fire pot pipeless furnace, \$98.50—24-inch fire pot pipe furnace, \$82.50.

We have been building furnaces for over 30 years. Inquiries given prompt attention.

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ROYAL GREEN, of course!—

We have Sylvan Green, Royal Green, Creme Green, and Evergreen Marble for Stucco Dash, Terrazzo Floors and Interior Marble Work.

ROCK PRODUCTS CO.
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Talc



This Kind of Floor shows off furnishings to advantage

Home owners find that a beautiful oak floor enhances the beauty of their furnishings, their walls, pictures and hangings.

Even furniture of moderate cost is displayed to the best advantage when well set off by open spaces of nicely selected and laid oak flooring.

Oak is oak, but the selection of certain figures in oak, the finish of the surface and perfect matching is what determines beauty of a laid oak floor.

"Perfection" Brand Oak Flooring is the cream of the stock. It takes a velvety lustre. It matches perfectly. The older it is, the more its beauty appeals to the eye.

For better satisfaction of the architect, the contractor and the owner, "Perfection" should be used. Technical data and a copy of "The Overlooked Beauty Spots in the Home" sent on request.

ARKANSAS OAK FLOORING COMPANY

Pine Bluff, Arkansas



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'PERFECTION'
Brand Oak Flooring



Drilling in concrete ceiling for conduit



Chipping stair treads



Bushing rough concrete

WITH the tremendous increase in concrete construction, the contractor who has no Syntron Electric Hammer is badly handicapped. Quick Service Electric Co., Pittsburgh, wrote:

"Our men are enthusiastic about the Syntron. We can now take contracts for work we were compelled to refuse before."

SYNTRON Electric Hammer

The Tool of 100 Uses

Drills 3 inches a minute into concrete or masonry. Chips or channels as fast as ten men. Saves 90% in time and costs on a hundred different jobs. No motor or gears to get out of order. Operates from any light socket. One man easily carries it.

See the Syntron exhibit at the Iron and Steel Exposition, Philadelphia, Commercial Museum, September 14 to 19.

New Purchase Plan Lets You Buy Syntron Out of its Savings

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How can Syntron save us 90% in time and costs and buy itself out of those savings? Send us the facts. Also send free copy of your magazine, "The Syntron."

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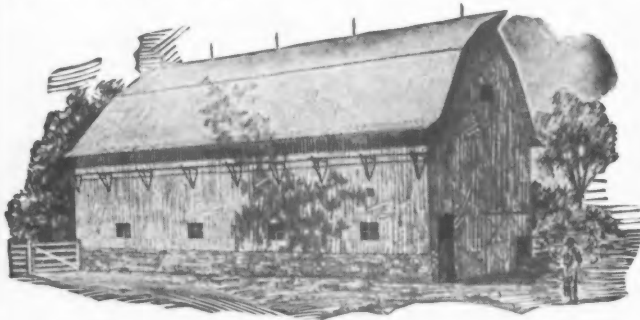
Business

Address



"We would not think of getting along without Reliable Brackets"

That's a pretty good recommendation from an experienced and successful building contractor! Read this letter—



Grove City, Pa.
Elite Manufacturing Co.,
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Gentlemen:

About a year ago we ordered two dozen of your Reliable Brackets, then later we got half a dozen more. We ordered them thru our local lumber dealer. We also bought two dozen of your roof brackets from your Mr. Kometling. They have all paid for themselves, in fact we would not think of getting along without the Reliable Brackets.

Yours very truly,

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This letter is just like hundreds of letters we are getting all the time. Builders and contractors everywhere are telling us how much safer and more economical Reliable Scaffold Brackets are than the old wooden scaffolds.

There are no holes to plug up after using Reliable Brackets.]

Send in your order and start saving money now. All of these brackets will save you lots of time and money—Roofing Brackets, Hook Type Bracket, Ladder Bracket, Corner Bracket and standard Scaffold Bracket.

Send for our illustrated folder describing these brackets or order now. We ship C. O. D. so you can see the brackets before you pay a cent.

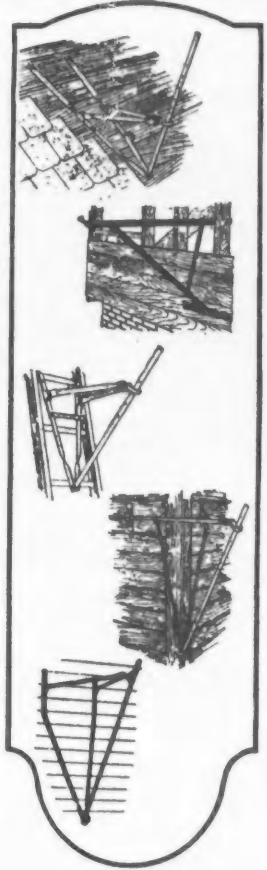
ELITE MANUFACTURING COMPANY

Reliable Scaffold Brackets

No holes to plug after they are removed

Dept. AB-9

Ashland, Ohio

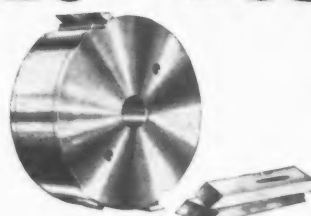


There's more profit in a HUTHER SAW

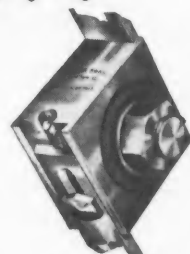


Thin High Speed Steel Knives

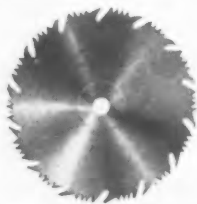
Grinding Attachment



Cylinder Cutter Head



Cutter Head

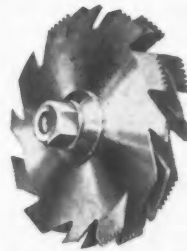


Circular Mitre Saw
with Cleaner Tooth

Backed by fifty years experience in the making of highest grade saws, each Huther Saw has a quality built into it that insures maximum length of service.

Huther Bros. Saw Mfg. Co.
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Dado Head



Kernerator-equipped home
of Mr. S. P. Crosby, 104
Mississippi River Blvd., St.
Paul, Minn. Architect,
Peter Linhoff, St. Paul.

Instant Waste Disposal

—time tried
and proved



IN such excellent homes as this one which Architect Linhoff has created for S. P. Crosby of St. Paul, the Kernerator is the accepted means of garbage and waste disposal. For this great convenience removes for all time the most distasteful task of housework—and the moderate first cost is the *only* expense, since it—

Costs Nothing to Operate No Fuel Required

The waste itself is all the fuel required. As shown, the Kernerator consists of a brick incinerator chamber, built in when building is being erected, with handy hopper door opening into the flue in or near the kitchen. *All* waste—garbage, sweepings, tin cans, bottles, broken china, rubbish of all sorts—when dropped through the hopper door, falls to the combustion chamber. Here an occasional lighting burns everything but metallic objects and the like. These are sterilized by the flame and later removed with the ashes.

For full details see Sweet's,
pages 2536-37 (1924) or write

KERNER INCINERATOR CO.
1053 Chestnut St. Milwaukee, Wis.

KERNERATOR

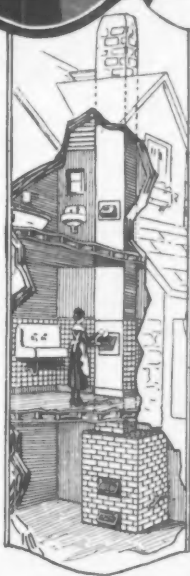
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Reg. U. S. Patent Office

Drop all
waste here



—then
FORGET it!



The Kernerator must
be built in at the base
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when building is being
erected—it can rarely
be installed later.



Hagarty Says:

"To get Packard service and Packard class, you've got to have a Packard—no makeshift car will answer.

"Same way with Stucco—only way to get Rocbond results is to use Rocbond—a *good half inch*."

ROCBOND

Exterior Stucco

A Good Half Inch

|| FOUR PLANTS ||
Write the one nearest you.

The Rocbond Company

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Cedar Rapids, Iowa

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New York, N. Y.

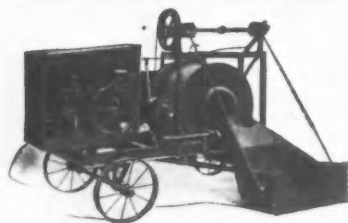
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A. B.

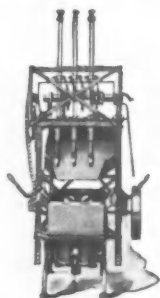
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with Side Loader. Made in 5 and 10 cu. ft. capacities.



Panama Power Tamper
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Whatever You Need in Concrete Machinery

From the large batch mixer with side loader or platform down to the small hand power mixer, from a complete block making plant down to the simplest concrete mold, there is efficient equipment in the Panama Line that will satisfactorily meet your needs.

Panama Concrete Machinery assures the highest quality products, peak production at the lowest possible consumption of time, labor and money.

Write for the "Panama" catalog of Concrete Mixers and Concrete Block Machinery.

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Tilting Drum Mixers

Capacity 4 cubic feet—loads easily and quickly.



Panama Leader Block Machine

—works quickly and easily—saves time and labor.

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That problem of gas supply permanently solved—

Modern invention has made it possible for you to have gas in your suburban or country home by installing a little inexpensive GAS PRODUCER of your own.

The CLARK GAS PRODUCER with equipment is not merely a

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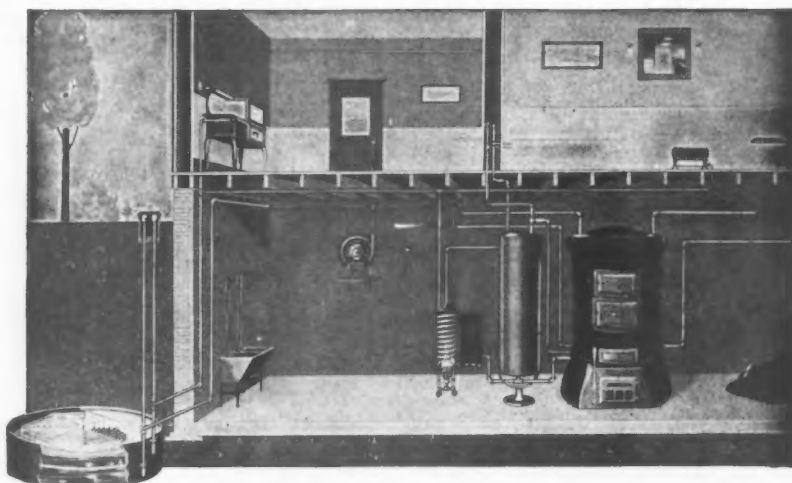
It gives you an abundant supply of gas for cooking, heating water for baths and laundry purposes, operating the Humphrey radiantfire for room heating, laundry mangles, clothes dryers, etc.

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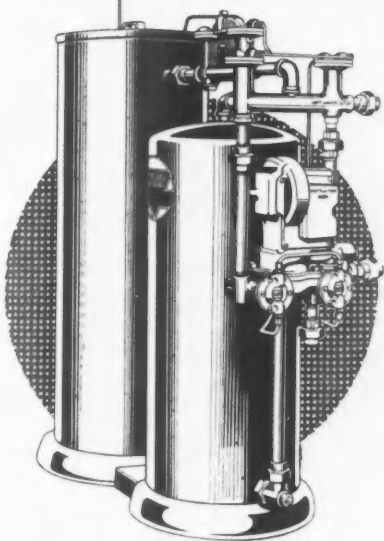
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When you specify a water softener for the houses you build, you want one that is guaranteed to give satisfactory soft water service—one that is economical, with quality beyond question—one that will help greatly to make the homes you build, **preferred homes.**

DURO *Automatic* WATER SOFTENER

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- 1 It is completely automatic in operation. It is necessary to replenish salt charge only a few times each year.
- 2 Perfectly softened water—free from discoloration—is supplied at city pressure. There are no restrictions to the flow of water.
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- 7 Fully covered by the Duro iron-clad guarantee.
- 8 Shipped completely assembled ready to operate, making installation cost low.

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109 Monument Ave.

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Largest Manufacturers of Water Systems and Water Softeners

Duro Guarantees Satisfactory Water Service ~



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THE ratings of Thatcher Steam and Hot Water Boilers were first established on a most conservative basis. Since that time, they have never been "boosted" in the slightest. This means that Thatcher Boilers will heat buildings **evenly** to 70 degrees in zero weather, with ample reserve capacity for still colder weather.

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39-41 St. Francis St., Newark, N. J.

Please send me your new Boiler Catalog.

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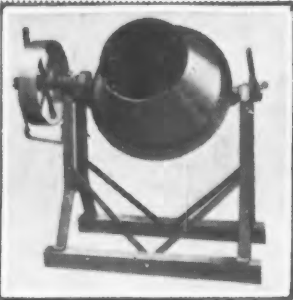
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Bed-rock economy—you will find that your STEWART MIXER costs little to run, little to maintain, and an unfailing producer of *good* concrete at less cost per yard.

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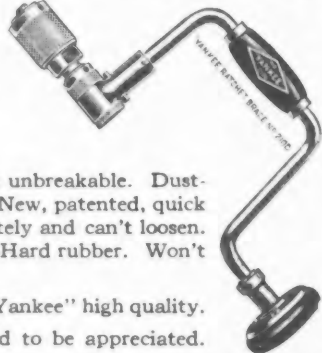
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Made and finished like a precision tool, in keeping with the "Yankee" high quality. Ask your dealer to demonstrate it to you. It must be handled to be appreciated.



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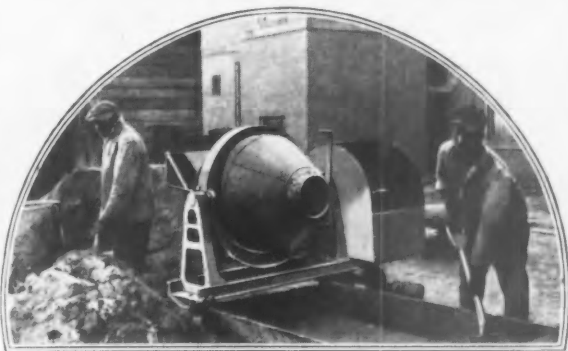
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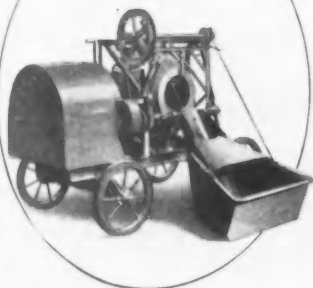


Smith 3 1/2 S (Half-Bag) Tilting Mixer used for mixing mortar—easy one-hand tilt from either side of mixer.

Dry or Wet Batches Equally Easy With a Smith

The advantages of the mixer that is easily adapted to mixes of all kinds—that can be used for mixing mortar for brick, stone or tile placement are many. It means the elimination of extra equipment, low cost of operation, and time saved.

Light Weight and high speed trailer trucks allow maximum portability



Smiths are adaptable to any mixing conditions—with materials of extreme wetness to those of extreme dryness. And of particular value for mortar and similar mixes is the Smith 3 1/2-S illustrated above.

This little mixer is the famous Smith tilting type that permits speedy discharging and absolute self-cleaning of the drum. It holds a batch larger than the non-tilting mixer of the same rating and because of its end-to-center mixing action (an exclusive Smith feature) an accurate, thorough mix is insured. It is quality built, to give fast, dependable service throughout a long life.

Send for our latest catalog—describing this mixer—today.

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Smith Tilting Mixers are made in the following sizes: 2 1/2, 3 1/2, 5, 7, 10, 14, 21, 28, 40, 56 and 112 cu. ft. per batch; Smith Non-Tilting Mixers: 7, 14, 21, and 28 cu. ft. per batch; Smith Paving Mixers: 21-E.

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The SPEED MARVEL

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Crosscuts
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Rips 4-inch

We also manufacture THE BEAVER, which is guaranteed as the world's best light-socket woodworker. The Beaver will rip or crosscut 2-inch material.

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The Simplex Ironing machines saves the labor of ironing by hand and fits ideally into any kitchen as a built in feature. Helps to sell the home.

The Simplex is safe and sturdy. Folds compactly into a space 19 x 20 inches.

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One that you can read. Look at the foot figure beside each inch mark. See how the bright figures fairly jump at you from the black background. They can't shrink or stretch and they're made by Starrett—which answers all questions as to their accuracy.

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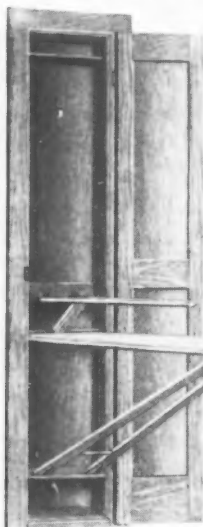
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The Graf Ironing Board Cabinet fits between 16 inch standard studding. This saves the labor and expense of framing and cutting to fit.

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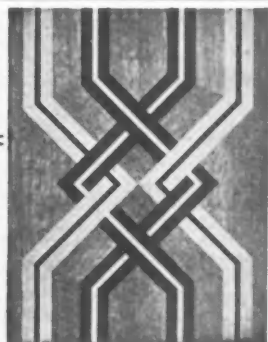
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It is easily installed in old or new buildings and greatly increases the value of the property.

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Architects of the highest artistic reputation find us prepared to execute their designs in the most perfect manner. There is no practical wood which we do not carry in stock and there is no idea too difficult for us to execute.

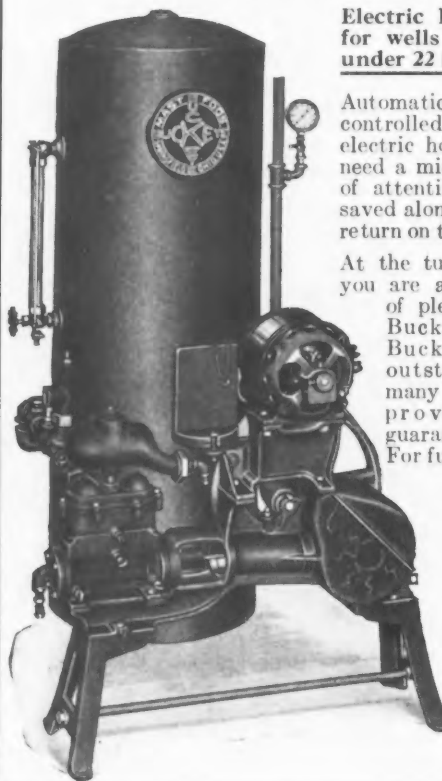
Take advantage of this service. Write for our beautiful colored catalog and our book showing installations in every part of the country.



WOOD MOSAIC COMPANY, Inc.

New Albany, Indiana

BUCKEYE



**Electric House Pumps
for wells and cisterns
under 22 feet in depth.**

Automatically oiled and controlled. The Buckeye electric house pump will need a minimum amount of attention. The time saved alone will be a big return on the investment.

At the turn of a faucet you are always assured of plenty of water. Buckeye efficient—Buckeye durable—outstanding in its many Buckeye improvements. We guarantee our pump. For further information write for circular.

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Springfield,
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Leads the Field!

In the Chicago District more Cropp Mixers are used than any other. For sixteen years they have built a reputation for long service. Discharges a full load with one revolution; take a full wheelbarrow charge in one gulp; fast and thorough mixing action for wet or dry mix; a reliable and accessible power plant. These features have won universal approval.

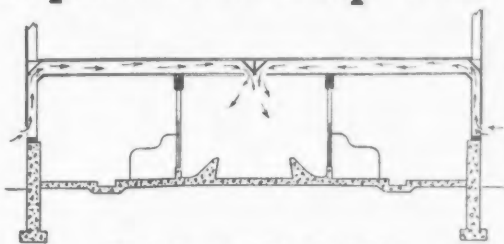
Send for full details on the new Cropp Model.

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Detail showing Fresh Air Intakes.

A BETTER barn means a more satisfied customer for you. Let our architects help you with suggestions and plans. No obligation for you or the owner.

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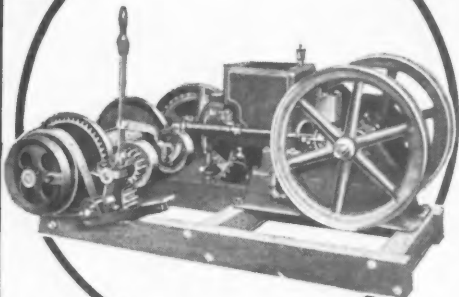
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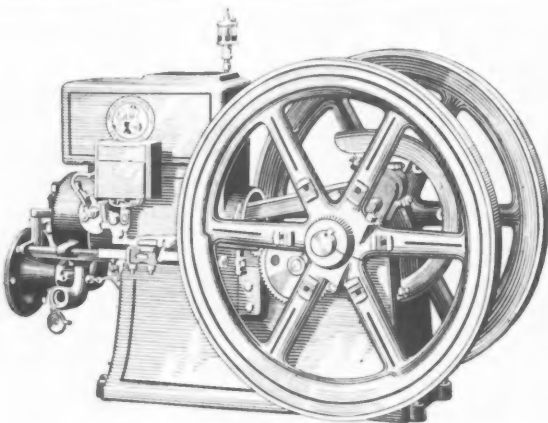
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The highest grade Reversible Hoist of its size. Simple, compact, dependable. Equipped with adjustable, positive asbestos lined brake—internal expanding asbestos faced clutch—builders' sheave.

Write for Special Hoist Bulletin

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Learn how contractors, builders and floor layers are developing a fine business in selling and laying

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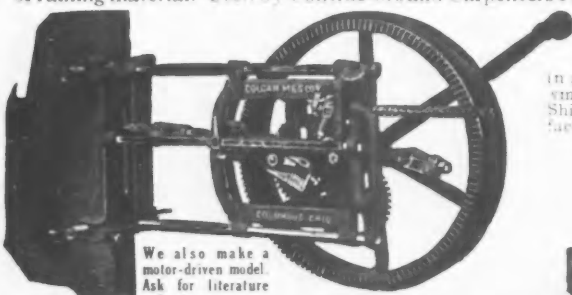
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The Champion Mortiser cuts mortises five times faster and a hundred times neater than the hammer and chisel method. Eliminates danger of ruining material. Used by Contractors and Carpenters everywhere.



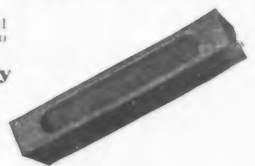
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Champion Mortiser
Cuts a Perfect Mortise in a Minute or Two

—means easier work and bigger profits. Cuts mortises ¼" to 1½" wide in any size from a round hole to a 6" slot. Every mortise has perfect sides, smooth bottom and uniform depth. Year's Guarantee with each machine. Shipped complete with choice of any two bits. ¼" to ¾". \$40.00 f. o. b. factory. Extra bits to 1½", \$2.00 each.

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Nothing is more essential for efficiency and safety than a firm foot grip; no plate made can give your men a better footing than Central Floor Plate. They have a remarkable gripping surface, are rust resisting and easily cleaned.

Made in various thicknesses, widths, and lengths. Let us quote you.

Scientifically designed projections scarcely noticeable until they take their non-skid grip.

Central Iron & Steel Co.
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CENTRAL FLOOR PLATES

The Improved SCHLUETER

Owes its popularity to its perfectly balanced automatic roller, silent chain, solid one piece aluminum dust pan, perfect vacuum system of dust collecting, its ability to do six men's work and do it better and the total absence of vibration. This sturdy machine requires no experienced operator and will surface right up to the quarter round without the use of an edge roller.

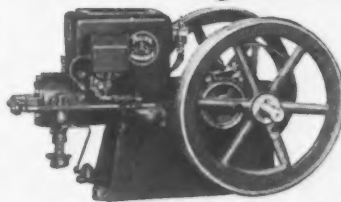
A Five Year Guarantee and a Five Day Free Trial offer absolutely protects the purchaser and makes owning a SCHLUETER easy for both large and small contractors. It will usually pay for itself with the profit on one large job.

Write for our proposition
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Machinery Company
Incorporated
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5 day
trial!

Continuous Service Pays Profits



You are assured of uninterrupted power service at low cost when you specify Fuller & Johnson Engines on your power driven equipment.

For example, this is the way H. B. Agsten & Sons, a West Virginia Contractor feels about it:

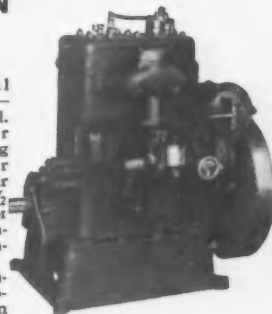
"We now have four Fuller & Johnson Engines in use in concrete mixers—one that we purchased in 1919. These engines have seen constant, hard use—sometimes as much as 28 hours steady run on reinforced concrete buildings, and I must say, I have never owned or seen their equal in a lot of ways, such as easy starting, power, steady long runs, and long life."

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are designed especially for industrial work and develop 5 to 8 B. H. P.—the power varying according to speed. Can be furnished either radiator or hopper cooled. Built either for taking power from main crank shaft or from separate low speed shaft with gear reductions approximately 2 to 1, 2 1/2 to 1 or 3 to 1. Can be furnished for either left or right hand direction of rotation. Equipped with full pressure lubrication.

Bulletin AB500 gives complete information. Write for it. "Make good equipment better by using Fuller & Johnson engines."



FULLER & JOHNSON MFG. CO.

Engine Specialists—Established 1840

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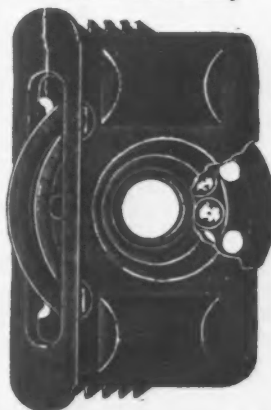
"GRAND RAPIDS" All-Steel Sash Pulleys

are **LIGHTEST** yet strongest. Two-thirds of your freight is saved, yet a **BROKEN PULLEY IS UNKNOWN** in our product—and these superior **ALL-STEEL** goods cost no more than the common pulleys made of cast iron.

The No. 10 Ball Bearing Pulley illustrated here is one of our best known styles.

This Pulley has the automatic saw-tooth fastening feature which saves time and labor. No nails or screws required, yet the Pulley is held in place more securely than when fastened by any other method.

No. 10 Ball Bearing



The bearing contains eleven 1/4 inch solid steel balls running in lubricant, insuring a noiseless, easy running wheel under any load. This feature makes an excellent talking point for your window frames.

See this Pulley at your dealer's.

Mail Coupon
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Sample

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560 11th St.

Grand Rapids, Mich.

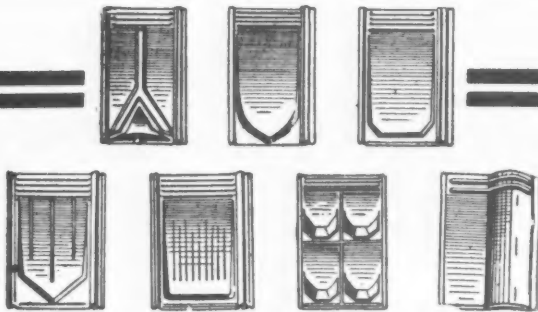
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"Grand Rapids" All-Steel Sash Pul-
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These rules are of special hardness, therefore hold their shape well.

Distinct sunken black markings. Solid brass joints.

Can be furnished with Folding Hook, the feature that proved so popular on our Spring Joint Wood Rules.

CALL FOR LUFKIN RULES, BOXWOOD, SPRING JOINT, ALUMINUM, STEEL.STOCKED BY SUPPLY HOUSES
Send for Catalog**THE LUFKIN RULE CO.**SAGINAW, MICH.
New York London, Eng. Windsor, Ont.**MAKE A BIGGER PROFIT
On The Roof**

Wise, thrifty builders will appreciate the saving in putting on Walters and Coopers Metal Shingles. The Walters and Coopers Metal Shingles weigh less than wood or slate and takes lighter frame work to support it. Moreover, it is permanent. This roofing does not require skilled labor to put it on, carries a low rate of insurance and is storm, wind and fireproof. We manufacture a complete line of designs in Painted Tin, Genuine Re-dipped Galvanized Tin, Sheet Zinc and Copper.

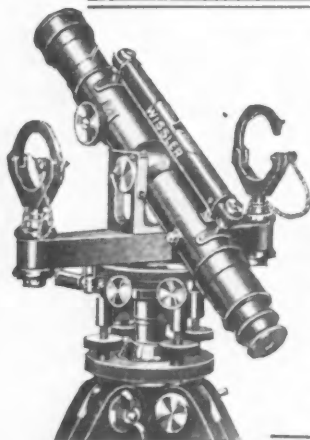
*Write for full size samples and prices***National Sheet Metal Roofing Co.**
339-345 Grand St., Jersey City, N. J.**That's My Level**

Most Mechanics who are acquainted with the Empire Level are strong in their preference for it. It is accurate, reliable and easy to use.

The interchangeable vial case feature—found exclusively in Empire Levels—enables the Mechanic to repair broken glasses quickly, easily and inexpensively by merely inserting a new case.

See your hardware man or write
Empire Level Mfg. Co.
MILWAUKEE, WIS.

This is a
24 inch
Empire
Aluminum Level-No.
1E—with interchange-
able vial cases.

**EMPIRE
LEVELS****THIS WISSLER PATENTED LEVEL****AT A SPECIAL LOW PRICE FOR ONE MONTH ONLY***Write at once for CIRCULAR and FREE TRIAL—TERMS if desired.*

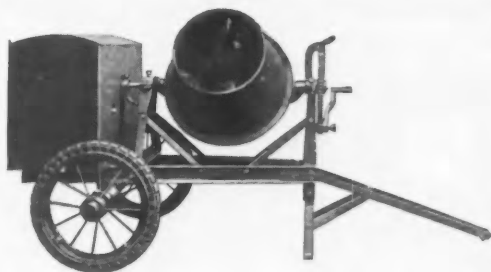
A Transit and Level combined. Saves time and money. Simple and practical—always ready for use. It costs you nothing to try it. Full instructions free. Sent on approval to any established builder—money will be refunded if not entirely satisfactory.

Beware of imitations. We are the inventors and sole owners of this Patented Level. All infringements are liable to prosecution.

We also manufacture a complete line of Transits and Levels for Architects, Builders, Surveyors, Civil Engineers, etc., from \$25.00 up.

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



A sturdily constructed Mixer, Bronze Bushed drum turning on ball bearings, wheels equipped with roller bearings. A Thoro-Mix in less time.

The Result

A Daily Increase in Sales. You will want to consider this Mixer before buying your next one.

Send for Bulletin No. 305.

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Established 1885

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*A
Residence
at
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HOW MUCH WILL YOU GET FOR YOUR HOUSES?

Have you installed Showers?

Showers have a definite influence on rentals and selling price.

The **Kenney Shower** particularly, because it eliminates the overhead smothering deluge and unsightly curtain.

Those two features alone give the **Kenney Shower** an outstanding preference among home buyers and renters.

Kenney Showers are moderately priced.

*Write for Booklet B
It tells why curtains are no longer necessary*



The Kenney-Cutting Products Corp.
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INSTALL "IDEAL" BASEMENT WINDOWS

And make your basement light and airy. Builder satisfy your client, give him real protection as well as 100% value for his money at a cost less than wood.

"Ideal" windows have features that are quickly appreciated. They are attractive in design and harmonize with the appearance of your building. Positively weather proof. Sash are easily lifted from frame making them easy to wash and paint. No locks or hinges to buy. The sash members fit snugly against the frame leaving no chinks or cracks to admit wind or rain. They will not warp, swell or stick, swinging freely at all times.

Made and carried in stock in four standard sizes. Easily installed. Send us the coupon below and we will send you more information about how you can save your client's money.

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Gentlemen:—Please send me full "Ideal" information.

Name _____

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THE ROOF USED TO
LEAK, BUT IT DOESN'T
LEAK ANY MORE



The Reason Why?

It has been covered with

"BAYONNE" ROOF AND DECK CLOTH

Carpenters and builders who have used Bayonne know it is dependable and that it will do what we claim for it.

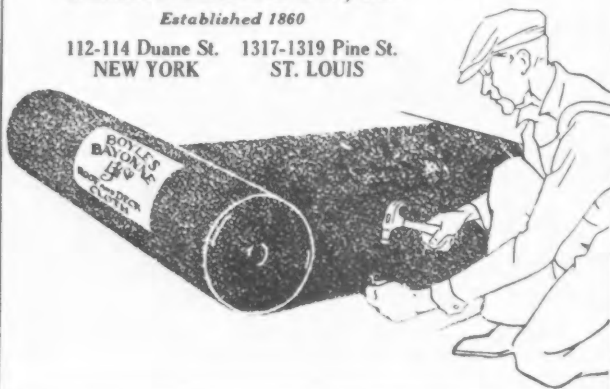
It is guaranteed waterproof and will not crack, buckle or peel.

*Write for Sample Book "R"
and ask for one of our Repeat Memo Pads*

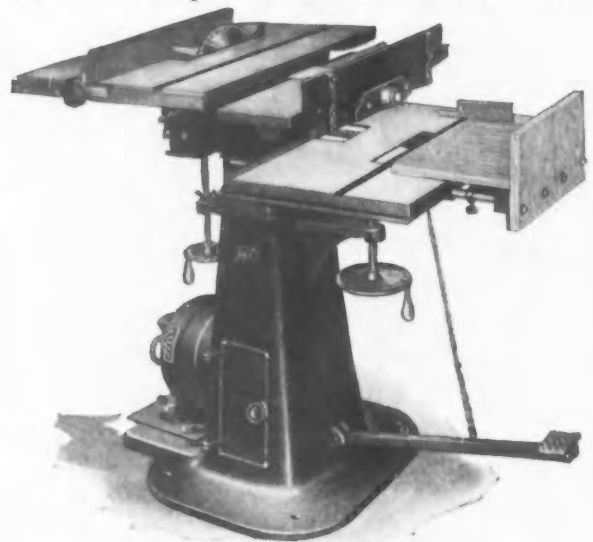
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NEW YORK ST. LOUIS



Five Complete Machines in One



SIMPLICITY WOODWORKER

Tilting Saw Table, 61" Jointer with Tilting Fence, wonderful Thickness Planer, Boring Table with Hollow Chisel Mortiser and Speed Spindle adapted for many operations.

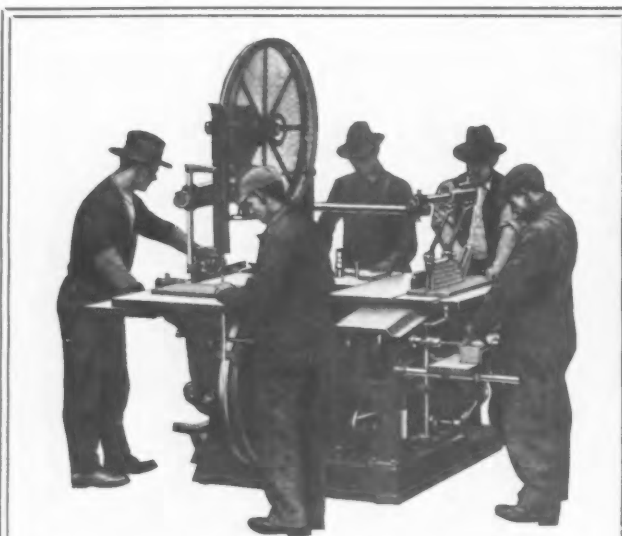
Simple, Strong, Safe. Not a toy—not a freak. Ball Bearings and quality-made throughout. Small floor space, small investment, small up-keep. Money-back guarantee.

Write for prices and folder showing 20 entirely different and practical operations.

COMBINATION WOODWORKING MACHINE CO.

154 N. Desplaines St.

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The Overwhelming Popularity of

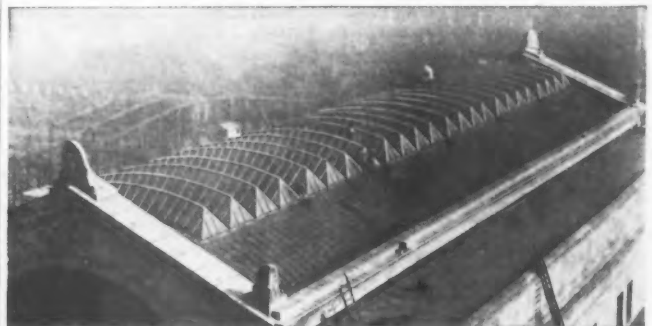
The New Model Crescent Universal Wood Worker Nos. 101 to 112

is only another evidence that the high standard of Crescent quality is appreciated by well informed users of wood working machinery.

Ask today for price list and circular giving complete description. Also ask for special circulars of band saws, saw tables, shapers, variety wood workers, jointers, planers, planers and matchers, table cut off saws, swing saws, disk grinders, borers, hollow chisel mortisers, tenoner, universal wood workers.

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*Great Steelead Skylight Over Concourse of
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The New \$75,000,000 UNION STATION CHICAGO

Is Daylighted with

3-Way Sidewalk Lights
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Proven satisfactory in the face of every test for this great structure where atmospheric conditions are difficult, these 3 Way Products should "make good" anywhere.

If interested, write for literature

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UTILIZES THE SPACE UNDER THE RANGE



Heat from oven cannot reach food-stuffs stored below — an exclusive feature.

A Strong Selling Point

Write today for Catalog AB9 with prices.

in the modern apartment and house kitchen is Kab-Range, the combined range and kitchen cabinet. This space and labor saving unit is both beautiful and practical, assists planning and aids selling. Surprisingly reasonable prices on models for any requirement. Write us.

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KAB-RANGE

Flag Poles Improved

by the

"Poletube" FLAG POLE TRUCK



A new indestructible truck supplied with all our poles.

It cannot cut into Halyards or rust fast. Prevents flag fouling.

A 6 1/2" galvanized body revolves on two sets of bronze ball bearings around cast steel king pin, capped with bronze hood. Double bronze 2 1/2" sheaves on bronze roller bearings revolve on Tobin bronze pins. Gilt balls slip over 5/8" brass jacketed spire, driven into king pin.

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NEWARK, NEW JERSEY

== STEEL POLES ONLY AND BETTER ==

PRESTO SLIDING STAIRS

"Works like Magic"

ANOTHER
20TH CENTURY
ACHIEVEMENT

MAKES AN EXTRA
ROOM AVAILABLE

TAKES UP NO
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ADDS FROM \$500
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SAFE & SIMPLE
TO OPERATE

QUICKLY INSTALLED
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WRITE FOR PRICES
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SASH *Qualitybilt* DOORS
MILLWORK

DUBUQUE — IOWA



Operates
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Cheap, convenient, sure!

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Hold Swinging Doors Open

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A Hanger for any Door that Slides

AURORA, ILLINOIS, U.S.A.

Branches in important centers

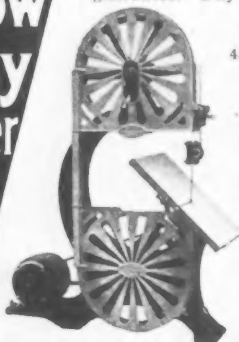
950

See page 42 this issue

**Buy
Now
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You Can Do It with a Boice and Bank the Balance!

In the shop or on the job, a Boice-Crane Bench Machine will do your work speedily and accurately at lower first cost and with greater operating economy. Every Circular Saw, Band Saw, Lathe, Jointer, Drill, etc., is sold on a positive money-back guarantee. Buy a Boice and bank the balance.



14" Band Saw

Table 12" x 14", tilts full 45 degrees. Saws 7" stock. Uses blades 3/16" to 1/2" wide. Highest quality bronze bushings throughout. Driven by any 1/3 or 1/2 H. P. motor, attached to light socket. Sold with or without motor. Tight and loose pulleys supplied for line shaft drive.

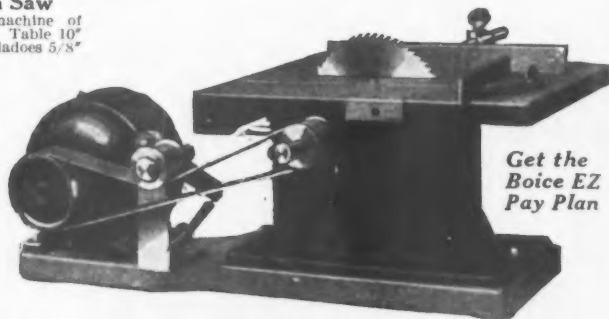
Junior Bench Saw

Speedy, accurate machine of all-metal construction. Table 10" x 13". Saws 1 1/2" stock; dados 5/8". x 5/8"; driven by any 1/4 to 1/2 H. P. motor. Portable. Attaches to light socket. Table elevates for grooving—attachments for grooving, sanding, grinding and drilling. Sold with or without motor and base.

Write today for literature and prices on these machines, jointers and larger circular saws and the Boice "E-Z Pay" Plan.

W. B. & J. E. Boice, Dept. A. B. 9-A
Toledo, Ohio

"World's Largest Makers of Small Bench Machines"



**Get the
Boice E-Z
Pay Plan**



A SMALL MIXER THAT IS BUILT TO BIG MIXER STANDARDS

The Leach-Oshkosh half-bag tiler is a new addition to an old established line of building mixers, representing the highest development of design and construction. It is the skill that comes from successful production that gives to Leach high worth and low cost.

LEACH COMPANY

Oshkosh, Wisconsin



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"Workmanlike manner" presupposes strict attention to **ACCURACY**. To base your work on exact measurements, you should use a reliable Steel Tape. For accuracy, durability, and convenience of operation, none can surpass

K & E MEASURING TAPES

Precise
Durable
Exclusive
Patented
Features



See Our
Products
Displayed
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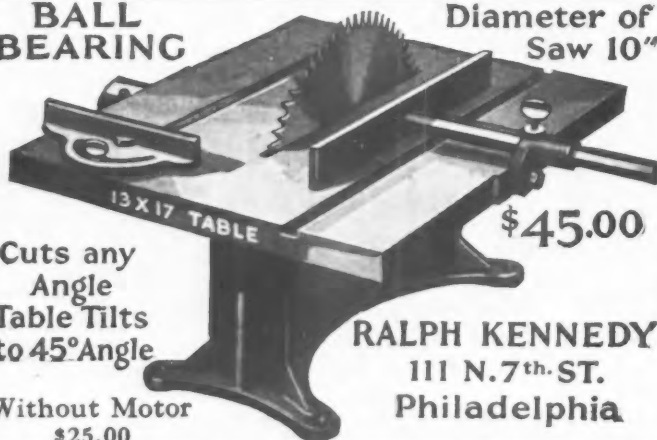
KEUFFEL & ESSER CO.

NEW YORK, 127 Fulton Street, General Office and Factories, HOBOKEN, N. J.

CHICAGO 616-20 S. Dearborn St. ST. LOUIS 817 Locust St. SAN FRANCISCO 30-34 Second St. MONTREAL 6 Notre Dame St. W.

Drawing Materials, Mathematical and Surveying Instruments, Measuring Tapes

**BALL
BEARING**



Cuts any
Angle
Table Tilts
to 45° Angle

Without Motor
\$25.00

Diameter of
Saw 10"

\$45.00

RALPH KENNEDY

111 N. 7th. ST.
Philadelphia

The KENNEDY UTILITY SAW

The handiest and most economical practical saw for all general utility and special purposes. Requires but small space and practically no expense for power.

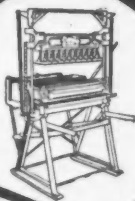
Its many exclusive features make it invaluable for shops, factories, institutions, schools and homes. Being portable, it can be placed just where needed.

The Kennedy Utility Saw is used with economy and satisfaction by

Ship Yards	Electrotypers	Belting Manufacturers
Printers	Builders	Photo-Engravers
Contractors	Carpenters	Woodworking Mills
Newspapers	Box Makers	Packing Box Manufacturers
Brush Makers	Barrel Factories	Carriage Builders
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MORE CASH- LESS LABOR



CRESCENT Concrete Machinery is money making equipment, built for quantity production without breakdowns. Our prices to you mean real savings in first cost and the quality of our machines means bigger profits for years to come with less back breaking labor.

Write for Free Bulletin!

CRESCENT Sewer Pipe and Tile Moulds, Catalog 11 and Bulletin 33.

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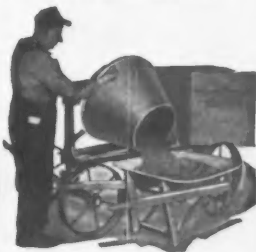
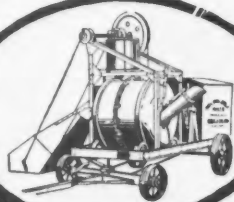
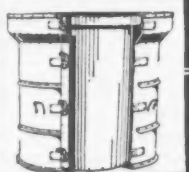
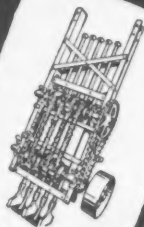
Bull-dog batch Mixers. Catalog 37.

Bull-dog Tilter Mixer, Bulletin 42.

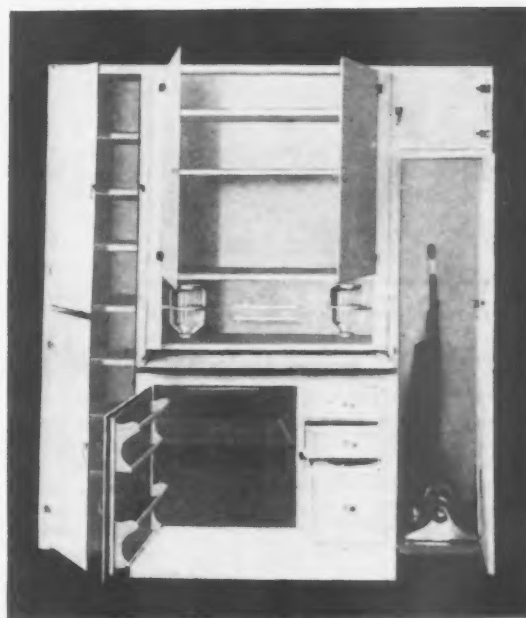
Power Block Tampers, Bulletin 36.

CRESCENT Continuous Mixers, Catalog 10.

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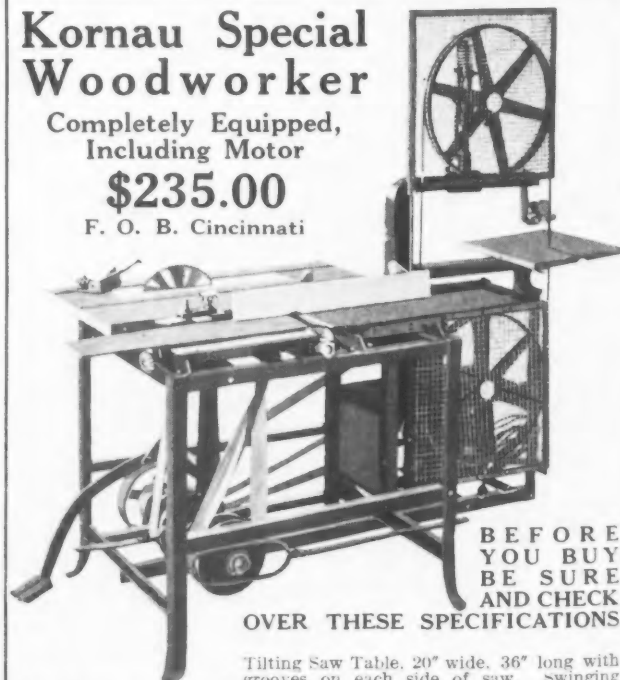


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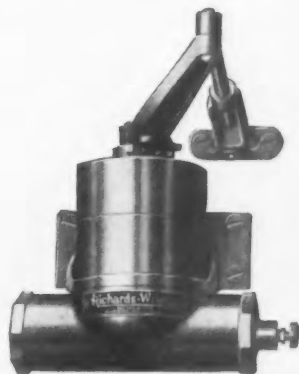
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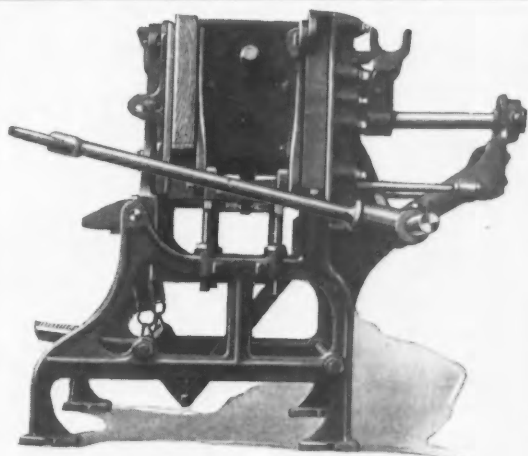
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Richards-Wilcox Mfg. Co.
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(952)

See page 42 this issue



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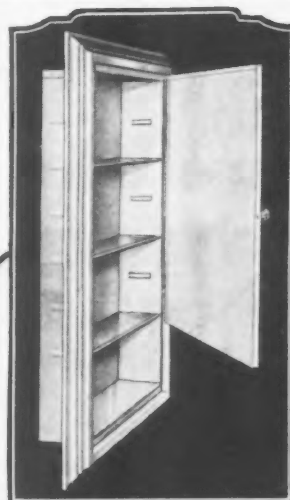
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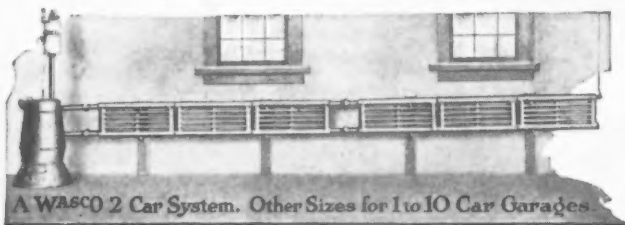
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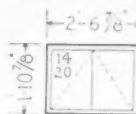
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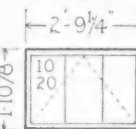


Bayley-Springfield Steel Windows

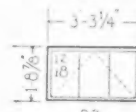
Four Standard Sizes



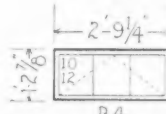
B1



B2



B3



B4

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Bayley construction makes for strength and easy installation—designed for all types of buildings. They cost no more than wood windows, yet they give 50% more light—are fireproof—do not warp or stick—resist burglar entrance and add to the appearance of the building.

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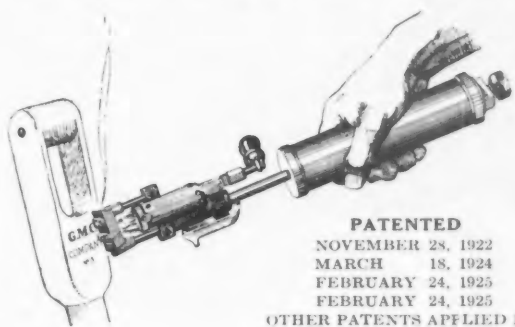
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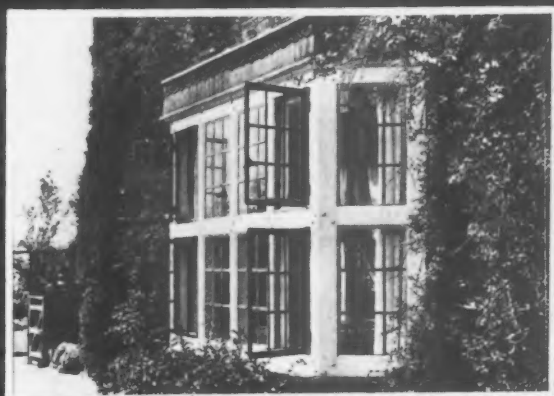
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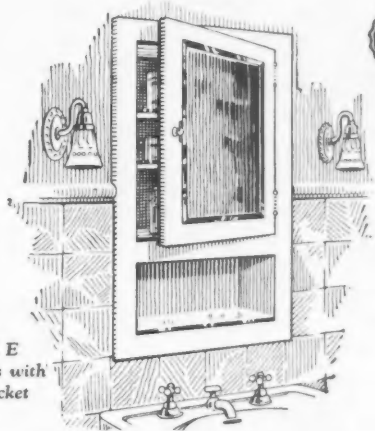
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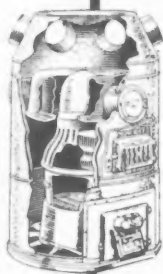
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It will neither break, kink nor stick

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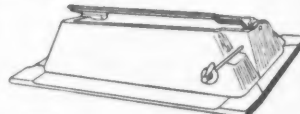
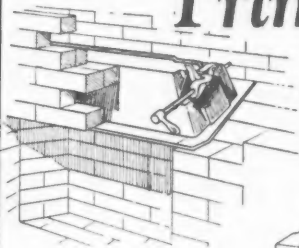
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Construction

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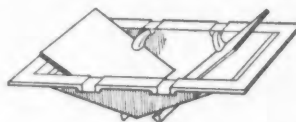
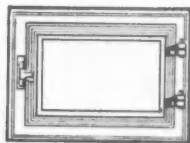
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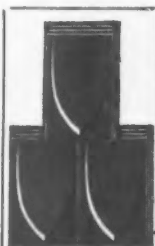


Fig. 157
Note the construction of patent Interlocking Device used on Edwards Metal Shingles and Spanish Tile.



Fig. 367
Metal Spanish Tile for main part of roof

Edwards "Queen Anne" Metal Shingles



RESIDENCE SENATOR GEO. S. NIXON, RENO, NEVADA
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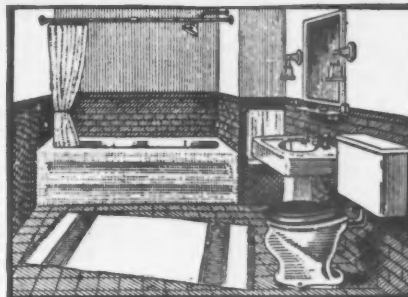
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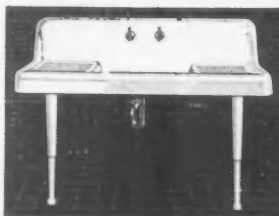
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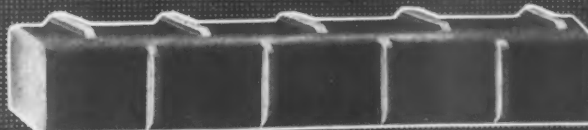


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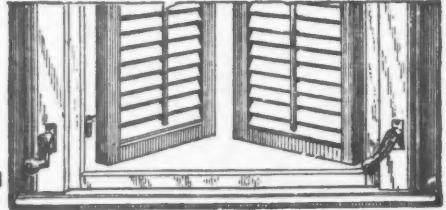
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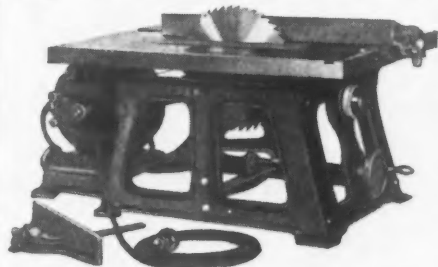
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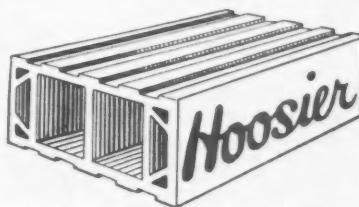
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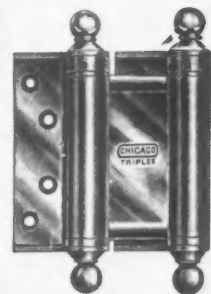


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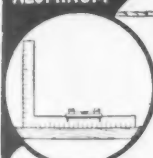
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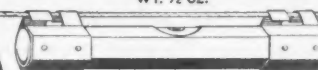
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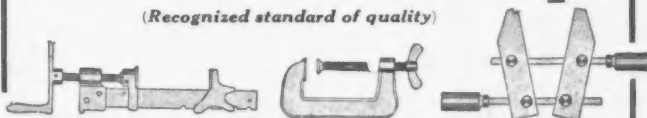
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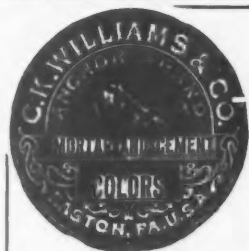
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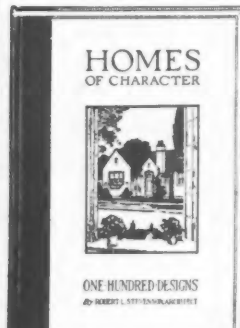
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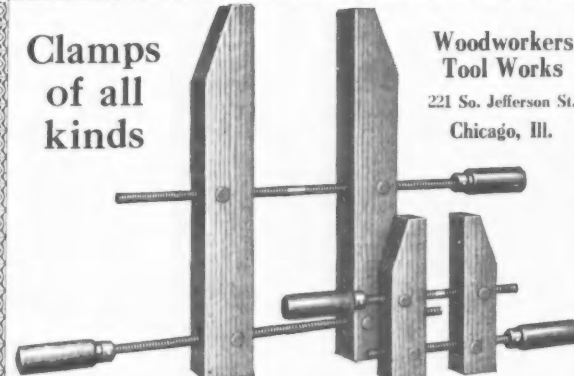
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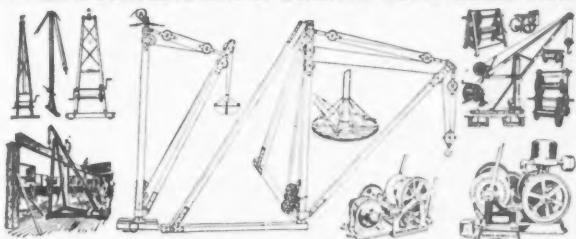
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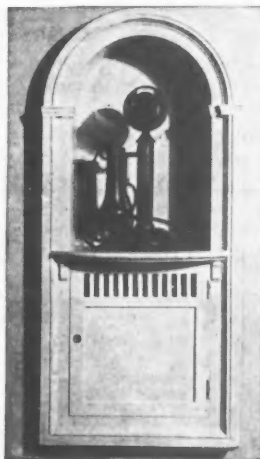
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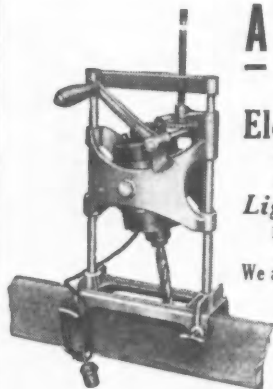
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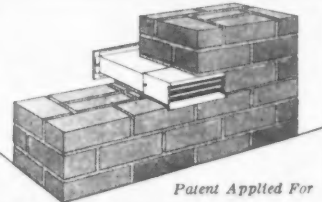
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Only *real practical* small mixer producing same *perfect* work as most expensive big machine. Complete with hand and power drive. A *winner* for the contractor or cement worker. *All steel and iron*. Just like the big \$500 mixers, only simpler. Just the size you need at a price you'd like to pay. Does your work in one-fifth time.

The Whirlwind Way Makes Mixing Pay
 Saves its cost on one job. Capacity about 3 cubic ft. Mixes a batch a minute. Does *PERFECT* work, wet or dry, empties clean. Discharges direct to forms, cuts out the wheeling and backache. Satisfaction guaranteed or your *MONEY BACK*. Reference: Any La Crosse, bank or Dun Agency. Write for circular or order direct from this ad, and avoid delays.

The Little Whirlwind Mixer Co.
 437 Gould Street La Crosse, Wisconsin

PATENTED
 Only \$59. 50

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 5 days at our expense

Here's great money-making news for you. There's plenty of floor-surfacing business to be had. **BIG PROFITS TOO.** Get the right machine to do the work. The **NATIONAL ELECTRIC Floor Surfacers** does the best job in the shortest time. Does away with old-fashioned side roller.

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National Sanding Machine Co.
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"Ideal" Floor Sander

Investigate Our Easy Payment Plan. Start in business for yourself and double your income. Floor surfacing offers a great opportunity. Our easy payment plan gives you the privilege of paying for an "Ideal" out of your profits. Five days' free trial—No obligation. Write us today.

BOETTCHER COMPANY
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Send for 1925 Catalog

Direct Gear Drive
 100% Mixing Drum
 Locking-Tilting Device
 All-Metal Construction
 Low Price
 "Remmel Policy Protects"

REMMEL MFG. CO., KEWASKUM, WIS.



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Portable:—
 take it to the job!

Weight 80 lbs.

Will saw 2 inch Pine at 2 1/2 feet per minute—2 inch Maple at 1 1/2 feet per minute

Made by
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Send for Bulletin No. 30-W



The Facilities of a Mill-Room Combined in ONE Machine

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 Grand Rapids, Michigan



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Man'd by **CAMPBELL MACHINE CO., INC., 39 Hayward St., P.O. Atlantic, Mass.**



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THE **RACINE DUPLEX BANDSAW** is not only the best machine built for wood cutting; it becomes a metal-cutting machine simply by shifting one lever. Cuts iron, brass, hard-steel, everything—quickly, accurately, economically.

Built Just Like Finest Machine Tools

Real equipment far superior to ordinary. Has variable speeds. Ball bearing mounted wheels. Can be operated from electric light socket anywhere. *Ideal for contractors.* Write for full descriptive bulletin.

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 Standard the World Over



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This is the most useful machine ever used for mitering mouldings. It cuts a perfect mitre; no guess work.

Has adjustable jib to compensate for wear

Cuts up to
2½ inch.

"Equipped with Automatic Spring Back Handle."



\$25

F. O. B. New York
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Foot Power Model—\$55.00
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Write for our complete
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LOU MARKWELL CO., 174 FRANKLIN ST., NEW YORK
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Wire Guards



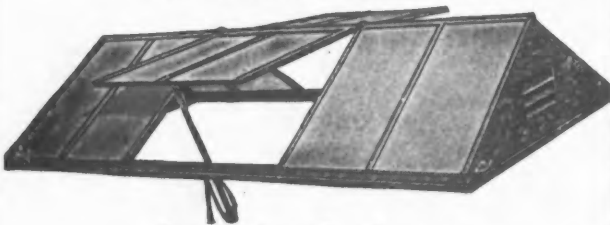
for thief protection
and to
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on Wire Partitions,
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and all types of -
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Type G. P. 2—uses Rope Operator

Venta-Lights are skylights whose sash open upward. They are the most efficient roof ventilators made. No operation cost. Easily erected by anyone. Write for Bulletin C-C 46.

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1832
ROCHESTER N.Y.

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91 Years Successful Experience
Guarantees D. R. Barton Tools

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Machine Knives for
planer, jointer and
paper. Edged tools
for manual train-
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carpenter.

Manufactured by
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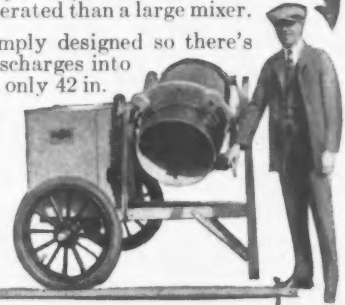
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Mixes 3½ cu. ft. per batch. Simply designed so there's practically no upkeep cost. Discharges into wheelbarrow. Shoveling height only 42 in. All-steel frame gives strength, compactness and light weight. New rubber tire trailer type is popular with contractors. Furnished on skids, if preferred.

WRITE TODAY for full details on complete line of 19 outfits, priced from \$14.20 to \$197.50. Send NOW!

The Sheldon Mfg. Co., Inc.

Box 1005, Nehawka, Neb.



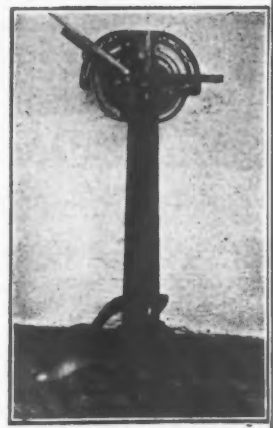
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Is a handy machine for speeding up your production in the shop. This machine will save you much time and money in making

Divided Light, Fancy Sash,
French Doors, Screens,
AND OTHER LIKE PRODUCTS

We will gladly send you circulars and detailed information. Write for it at once.

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BRADLEY ILLINOIS



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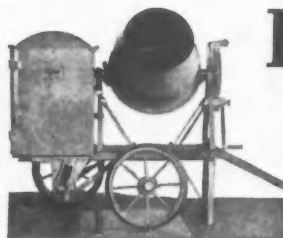
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They can be erected quickly by unskilled labor.

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MILWAUKEE WISCONSIN



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\$210.00

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A ½ Bag Trailer

With Spring Hung Axle, Roller Bearing Wheels and Solid Rubber Tires including 2 horsepower gasoline engine. Write for Catalogue. Other mixers from 1 to 3 bag capacity.

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Powerful
Heaters for
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Hot Air Fur-
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Unexcelled
for combina-
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and hot water
heating.

CHAMPION

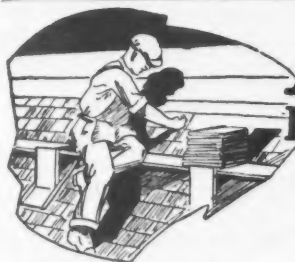
Auxiliary Boilers are positive fuel economizers. They are placed between fire and flue and absorb that heat that might otherwise get away before it has done its work. Rooms which heretofore could not be heated are very easily reached by Champion Auxiliary Boilers. Our system is better explained in a booklet we have prepared. It is yours for the asking.

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MELBYE BROS. COMPANY

1210 Webster Ave.

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AJAX

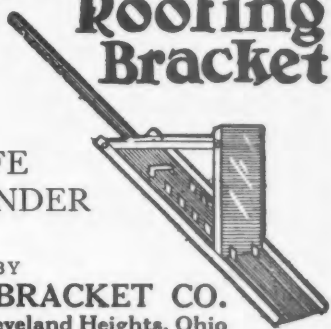
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THE QUICKEST
EVER AND AS SAFE
AS THE EARTH UNDER
YOUR FEET.

MANUFACTURED BY

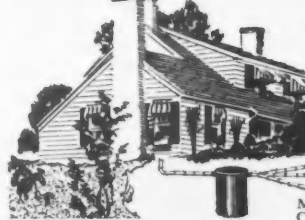
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The Kaustine Super-Septic Tank is replacing disease-breeding cesspools. Requires practically no attention. Operates without cost. Easily installed, cannot get out of order. Meets sanitation standards of Health Experts.



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Write for low prices and Booklet No. 204 describing installations. Plumber's name appreciated.

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Sold and Installed by
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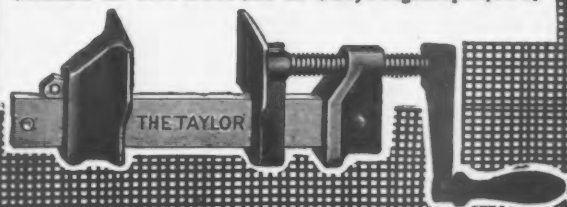
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CLAMPS An Investment Not An Expense

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Our line is complete, quality
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LA PLANT-CHOATE MFG. CO.

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Investigate The Superior-Super!

It is built to handle all woodworking operations on the job or in the shop.

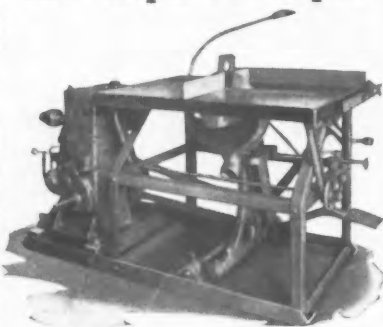
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Boring Sanding

It is easily transported from job to job. Can be used on any job anywhere, for it is gasoline engine driven. The Superior-Super Woodworker is the product of an old well established manufacturer of woodworking machines.

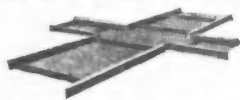
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Why buy lumber and pay carpenters' wages year after year, when

Heltzel Steel Sidewalk Forms will last you 10, 12 or 15 years, and any unskilled laborer can set them? They save time, save money, and give a better job.

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It costs less to sand with the BARKER SANDER than

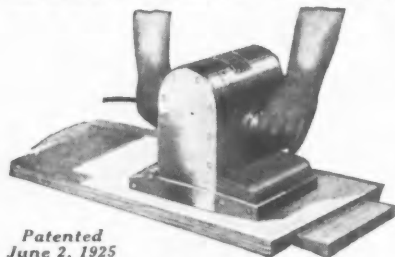
by hand or large machine

Let us prove it

Metal retainer catches 99% of dust

Patented June 2, 1925

R. L. BARKER & CO.
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JOHNSON PLUMBING SUPPLY CO.

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because it is manufactured specifically to do so. Specially selected cotton yarns, woven to resist wear are chemically treated so as to resist mildew, and the rotting actions of the elements.

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It costs less to sand with the BARKER SANDER than

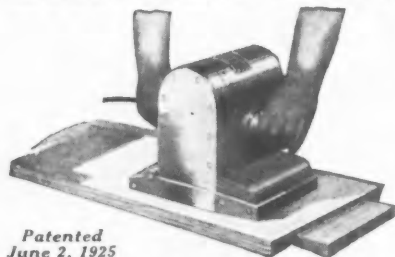
by hand or large machine

Let us prove it

Metal retainer catches 99% of dust

Patented June 2, 1925

R. L. BARKER & CO.
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We make two kinds of Galvanized Shingles as well as painted tin shingles

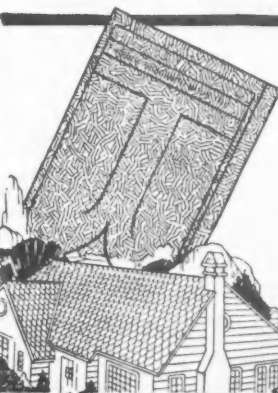
Cortright Galvanized Shingles come either Hand Dipped or stamped from sheets already galvanized.

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Cortright Metal Roofing Company

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—More desirable because of being strictly modern.

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23	22	21	20	19
LENGTH OF COMMON OF HIP OR	RAFTER VALLEY	PER FOOT	RUN	PER FOOT
REFERENCE IN LENGTH OF JACKS	OF JACKS	16 INCHES	CENTERS	RUN
FIGURES	GIVING	SIDE CUT	OF JACKS	VALLEY
		CUT OF	OF HIP OR	RAFTER
			SHEATHING	OR HIP
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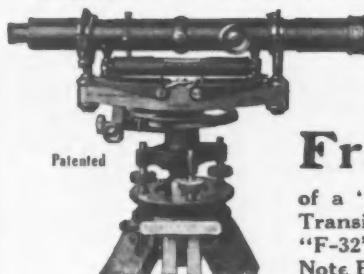
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40% CHEAPER

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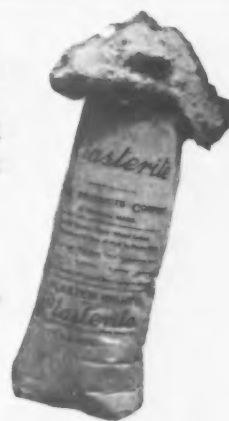
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STEEL
IRONING
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CABINET

Fits into any 2" tile or Pyrobar wall, or any 2" x 3" or 2" x 4" stud wall.

Saves from \$1 to \$5 over the cost of an ordinary wooden cabinet, installed, trimmed and finished. Reaches building complete with six screws, no trimming required.

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Rustproof
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Shipped Knockdown with each piece marked, easy to handle.
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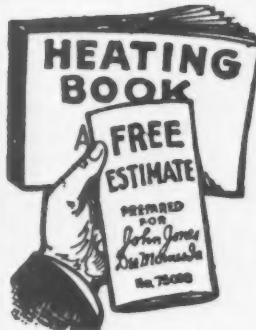
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Write for booklet and prices.
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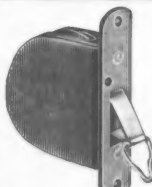



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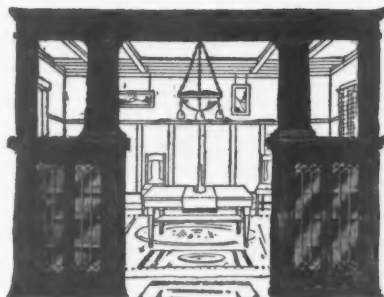
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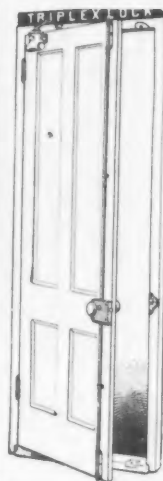
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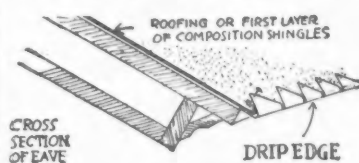
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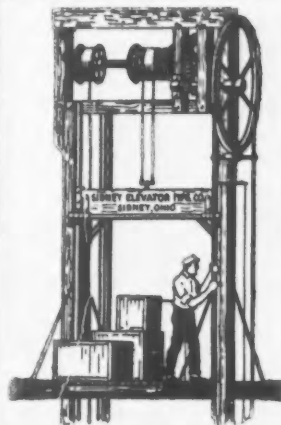
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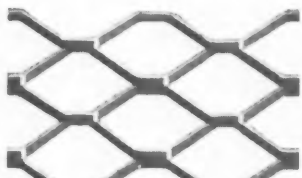
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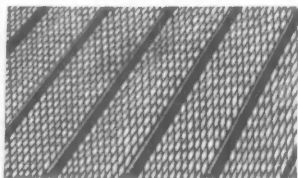


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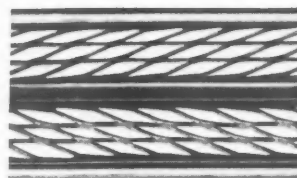
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