

Price, 20 cents

WCH

1

OCTOBER, 1907

4

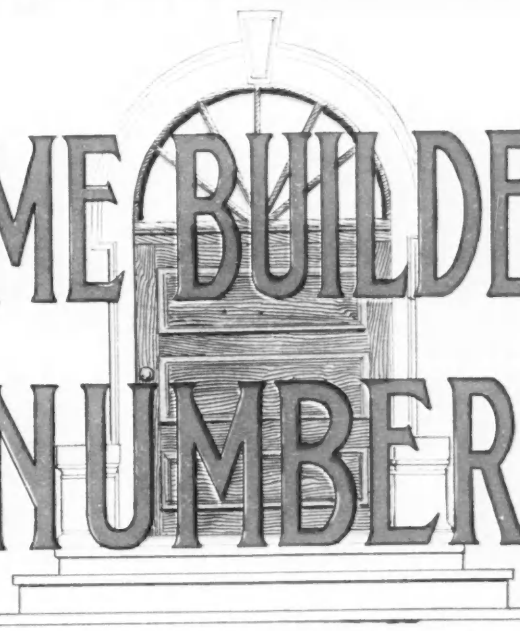
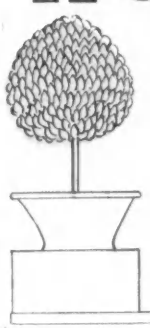
AMERICAN CARPENTER AND BUILDER



641
132
19

THE WORLD'S GREATEST BUILDING PAPER

HOME BUILDERS NUMBER



THI
A25

They're Easy to Hang

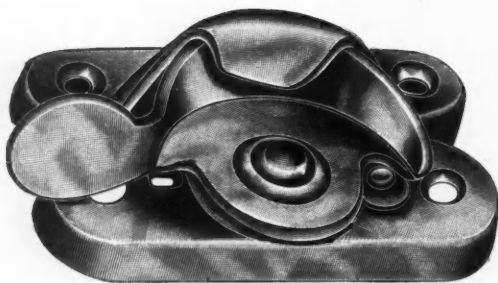


No 82

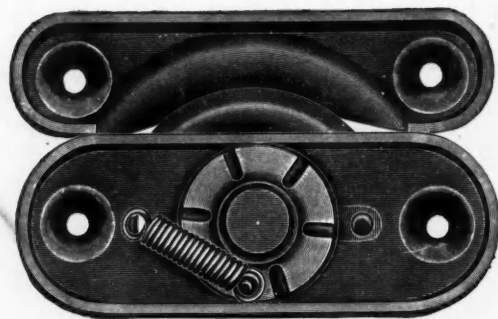
Wherein the **"Silent" Parlor Door Hangers** Excel all Others

The flexible Hinge Joint permits the Hanger to adjust itself to the top of the door, whether square or not. No planing necessary. Unlike others, the "SILENT" PARLOR DOOR HANGER supports the full weight of the door on the adjusting screw, which fits into a THREADED STEEL SPRING BURR and will not work loose, permitting the door to drop down. Easily adjusted. Wheel has vulcanized fibre tread and is supplied with roller bearings. Each set packed with screws, stops and guides.

"All-Steel" Sash Lock



No. 600—Cut full size



Bottom View of Sash Lock

Made entirely of cold-rolled steel. Takes extra fine finish. Coil spring made of finest grade steel piano wire. Owing to its simple construction, friction is reduced to the minimum and the rigidity of the lock retained. MOUNTED MODELS SENT FREE OF CHARGE ON REQUEST.

National Manufacturing Co.

Sterling, Illinois

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



Let the STORK deliver you a LITTLE SHAVER Floor Scraper For one day's FREE Trial.

30

Contractors' Supply & Equipment Co.
Chicago, Ill.

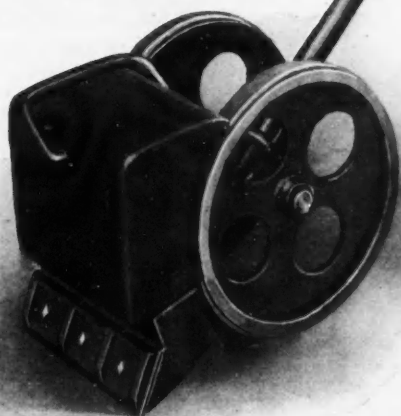
Milwaukee, Wis.

Gentlemen:

The "LITTLE SHAVER" floor scraper we bought from you some weeks ago has given more than satisfaction. We had some sixteen old bars which did not have attention for want of scraping and the way the "LITTLE SHAVER" did the job was remarkable. If the machine can finish saloon bar tops, it ought to be a winner on floors. We heartily recommend it.

Very truly yours,

GUTSCH BREWING CO.



CUT OFF, SIGN YOUR DEALER'S NAME, AND MAIL.

Contractors' Supply & Equipment Co

Gentlemen:

Please ship one of your "LITTLE SHAVER" floor scrapers by express for one day's free trial, money to be paid to express company, and money to be returned to us if the machine does not prove satisfactory.

Dealer's name

Name

City

Will do the Work of Four Men.

Contractors' Supply and Equipment Co.

Old Colony Bldg.,

CHICAGO, U. S. A.

M.P.W. Jr., 1917

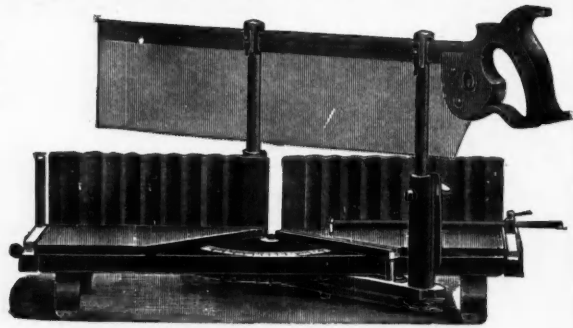
Goodell Mitre Box

MADE ENTIRELY OF STEEL

No More Breaking & First in Quality and Improvements

Automatic stops for holding up saw. Corrugated backs. Graduated. Gauge for duplicate cuts and many other features

If you want the best you will take no other
Send for Circular C



GOODSELL MANUFACTURING COMPANY, Greenfield, Mass.

BRACE TOOLS THAT LAST



Get your dealer to order a few

Manufactured by
BRAUNSDORF MUELLER CO.
ELIZABETH, N. J.

PARQUET FLOORS AND WOOD CARPETS



We are the largest, the oldest and the **ONLY** firm in Chicago who manufacture their own product in hardwood floors.

Our business is exclusively floors. We have a variety consisting of hundreds of designs. Our floors are suitable for use in any class of houses and in all rooms.

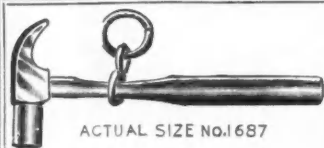
We give reliable men the exclusive sale of our line in their community. Write for terms.

Hardwood floors are sanitary and are recommended by the best physicians for health. They are easily kept clean and do not accumulate germs.

Our "Excelsior" Floor Finish and "Dunfee" Floor Wax are the best products to be obtained in this line. We handle all preparations pertaining to floors.

Send for our free booklet "Pointers" on the care of Parquet and Hardwood floors. Also send for **Free Catalog.**

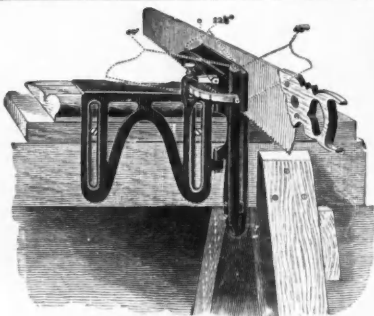
J. Dunfee & Co.,
100 Franklin St., Cor. Washington
CHICAGO



ACTUAL SIZE No. 1687
20c for sample by mail



20c for sample by mail

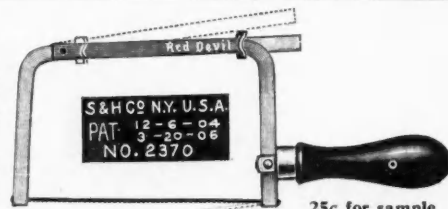


\$1.75 for sample by express

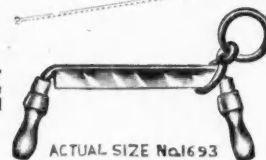
Smith & Hemenway Co.
108 Duane Street, New York City



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ACTUAL SIZE No. 1693
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"Yankee Tools"

The newest, cleverest and most satisfactory in use, and the first to be offered at so reasonable a price that every up-to-date mechanic could buy tools of their quality and character. Other tools are very good tools, but "Yankee" tools are better. "Yankee" tools are sold by all leading dealers in tools and hardware everywhere. Ask your dealer to see them.

Our "Yankee" Tool Book tells all about these and some others, and is mailed free on application to—



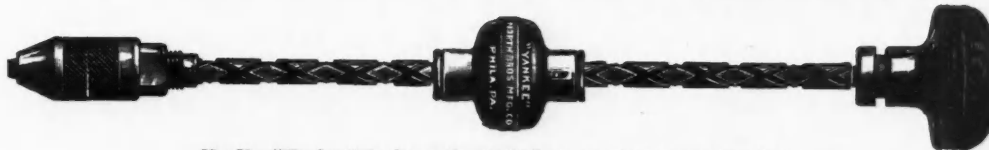
No. 15. "Yankee" Ratchet Screw Driver, with Finger Turn on Blade.



No. 30. "Yankee" Spiral-Ratchet Screw Driver, Right and Left Hand.



No. 44. "Yankee" Automatic Drill, Right Drill Points in Handle, and Adjustable Tension to Spring.



No. 50. "Yankee" Reciprocating Drill for Iron, Steel, Brass, Wood, etc.

North Bros. Mfg. Co.

PHILADELPHIA, PA.

"FORSTNER" BRACE AND MACHINE BITS

FOR FINE CARPENTER, CABINET AND PATTERN WORK



Specially Adapted for Hardwood Working

leaving a true polished surface. It is preferable and more expeditious than chisel, gouge, scroll saw, or lathe tool combined, for core boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding and mortising, etc.

The Forstner Labor-Saving Auger Bit, unlike other bits, is guided by its Circular Rim instead of its centre; consequently it will bore any arc of a circle and can be guided in any direction regardless of grain or knots,

Manufactured by

THE PROGRESSIVE MFG. CO., Torrington, Conn.

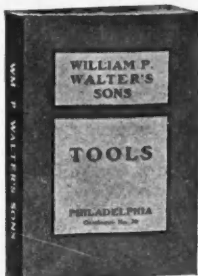
Enquire of your Hardware Dealers or write us direct.

Supplied in sets.

Write for Catalogue.

To thoroughly introduce this high grade tool among carpenters, pattern makers and others, we will mail to any reader of the American Carpenter and Builder upon receipt of 50 cents any bit we make from one-quarter inch to one inch in size.

OUR LATEST CATALOGUE No. 20.



Handsomely printed on heavy paper, containing 450 pages, 2000 illustrations, including a full line of Woodworking and Metalworking Tools, Foot Power Machinery, Lathes, etc. This is the largest and most complete catalogue we have ever issued, being a valuable hand book for any mechanic. Sent on receipt of 20 cents postage.

WM. P. WALTER'S SONS
Tool Headquarters
1233 Market Street, PHILADELPHIA

(Please mention the American Carpenter and Builder)

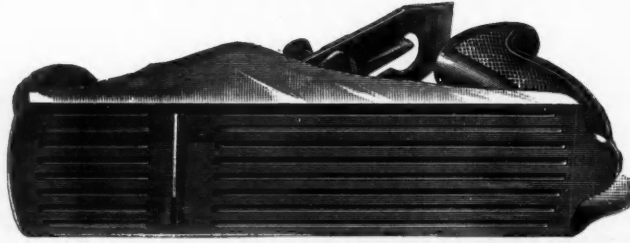
Smooth, tough "leads" are the result of skilful and careful grinding, working and firing. It is this care and skill that make Dixon's Carpenter Pencils standard. Send 16c for generous sample lot 183 J.

JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, N. J.

FAR AHEAD for Smooth, easy work and holding edge will be YOUR VERDICT ON TRYING
CHAPLIN'S IMPROVED PLANES

Patented Feb. 14, 1899; Oct. 30
 1900; Dec. 24 1902

We invite the
 Severest
 Comparative
 Tests



We want you to have a copy of
 our booklet

"A 'Plane' Talk About
 a Good Plane!"

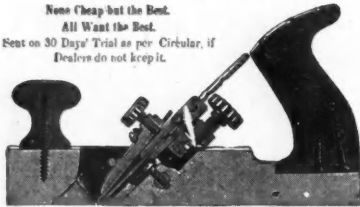
We want you to have a copy,
 for it is a booklet you really need
 in your business.
 We'll gladly send you this
 booklet with our compliments,
 promptly upon receipt of your
 request.

Tower & Lyon Company, 95 Chambers Street, New York

SELF-SETTING PLANE

THE BEST IS THE CHEAPEST.

None Cheap but the Best.
 All Want the Best.
 Sent on 30 Days' Trial as per Circular, if
 Dealers do not keep it.



SECTIONAL VIEW—showing ADJUSTABLE IRON THROAT.

Costs nothing to
 try it, see below



Send \$3.00 and get one
 on trial as below.

So simple any inexperienced person can use it

This SELF-SETTING PLANE, made in Vinland, N. J., is the ONLY SELF-SETTING PLANE—no other SELF-SETTING PLANE was ever made.

It differs from every other plane BECAUSE—IT IS THE—
 ONLY PLANE WITH an ADJUSTABLE IRON THROAT.

" an iron that moves up and down, without moving the cap.
 " a cap that don't move up and down when the cut iron does.
 " a cap that is set when it is dropped back into its place.
 " an iron that is set by dropping into its place in the throat.
 " a CAP & IRON that can't go back ONLY IN THEIR RIGHT PLACE.
 " a HARDENED STEEL CAP that is SHARP like a plane iron.
 " its handle screwed to its round iron base.
 " its stock saturated with hot linseed oil when made.
 " that the cap and cutter can be removed and RESET IN FIVE SECONDS.
 " the cap and cutter are not fastened together.
 " you don't have to spend months to learn to set properly.
 " a girl, woman, boy or man, without experience, can set.
 " we know of that is set and ready to use when it leaves the factory.
 " is SELF-SETTING.
 " every man before using says, "it costs too much."
 " every man after using says, "IT IS CHEAP AT TWICE ITS COST."
 " we know of that you can get on 30 days' trial and after using it a month return it without
 expense, and get back all the money it cost you.

We send SELF-SETTING PLANES, where not sold, on 30 DAYS' TRIAL, EXPRESS PREPAID, on receipt of list price.
 IF RETURNED to us AT OUR EXPENSE, within 30 days of receipt, we will return you the entire amount you sent us and the
 trial will cost you absolutely nothing, except your trouble.

SEND \$3.00 FOR A SELF-SETTING PLANE ON TRIAL.

For other particulars and large illustration see this magazine for January, 1907, pages 1202 and 1211, and June, page 353.

GAGE TOOL CO., Vinland, N. J.

Ask For Millers Falls Co's BIT BRACES

There are no other
 braces made which
 match them in merit
 and beauty of finish.
 Made in great variety
 of sizes and grades.



Our name appears
 on all genuine goods.
 Look for it before you
 buy.

Send for Catalog C
 showing our full line.

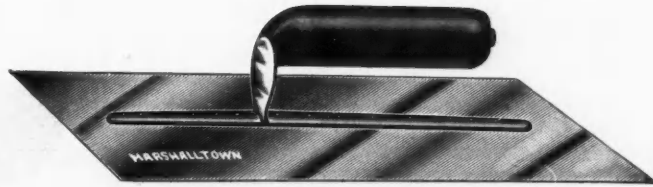
**Millers Falls
 Company**

28 Warren Street
 New York, N. Y., U. S. A.

The Marshalltown Trowels

Steel Sidewalk
Edgers and
Bronze Groovers,
All Sizes

BEST MADE



Finishing and
Browning
Trowels, all sizes
and gauges

Carpenters' Wrecking Bar



Made of the best quality tool steel, 3/4 in. Octagon, 30 in. long.

Will pull any size nail.
Just the thing for the mechanic.

Brick Hammers
Brick Chisels
Cork Floats
Canvas Tool Bags
Beading Tools

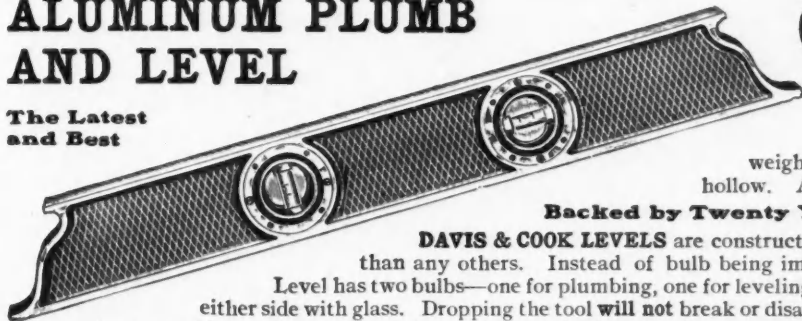
Marshalltown Trowel Co.

Marshalltown, Iowa.

U. S. A.

ALUMINUM PLUMB AND LEVEL

The Latest
and Best



Buy of Your Dealer
Or Write Us Direct

Our Aluminum Levels are one-third the weight of iron and lighter than wood. They are cast hollow. Are very strong and not affected by climate.

Backed by Twenty Years' Success in Making Levels

DAVIS & COOK LEVELS are constructed on a better principle and of better materials than any others. Instead of bulb being imbedded in the top of tool, the Davis & Cook

Level has two bulbs—one for plumbing, one for leveling—set in solid; unbreakable frames, faced on either side with glass. Dropping the tool will not break or disarrange the bulbs. Can see them 10 feet away in any position, under or over. Buy a Davis & Cook and get away from the loss of time and trouble which is always the case in using the old style bulb-in-top levels.

Booklet on Levels for the Asking

Ask for
DAVIS & COOK LEVELS

Davis & Cook, Makers

13 High Street
WATERTOWN, N. Y.



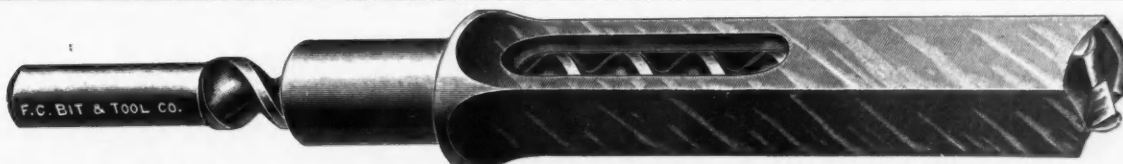
The American Combined Level and Grade Finder SOMETHING ALTOGETHER NEW

All progressive and up-to-date Mechanics, Machinists, Carpenters, Bricklayers, Masons, Plumbers, Millwrights, Road Supervisors, Track Foremen, Surveyors, Architects, Civil Engineers and Others will find this an Indispensable Invention.

A Civil Engineer that you may have with you at all times. The most practicable, durable and convenient instrument of the day.

The cost of the instrument is so low that it is within the reach of all. Write for book of testimonials. Agents wanted on liberal terms. Apply to EDWARD HELB, RAILROAD, PA., MANUFACTURER

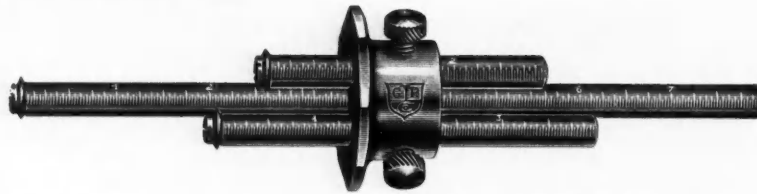
Write
for
Catalogue G



We Manufacture WOOD BORING and HOLLOW MORTISING TOOLS
FORESTCITY BIT AND TOOL COMPANY ROCKFORD, ILLINOIS-

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

ROLLER GAUGES



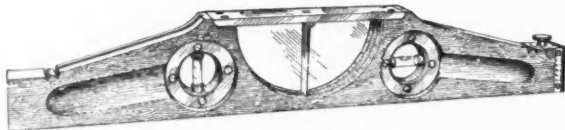
These tools need no introduction, every carpenter knows how indispensable they are. We offer them in three styles;

No. 220 with one beam, 8 inches long.
No. 221 with two beams, 8 and 4 inches long.
No. 222 with three beams, 8, 4 and 3 inches long.

The graduations are carefully and accurately put on. Each tool protected with a heavy nickel plate. Ask your dealer about them.

GOODELL-PRATT COMPANY,
GREENFIELD, MASS., U. S. A.

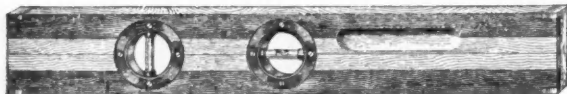
Hight's Automatic Level and Grade Finder



Patent Applied For

I am pleased to assure you that this level is not equalled as a level, plumb or a grade finder—it almost talks—all you have to do is to apply it to your work and it will show you at a glance exactly where you are at, either in degrees, inches rise per foot, or in per cent.

Spirit Level and Plumb



The above cut represents my spirit level and plumb. It is easily adjusted and firmly held in place. A new vial can easily be placed and adjusted. These levels are made especially for carpenters and that class of workmen. They are all union made and bear the label.

If your dealer does not carry them, send us the name of your dealer.

A. W. HIGHT,

P. O. Box 322

TOLEDO, OHIO

STANLEY

CONCEALED RATCHET BRACE.

No projections to injure the hands.



We make a complete line of Bit Braces

Send
For
Catalogue
No. 34.

Sold by all Hardware Dealers.

Stanley Rule & Level Co.

New Britain, Conn., U. S. A.



ATKINS SILVER STEEL SAWS

are just as good as they look to be.

Finest material, finest workmanship, finest finish. They run easier, cut faster and hold their edge longer than any other saw. If your dealer does not have them he can get them for you.

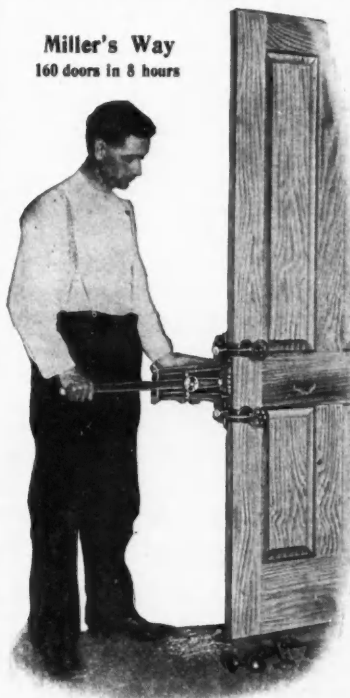
E. C. ATKINS & CO., Inc.,

The Silver Steel Saw People. Home Office and Factory, Indianapolis.

BRANCHES: Atlanta, Chicago, Memphis, Minneapolis, New Orleans, New York City, San Francisco, Portland, Seattle, Toronto.

MILLER LOCK MORTISER

Miller's Way
160 doors in 8 hours



Will cut an opening in three minutes for a mortise lock in hard, soft, cross-grained or end wood, parallel with sides of door.

The labor is performed with slight exertion. The care is practically none as the tool does not get out of order.

**Practical, Durable,
Labor Saving**

The adjustment is done in a moment's time for the different sizes.

The cutters are five in number and cover locks from 1/2 in. to 1 1/8 in. thick.

It cuts all the different lengths of openings for locks.

Thin doors are handled as easily as thick doors.

Brains needed are just common, ordinary brains.

It does not mar the door.

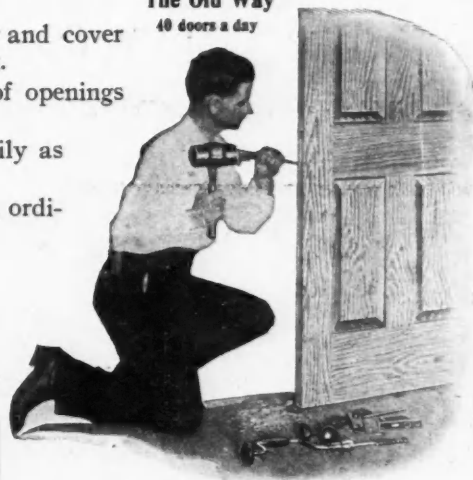
WHAT BUILDERS SAY

"We saved just \$65 in four weeks."

"It paid for itself in two days."

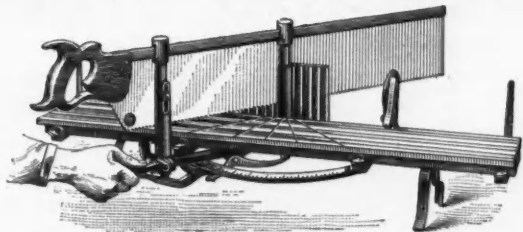
"The more I use it, the better I like it."

The Old Way
40 doors a day



SENT ON TRIAL

RIVERSIDE, CAL. **A. W. MILLER MFG. CO.**, MAIN OFFICE CINCINNATI, O.
Market and Louise St., Winnipeg, Man.; 17-21 Temperance St., Toronto, Ont.; 55 Robertson St., Glasgow, Scotland; Balfour House, Finsbury Pavement, London, E. C.

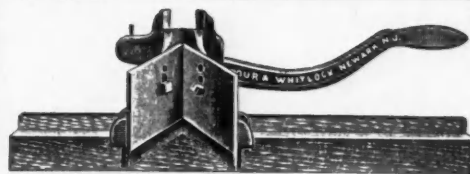


Nicholls Common Sense Miter Box

We have endeavored to place on the market a Miter Box suitable for practical work, and having tested it thoroughly, we are satisfied we have succeeded in doing so, and are placing this Miter Box on the market warranted in every respect.

Nicholls Manufacturing Co. :: Ottumwa, Iowa

The S. & W. MITRE



Hand or
Foot
Power

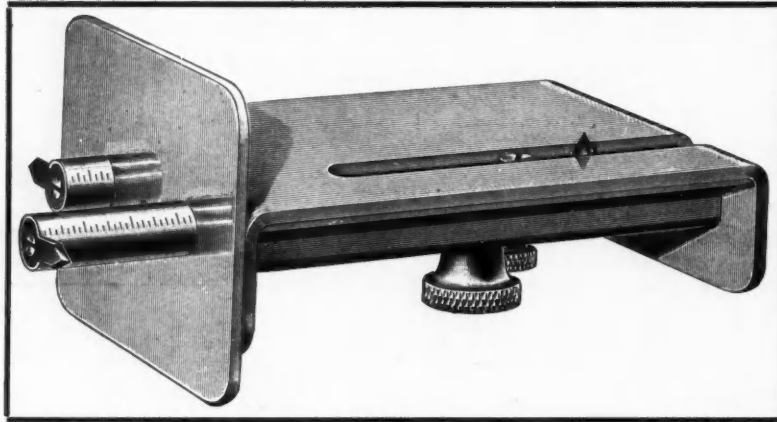
2 1/2, 3
and
4 inch
Sizes

GUARANTEED ABSOLUTELY ACCURATE
Write us for particulars

SEYMOUR & WHITLOCK
1 GARDEN ST., NEWARK, N. J.

Combined Gauge and Square

Made of
Pressed
Steel
Full
Nickel
Plated



Notice the
Thin
Double
Cutting
Spurs Tem-
pered Like
a Knife

WE believe the readers of this magazine want the BEST tools made, and this is our reason for offering you this Butt Gauge with Try-Square combined. Just one pointer—the back spur is adjustable by set screw for clearance and paint. Your dealer or ourselves will send you one postpaid for 85 cents.

H. H. MAYHEW CO. = = Shelburne Falls, Mass.



No, Mr. Wideawake, I can't part with this Circular Saw Vise.

It is the Grammes make and you know there is nothing in this world to clamp Circular Saws with while filing them half as good as the

Grammes Circular Saw Filing Vise

Here is the point. It swings on a swivel and on an axis—to any position whatever. That's one of the desirable features not to be had by any other vise on the market.

THREE SIZES—Price each \$7.50. Say what sizes saws you want to file.

L. F. Grammes & Sons
ALLENTOWN, PA.

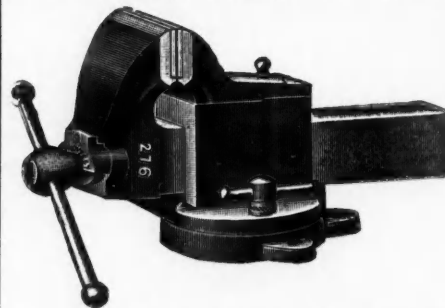


New Starrett Protractor

One of the most useful tools a carpenter ever had. See full description in free Catalogue No. 186. With this tool in your chest you can give away half a dozen or more which it will render back numbers

The L. S. Starrett Co., Athol, Mass., U.S.A.

PARKER VISES



MADE
ESPECIALLY
FOR WOOD
WORKERS.

FOR SALE BY
DEALERS.

SEND FOR
CATALOG.

CHAS. PARKER CO.
MERIDEN, CONN.

IN ALL THE WORLD NONE OTHER LIKE THIS

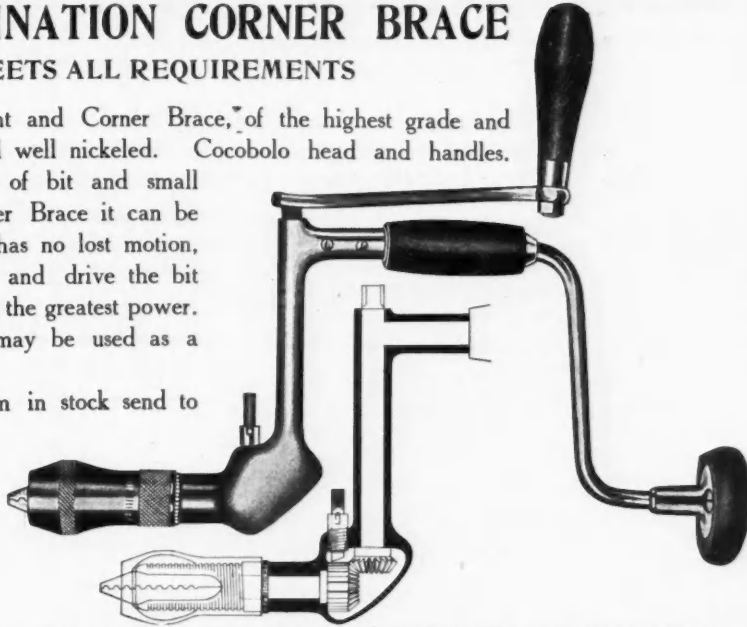
LANCASTER COMBINATION CORNER BRACE

A TOOL THAT MEETS ALL REQUIREMENTS

COMBINATION Ratchet, Straight and Corner Brace, of the highest grade and best finish. Highest polish and well nickeled. Cocobolo head and handles. Ball-bearing head. Holds any size of bit and small size round-shank drill. As a Corner Brace it can be used where others cannot go. It has no lost motion, has a positive drive, will work fast and drive the bit absolutely true at any angle, and with the greatest power.

By removing the handle the tool may be used as a regular ratchet brace.

If your dealer does not carry them in stock send to us direct **\$3.50** and we will deliver it, express charges prepaid. Money back if unsatisfactory.



WRITE FOR CATALOGUE
OF OUR ENTIRE LINE

LANCASTER MACHINE & KNIFE WORKS

918 COURT STREET . . LANCASTER, N. Y.

LUFKIN STEEL TAPES



and RULES

ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY
The Lufkin Rule Co.

Saginaw, Mich., U.S.A.
New York London

For Sale Everywhere.
Send for Catalogue.

TOPP'S ROOF FRAMING TOOL

A PERFECT TOOL

A PERFECT TOOL



And the Only Tool for the Purpose Ever Invented.

Saves from 3 to 24 hours in laying out a single roof. Saves time for the skilled mechanic, and enables the ordinary workman to frame the most difficult roof with absolute certainty.

IT DOES ALL THIS. It is accurate, thus preventing all mistakes. It gives angles for any pitch. It gives length for any rafters. It gives cuts for principals, jacks, hips, valleys and cripples. Write for Circular. Address the manufacturers,

PRICE, \$1.75. See Tool at Your Hardware Dealer.

MANUFACTURED BY
G. A. TOPP & CO
INDIANAPOLIS INDIANA

No. 15
THE TAYLOR

COLUMN CLAMP
No. 47

TAYLOR CLAMPS
Come in All Sizes and Shapes
Send for Catalogue.

No. 16
THE TAYLOR

JAMES L. TAYLOR MFG. CO., Bloomfield, N. J.

BLAKE QUICK ACTING VISE

For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best
Send for Catalogue of all kinds of Vises.

PRENTISS VISE COMPANY, MAKERS
44 Barclay Street, New York, U. S. A.

What Will it Cost

TO equip your house, church, school or store with the **Hess Steel Furnace?** Send us a sketch of the building with the information following, and we will tell you what our charge will be for a complete equipment, fully guaranteed.

Your sketch need not be to a scale; but should clearly indicate the position and sizes of the rooms, measuring inside, from wall to wall.

Show the partitions by single lines; the doors by spaces in the lines; the chimney by a square; stairs by parallel lines; mark folding or sliding doors, if any.

Make a separate sketch for each floor, and mark the size of each room in figures.

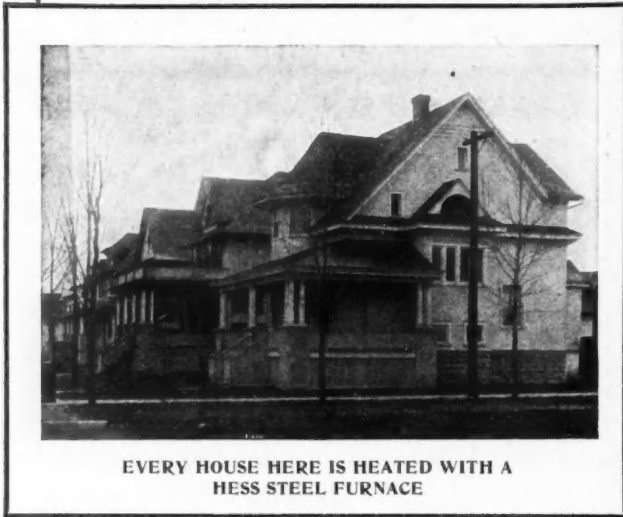
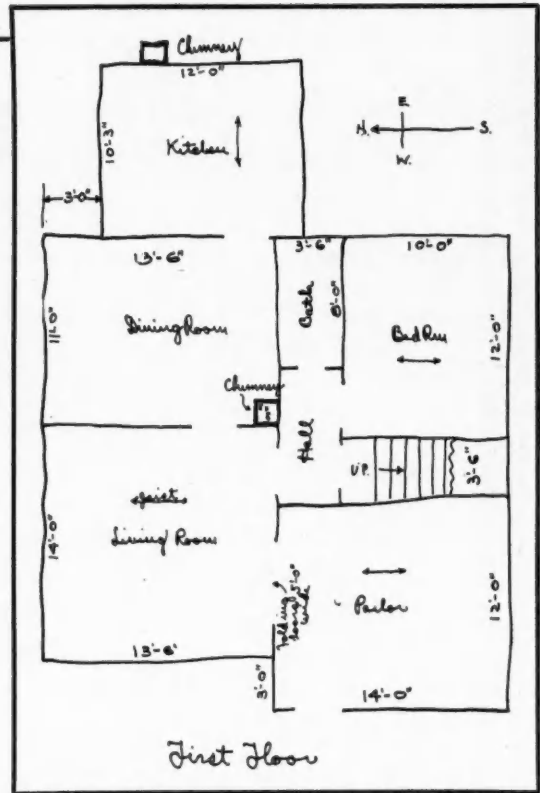
Our sketch on this page shows about what is wanted, though of course, your sketch should be larger.

In the cellar plan indicate the piers, posts and beams, the location of chimneys, fuel supply, and the cellar stairs or entrance. Show the direction of the joists by an arrow, thus \longleftrightarrow

ON THE PLAN PLEASE INDICATE

1. The points of compass.....
2. In what stage of construction is the building?.....
3. Is the upper story a full story or a half story?.....
4. How much below the first story joists do the beams project, if any?.....
5. Height of cellar?.....first story?.....second story?.....
6. If cellar is not 7 feet where furnace will stand, can you make it 7 feet?.....
7. Width of stairways—mark on plan.
8. Width of joists, first story?.....second story?.....
9. Thickness of floors, first story?.....second story?.....
10. Width of studs in partitions?.....
11. Width of studs next to sliding doors?.....
12. What kind of fuel will you use?.....
13. Is the cellar ceiling plastered?.....
14. Width of doorway through which furnace must pass?.....
15. If church, school or store, show position and width of aisles?.....
16. Are any pipes or registers now in the house, if so show sizes and positions?.....

Give Us This Information and we will make a plan to a scale, showing just how we would heat your house with our furnace, what size to use, where to place it, what size of pipes and register to use, and where to put them; how to provide air supply, and we will send you our estimate of cost, which will include everything, freight prepaid by us, and success guaranteed.



EVERY HOUSE HERE IS HEATED WITH A HESS STEEL FURNACE

We Charge Nothing for plan, estimate and information, even if you buy from others. We are glad to have your consideration if you contemplate the purchase of a furnace, and by this careful showing of our method we feel sure we can make your consideration favorable to us.



This
No. 45
STEEL FURNACE
\$49.00

Freight prepaid to any station east of Omaha, north of Ohio River. Five other sizes at proportionate prices.

Hess Warming & Ventilating Company
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CHIEF DRAFTSMAN of engineering firm will instruct and prepare you practically individually for highest salary by few months' practical home work, giving you necessary, actual drafting room experience, not obtainable in schools, colleges or institutes, for competent, high-salaried men. No diplomas, but training until competent. I furnish free positions to my graduates. Complete Highest Grade Drawing Outfit, everything included, with German Silver Set of Tools, value \$13.85, FREE next ten days. Address

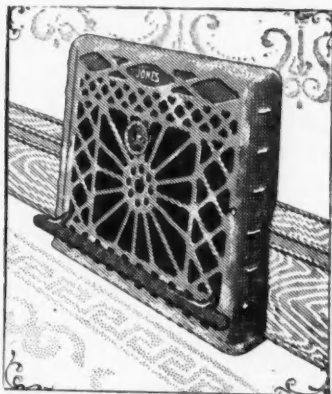
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Unless it is properly Heated and Ventilated

The Jones System



The Jones Side-Wall Register and Ventilator

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Natural Gas Furnace

THE

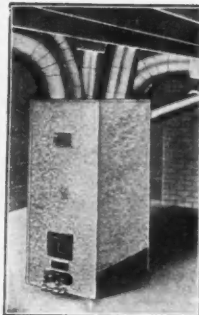
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Will heat any house better and cheaper, and with less labor than any other system

Write for description and prices.

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Sole Manufacturers
Cleveland, Ohio

The "Manest" can also be attached to any coal furnace.



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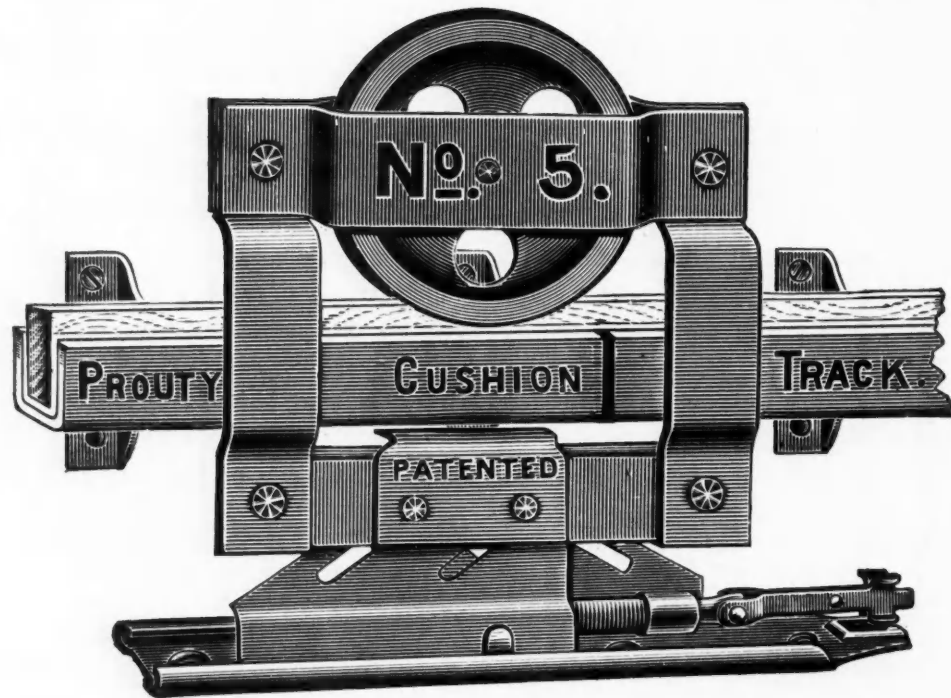
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Of Course! And You Have It Here



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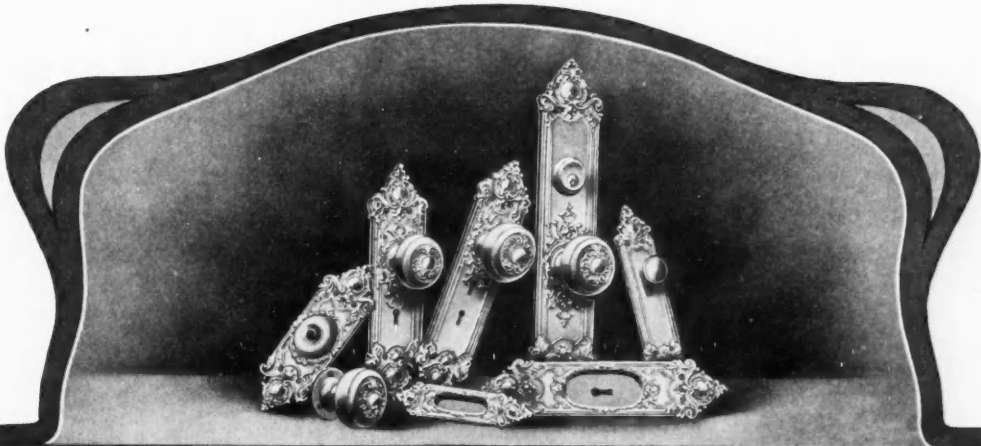
Noiseless Easy Running Positive Adjustment

No others are "just as good," as they try to make you believe.
Insist on having a hanger that is guaranteed perfect.

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It Can't Bend

The Bradley "Metal Clasp" Coat and Hat Hook cannot bend, no matter how much weight you hang on it—the metal clasp absolutely prevents it.

Has no wire from top to bottom hook to be in way. A slight fullness at back of lower hook prevents turning after screwed in wall. Made in all finishes.

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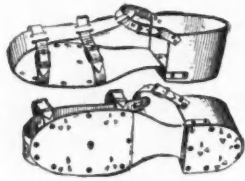
STOWE'S SHINGLING KIT

Consists of

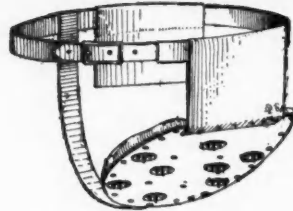
SANDALS

ROOF SADDLE

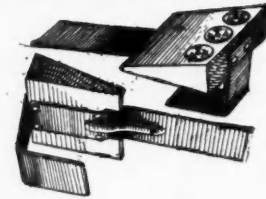
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All builders doing roofing shouldn't be without a pair of these Sandals. They **Eliminate danger** **Protect shoes** **Pay for themselves**



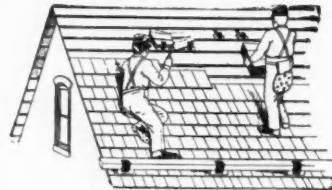
Has nail pocket
Is arranged so the operator may shift from one hip to the other without adjusting, and is a safe and comfortable seat, and saves clothing



Easy to adjust in place
Instantly removed
Does not injure shingle
Holds 2x4 securely
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We Want Good Live Agents in Every Locality

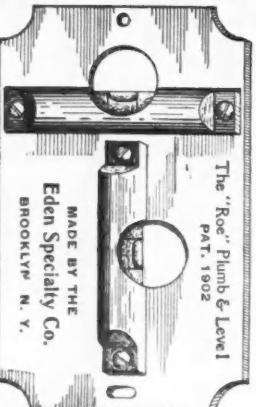
This Shingling Kit is a Boon to Every Builder and is a Ready Seller



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An up-to-date tool; can be easily attached to a plumb-rule or straight-edge at a moment's notice. Very simple to adjust, always held rigidly in place. Just the tool for all mechanics, carpenters, tile-layers, masons, etc. Saves space and weight in tool-chest; our guarantee with every one. For sale at all first class hardware stores, or will be sent by mail on receipt of price.

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Say of

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NORTH. Illinois. "They are the best I have ever seen for the purpose. Those that got them last year think they are fine."

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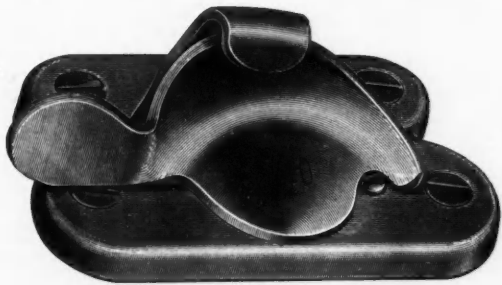
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MADE IN TWO SIZES AND ALL FINISHES BY

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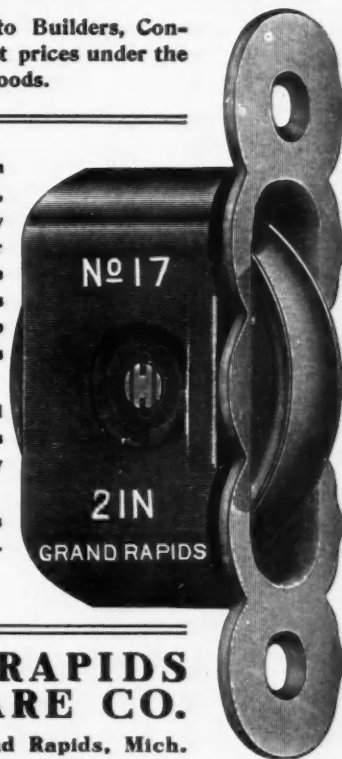
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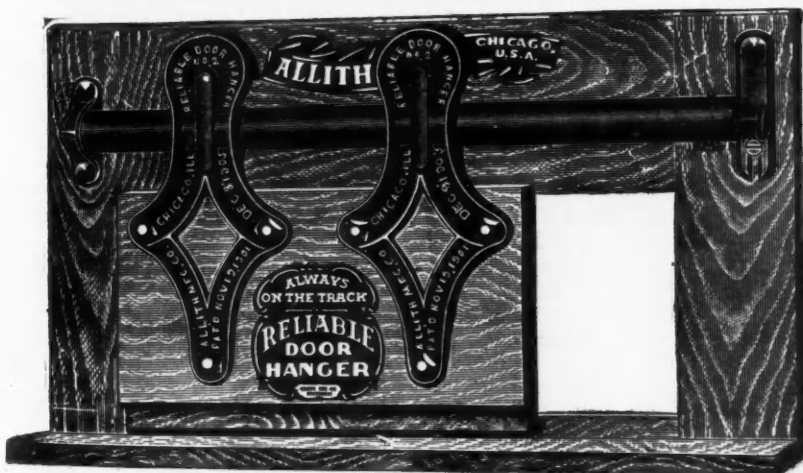
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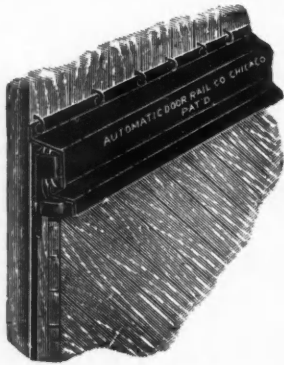
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Impossible to Derail
Easy Running, Great Strength

FOR
BARN, WAREHOUSE and FIRE DOORS

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ALL IN A NUT SHELL

THE SLIDING door problem has been solved at last, and the carpenter, contractor and user has an opportunity to use a Combined Door Rail and Cap, which is absolutely Bird and Storm-proof.

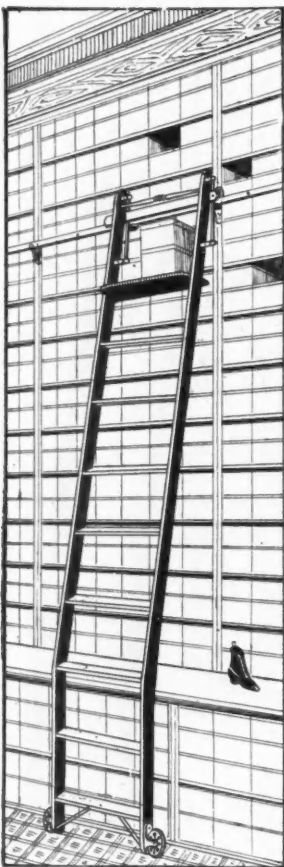
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That may be required.

The manufacturing of rolling step ladders is our special business.

WE MAKE THEM TO ORDER and to fit all kinds of shelving and stores. You have only to send us the measurements and we will do the rest. Ship you the ladders complete and ready to put up, and

Guarantee them in every respect to be satisfactory.

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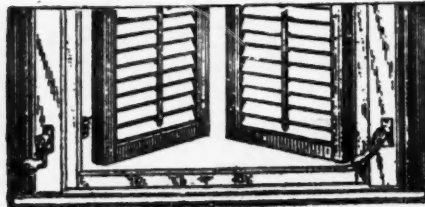
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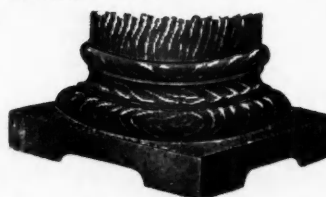
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All Sizes for Round or Square Columns. Thousands in use. Send for Circular "Z."



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FIT ANY WINDOW
\$2.50 Each

Manufactured by
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Makers of the FAMOUS
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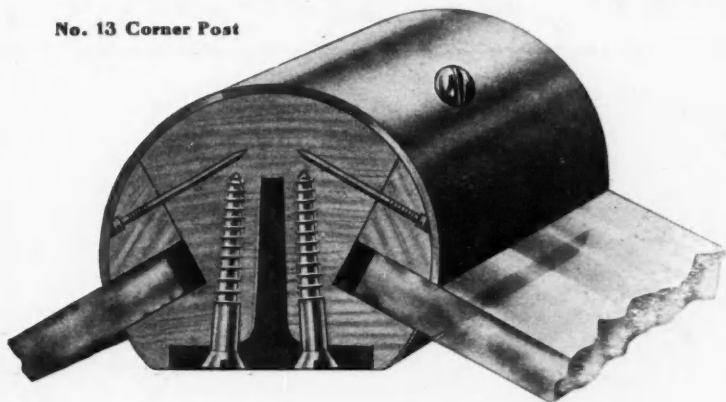


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No. 13 Corner Post



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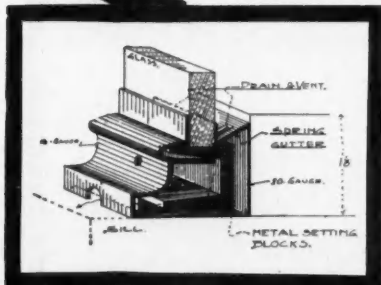
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Columbus, Ohio

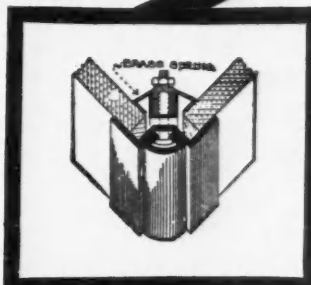
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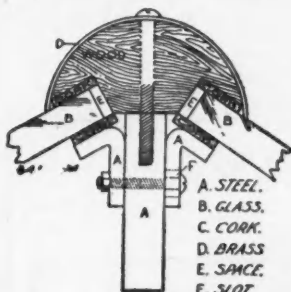


Are right in conception, durable as the building, and architecturally introduce new construction, new methods and new results. A complete all-metal front that is **FIREPROOF, RAINPROOF, FROSTPROOF, ROTPROOF, and RUSTPROOF.**



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KAWNEER MFG. CO. MAIN OFFICE AND FACTORY NILES, MICHIGAN



All Steel Cork Bedded Corner Post

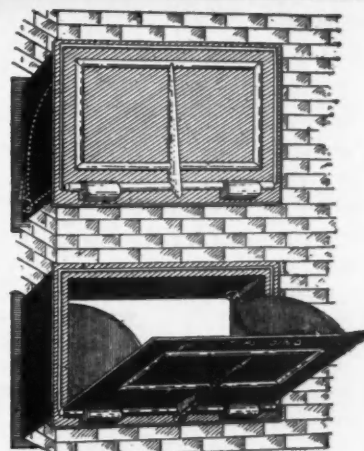
SHULTZ'S

Patent All Steel, Cork Bedded Corner Posts, Mullions and Transom Bars.

Also my new Acme Steel Post and Bars, in which the Glass is Bedded Between Wood.

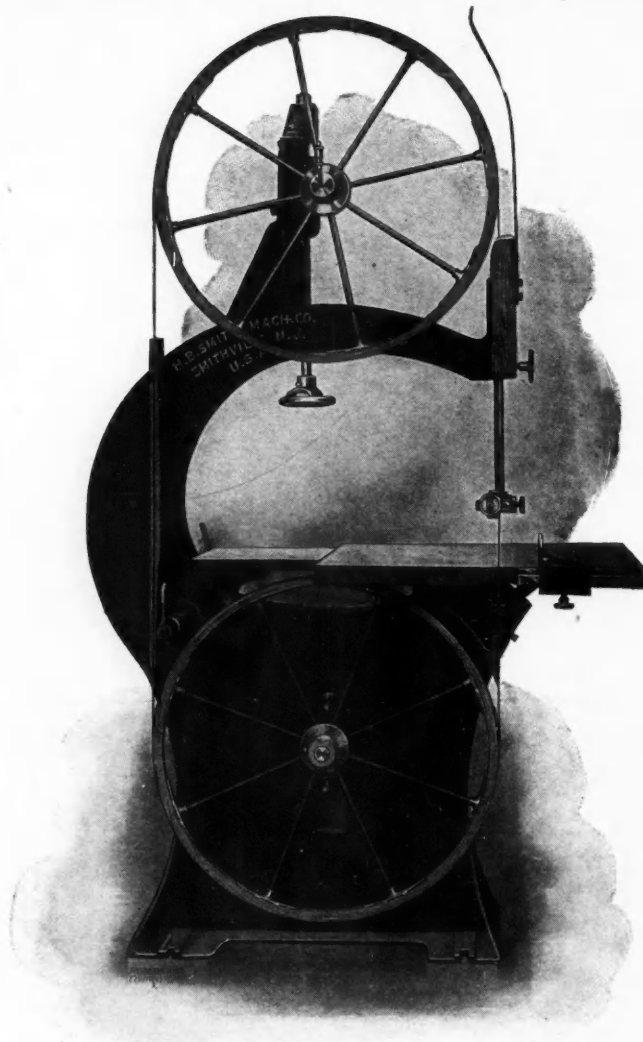
They are the handsomest and strongest bars made. The glass is bedded on both sides, either between Spanish cork or wood, preventing any cracking or crushing of glass. No putty. Are absolutely water and dust proof.
BURGLAR PROOF COAL CHUTE. Locks itself automatically when closed up. Can only be opened from inside. Face of Chute flush with wall. Write

C. H. SHULTZ, Patentee and Manufacturer **St. Joseph, Mo.**
For Cut and Prices on Corner Posts and Coal Chutes.



Coal or Wood Chute

A Band Saw of Quality



The Smith Band Saw

OUR line is so very extensive—including over 150 machines—that it is impossible to attract every reader of this magazine by pictures only. If you have in mind any specific machine that you want to be advised about, write us. We have a great fund of information gathered from an experience of sixty years in manufacturing machinery for the most critical American woodworkers. The name SMITH is a synonym for quality and indicates the highest standard of excellence in design. Write us for circulars completely describing the above illustrated Band Saw.

H. B. SMITH MACHINE CO.

SMITHVILLE, N. J., U. S. A.

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BOSTON

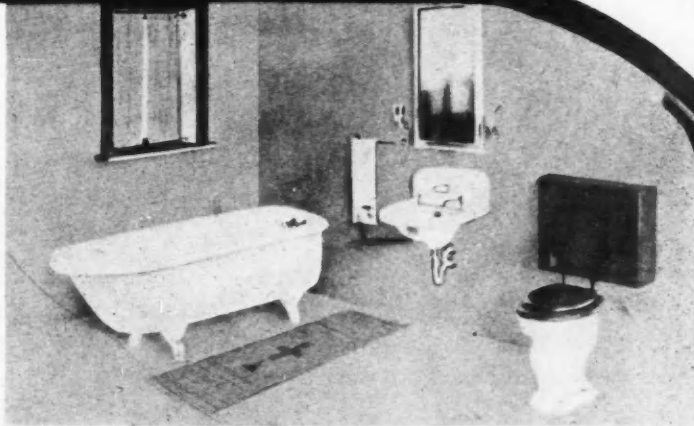
ATLANTA

\$45 BUYS THIS BATH ROOM COMBINATION COMPLETE

No. 5

Everything Connected with this Bath Room Combination is of **GUARANTEED QUALITY**

Made of the best and highest class of material manufactured.



Exact Photo of Bath Room Combination No. 5

The Bath Tub Cast Iron White Porcelain Enameled, with heavy 3-in. roll rim. Bath Tub is 5 feet in length, 30 inches in width, and very graceful in shape. A very comfortable tub in every respect. It is fitted with a brass, nickel plated double Fuller bath cock for hot and cold water; nickel plated connected waste and overflow; nickel plated supply pipes; nickel plated floor flanges; nickel plated chain, plug, etc.

The Lavatory Cast iron, countersunk, white porcelain enameled, heavy roll rim, all in one piece, with 12-inch back; size of basin cocks; nickel plated chain and rubber stopper; nickel plated "S" trap from basin to floor, or "P" trap from basin to wall. Heavy brass nickel plated supply pipes, including nickel plated floor flanges; nickel plated overflow strainer; one pair ornamental iron brackets.

The Closet is of low tank pattern, thoroughly sanitary and modern in construction. It is a washdown syphon jet vitreous porcelain bowl with extra deep seal, especially constructed so that there can be no chance for sewer gas to find its way back through this fixture. It has an extra large jet and the syphonic action is perfect. The seat and cover are made of seasoned quarter sawed oak with high polished finish. The seat is saddle shaped and attaches directly to the bowl with post and nickel plated hinges. The tank is lined with heavy copper and includes a high pressure ball cock and float valve syphon, and has nickel plated push button action. It has 2-inch nickel plated set-off connection between the tank and the bowl, and nickel plated supply pipes from floor to the tank with stop valve.

We can furnish woodwork natural, golden or antique oak. In ordering, state preference as to finish. Please note that we GUARANTEE the QUALITY to be the best and highest class of material manufactured. If 5 1/2 foot Bath Tub is desired add \$1.50.

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We can furnish anything in the Plumbing Line.

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PLUMBERS' SUPPLIES AT WHOLESALE



If you need anything in my line, and wish to

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20 to 40 Per Cent

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COMPLETE OUTFIT PRICE \$15.00 HAND AND FOOT-POWER MACHINERY

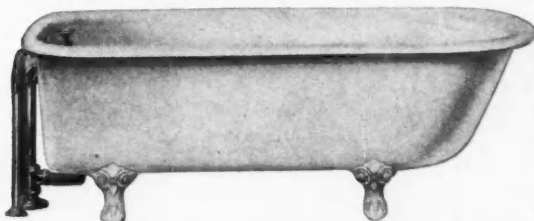
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\$12.50

PLUMBING GOODS

Best Values. Lowest Prices.

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Quarter of a Century at

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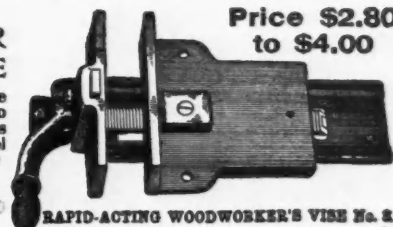
Wood Bar Clamp Fixtures Per Set 50c

OVER 12,000 OF OUR STEEL RACK VISES IN USE

25 doz. Clamp Fixtures bought by one mill last year. We ship on approval to rated firms, and guarantee our goods unconditionally. Write for list of Steel Bar Clamps, Vises, Bench Stops, etc

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Price \$2.80 to \$4.00

RAPID-ACTING WOODWORKER'S VISE No. 2

FOOT, HAND AND POWER
WOOD-WORKING MACHINERY

For Carpenters, Builders, Cabinet-Makers, and
 Other Wood-Workers

BUILT FOR HARD WORK, ACCURATE WORK AND LONG SERVICE



"Victor" Scroll Saw. "Diamond" Mortiser

ONE MAN with one of these machines will do the work of four to six men using hand tools; will do it easier, will do it better.



"Union" Combination Self-Feed-Rip and Cross-Cut Saw.

Enterprising mechanics are quick to see the superior merits of our machines. It will pay you to investigate these advantages.



"Box" Moulder.

WE GUARANTEE each machine to be thoroughly practical and accurate. Machines sent on trial, and if not found entirely satisfactory, may be returned at our expense.



No. 8 "Union" Power Saw.

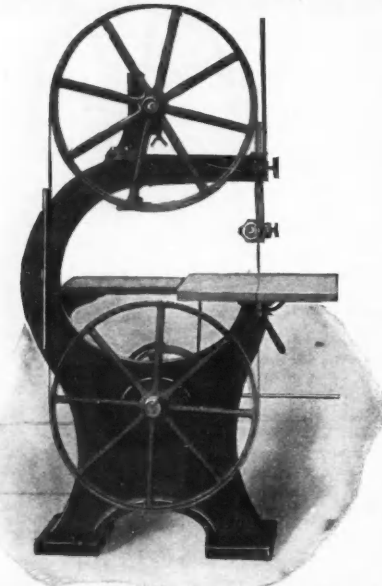
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The Seneca Falls Manufacturing Co.

218 Water Street, Seneca Falls N. Y., U. S. A.



No. 6 "Union" Combination Saw. (96)



The rigid construction and modern design of the new 32-inch

Crescent Band Saw

insure] a machine of the very highest efficiency as a rapid producer of accurate work.

Crescent machines cost less than others of equal merit. They are best because they are strong, durable and practical.

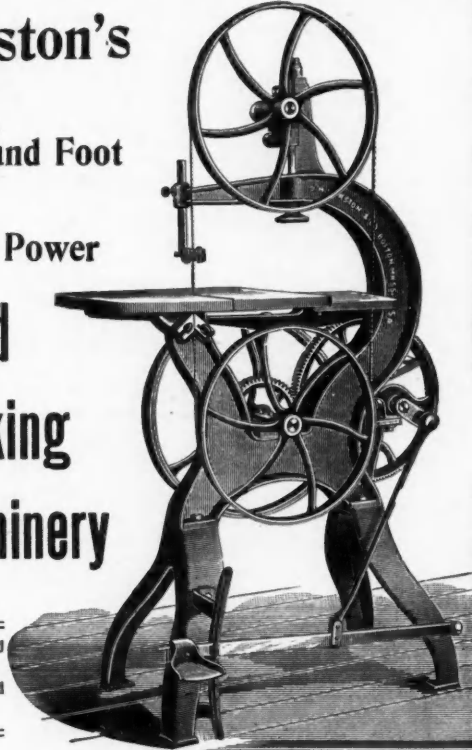
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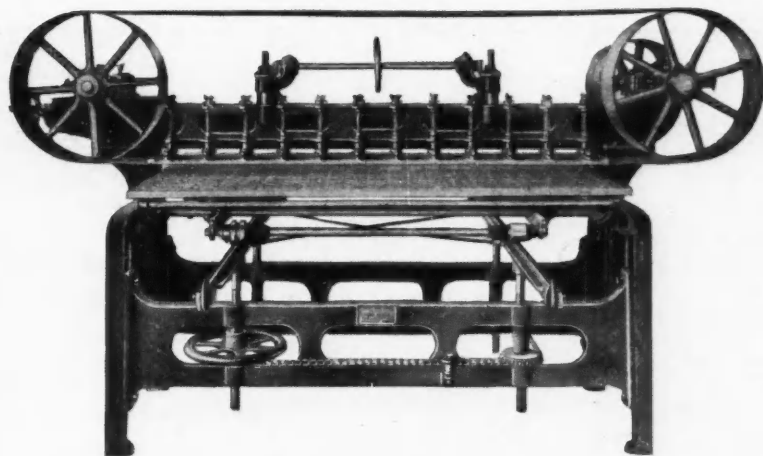
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Patent
 Hand and Foot
 and
 Steam Power
**Wood
 Working
 Machinery**



20-in. Hand and Foot Power Band Saw.

J. M. MARSTON & CO.
 227 Ruggles St., Boston, Mass., U. S. A.



Clemons Belt Sander

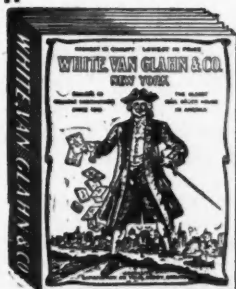
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Produces the finest sanded surface known.
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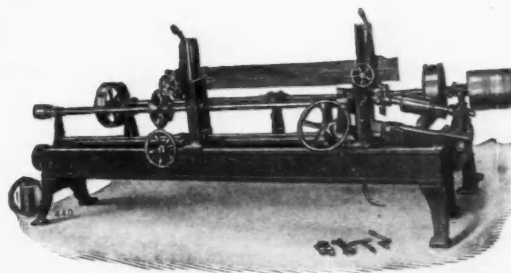
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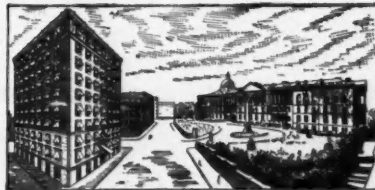


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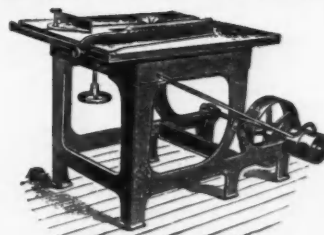
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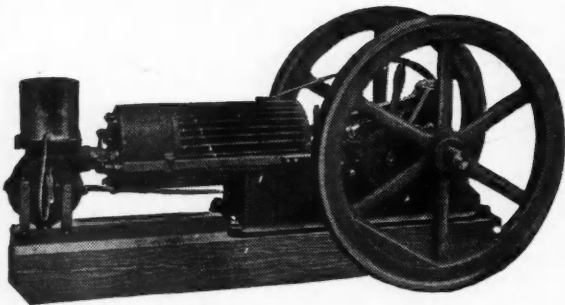
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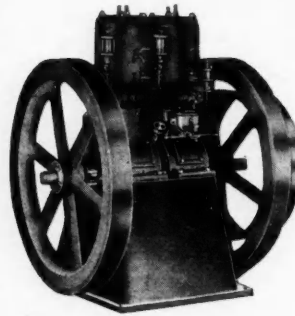


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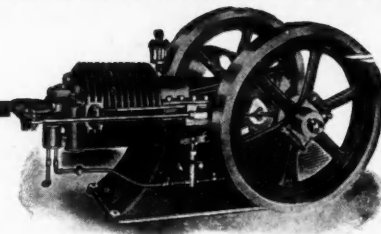


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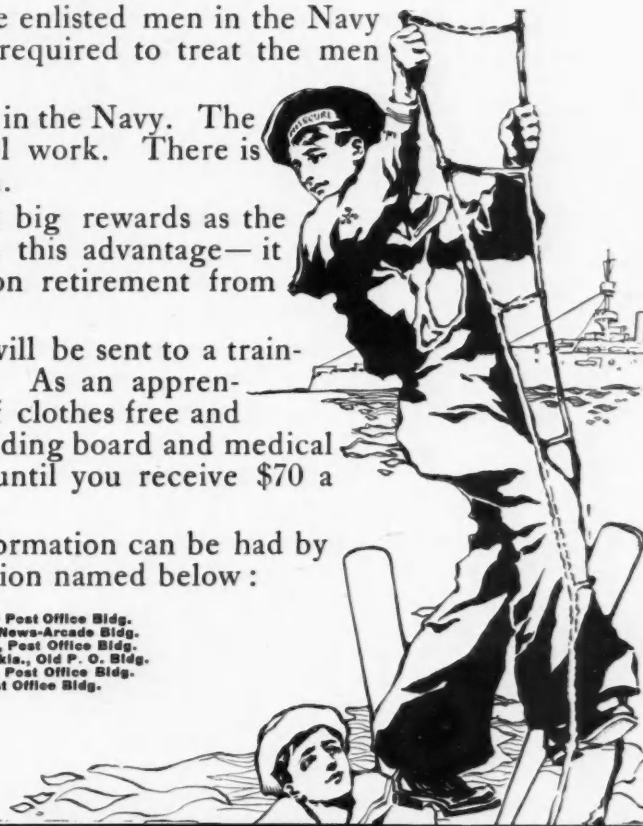
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Chattanooga, Tenn., 916 Market St.

Chicago, Ill., New Post Office Bldg.
Des Moines, Ia., News-Arcade Bldg.
Kansas City, Mo., Post Office Bldg.
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Navy Department, Washington, D. C.





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Begin now. Bricklayers are in big demand. As we teach bricklaying exclusively we turn out the most expert mechanics. Individual Instructions. You start right in with the tools and learn how to lay brick.

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Our Universal Sash Bar Meets Every Condition of Store Front Construction

Always a sure fitter. Used for Corners, Divisions, Transoms, Mullions, Sills, Jams, Circles, Domes and any and all angles. Send us your blue prints for estimates. We deliver the goods.

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For PASSENGER or FREIGHT SERVICE in Factories, Stores and Dwelling Houses.

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Hand-power Elevators in stock in Chicago

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Such a stock insures immediate delivery.

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Volume of business warrants *a large range in sizes.*

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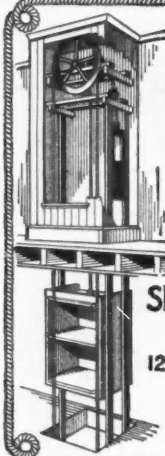


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MYERS

Glass Valve

MYERS Stayon Flexible Door Hangers with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

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Double-acting, Lift, Tank and Spray


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Store Ladders, Etc.

HAY TOOLS

of all kinds. Write for Circulars and Prices.





The American Floor Surfacing Machine

Has solved the perplexing problem that has confronted Architects, Builders and Owners for years, "AN EVENLY AND PROPERLY SURFACED FLOOR." In the past there has been but one method, the unsatisfactory, tedious and expensive one of hand labor. It is now no longer necessary to employ a small army of men to surface a floor. — THE AMERICAN FLOOR SURFACING MACHINE will do the work of from FIFTEEN to TWENTY men, depending upon the size and condition of the floor and do it **QUICKER, CHEAPER, BETTER**, whether of a dwelling, school house, skating rink, dancing hall, office building, decks of steamers, hotels, bowling alleys or store buildings.

The American Floor Surfacing machine does the work with **ABSOLUTE EVENNESS** and at a small fraction of the cost of hand labor. It is at once efficient, reliable and consequently has met with unqualified success wherever it has been operated. The machine is built on correct mechanical principles, is **SELF-PROPELLING** and the epitome of simplicity. It is **MODERN METHODS SUPPLYING MODERN DEMANDS**, and a **MONEY SAVER**, and so simple in operation that any person of ordinary intelligence can quickly learn how to successfully handle it.

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AMERICAN FLOOR SURFACING MACHINE CO.
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Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

Venetian and Sliding **BLINDS** Screens and Screen Doors

Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms. Write for our catalogue, price list and proposition to you.



Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

BURLINGTON VENETIAN BLIND COMPANY
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PHOENIX INSIDE SLIDING BLINDS

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 Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house.
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Economy!
Convenience!
 BRIDGE & CANAL STS.

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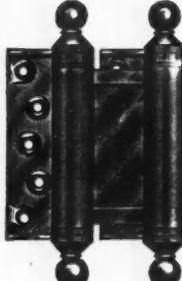

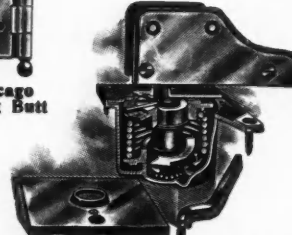
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MY TRADE MARK ON ALL MY GOODS

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American Carpenter and Builder

Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill. under the Act of Congress of March 3, 1879.

WILLIAM A. RADFORD, EDITOR-IN-CHIEF.
WILLIAM REUTHER, EDITOR.
ALFRED W. WOODS, ASSOCIATE EDITOR.

Published monthly by

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CHARLES W. RADFORD, Vice-President.
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VOL. IV OCTOBER, 1907 No. 1

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades.

Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

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PATIENCE is a virtue, but it's not the only one nor should laziness be mistaken for patience.

YOU may judge a workman by his chips, but you can tell some things, too, by the condition of his tools.

THERE is as much difference between true court-esy and "soft soap" as there is between gold

and brassy imitations, and most people can feel the difference. So use real courtesy liberally and be sparing of the "soft soap."

A REPUTATION for promptness is a splendid business asset. And the same reputation for neatness is another.

STRENGTH of character and individual ideas are great things, but they are not acquired by merely differing from everybody else.

IT is far better to have the name of charging stiff prices, and doing good work than it is to get the reputation of being a cheap man.

DON'T be over boastful of your accomplishments. If you do your work well it will speak for itself and spare you the trouble and ill favor of bragging.

AVOID red tape, for it is entangling, but get system enough in your work that you may know where you are at all the time, and get into the habit of doing things in order. It saves confusion and unburdens the mind of many of the perplexities that hamper free thinking.

IN these days of close calculations it pays to study estimating. It is no longer either safe or good business to guess at the cost of doing things. To get your share of work, and be sure of coming out right in the end, it is imperative that you *know* what it should cost to do things. Practice it, and study methods of estimating.

Lawns and Paint are Assets

BEAUTIFUL and well kept lawns are the finishing touches that add hundreds of dollars to the value of the place from the general appearance, completeness and satisfied temperament of the owner, and go

a long way toward securing a purchaser if the home is erected for investment. How many realize the cash value of a fresh appearing house, and a well kept lawn with a few timely flowers? Make your home a "Building of the City Beautiful"—one that will be attractive above the average home along the ordinary residence street.



Home Builders Number

IN THIS issue we have endeavored to bring together the ideas and tendencies with reference to home building throughout the United States and Canada. That we have been successful in this venture can best be seen by glancing over the pages of this number. From every part of the country have come the products of the builder's art, and our only regret is that we were obliged to reduce them so much to enable us to publish them all. The enthusiasm and spirit shown by our members is to be commended and we wish to thank them all for the aid they have given us in making this the best and most complete volume of medium priced house designs ever published. Not only will this number be of interest to the carpenters and contractors, but also to the great class of people who desire to build a home. Among these can be classed almost everyone who is not an owner of a house now. It seems to be an instinct of the human race to want a home, and everyone is planning to sometime build one of their own to conform with their ideas. This is the spirit that should be encouraged, as the owner of a home makes a better and more valuable citizen than the floating population. Let us hope that the great number of practical and artistic houses shown herewith will have a tendency to make a great portion of the floating population take root and become stable citizens of the towns in which they are located.



Encourage Better Building

THERE is one way in which every builder can serve his country well, and indirectly serve himself too, and that is by encouraging people who consult him about building plans to build better and more substantial homes. It's a work that a whole lot of good can be said for apart from the personal benefits that accrue, not merely from getting more work to do, but from getting a good reputation for advising wisely. After a man builds he soon forgets the cost, and is influenced solely by the effect the building has on him. It's the same as it is with a carpenter about buying tools. If he buys a good tool at a high price, he soon forgets the extra expense and always takes great pride in the tool, whereas if he buys a poor one, he finds only temporary pleasure in the price saving, and after that passes it is all dissatisfaction. When a home builder builds poorly just to save a little of the cost, he soon forgets that saving and has in its place a lasting grudge against both the home and the

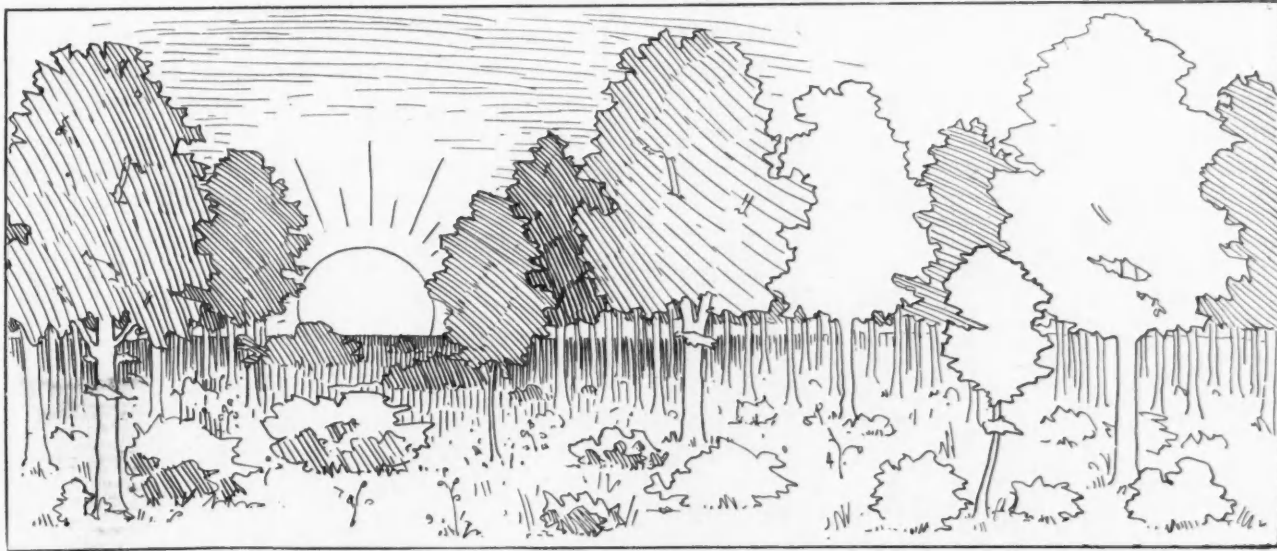
builder. Building a home is one thing more than anything else that a man can afford to go in debt for the sake of getting it good, and the builder that encourages a man to build better than he may originally have intended will generally make a lasting friend out of the man, a friend who will speak highly of him to others, and thus prove to be a help.

But entirely aside from these, what might be termed direct selfish ends, the encouragement of good home building is a public duty which the builder can and should perform. It's the home builders that are the backbone of a nation, and the nation with the best homes among the great common people is not only the strongest nation for the time being, but the greatness of the future is insured thereby. It is the sane and lasting way to use some of the great prosperity that this country has been blessed with—in the building of better homes. It strengthens home ties, adds stability to the community and sets the people to thinking along higher lines, gives them fresh pride in their surroundings and inspires higher and healthier sentiment generally. All this, and more, is the natural outgrowth of that sentiment which leads to better home building, and there are few men better placed to help along the good work by developing this sentiment than the builders of each community. They are, or should be, the counsellors in matters pertaining to building, just as the doctor gives counsel regarding the health.

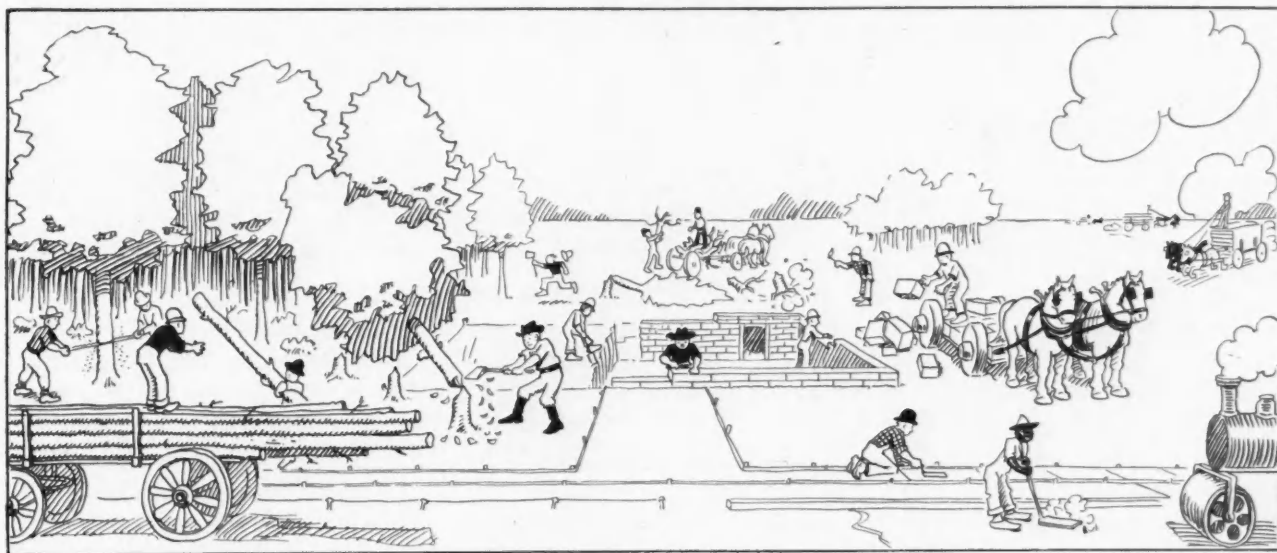
The other side of the picture is the community where good homes are the exception, and just as cheap habitations as can be gotten along with the rule. It is things like this, the neglect of good home building, that leads to neglected farms, scattered families and community decay generally. The young people, finding little inspiration in their surroundings, are attracted by the cities and by communities more enterprising. So, after losing interest at home, they wander away, and the community, losing the main hope of the future in the scattering of its young to more attractive places, goes backward instead of forward, and there is neither work for the builder nor encouragement to live therein.

We all know this, and can see examples of it on all sides, varying in degree, but all illustrating the one main fact, that the better homes the better people. The trouble is that we look for these things already made, rather than to the idea of lending a hand in their making. It would be a great work for any builder to get into one of these dead communities and wake it up through inspiring sentiment for better home building, and every builder should bear in mind that there are all around him opportunities for this kind of work. It is, in short, a part of every builder's duty to his community to promote such ideas and encourage more pretentious homes. So keep this thought in mind whenever you are called on to give advice about building a new dwelling: The better the home the better the people.

A Foreigner's Idea of Rapid Building Construction in America



Morning



Noon



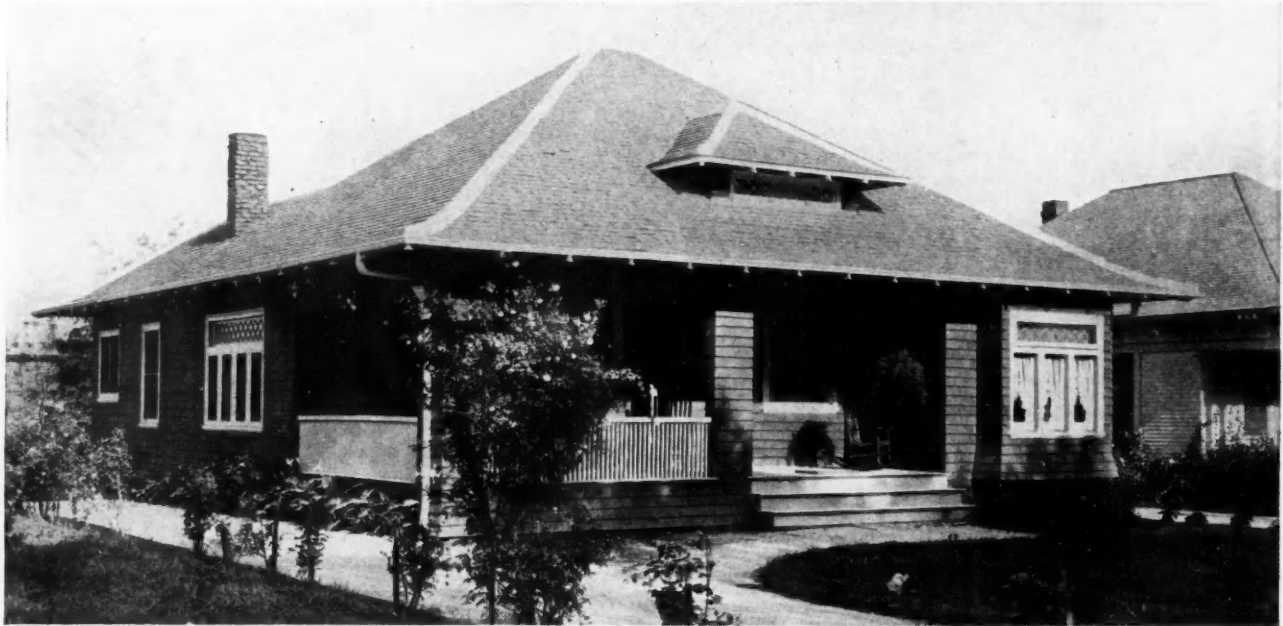
Night

Bungalows and Architectural Novelties

By Waldon Fawcett

IN PROVIDING homes for the people of the most rapidly growing nation on the globe, the architects and builders of the United States have drawn upon all the world for ideas. Probably no other new nation was ever so catholic in its taste. Not only have the best characteristics of present-day European

With these varied sources of architectural inspiration and the further fact that American builders carry on construction in brick, stone, concrete and other mediums as well as with the old stand-by, wood, it might be suspected that it would be difficult to select private residences that could be designated as thor-



A Six-Room Bungalow, Costing \$3,000

practice been transplanted to this side of the Atlantic, but resourceful Yankee home builders have canvassed the architecture of all ages in search of distinctive features that could be rejuvenated in modern New World habitations. The results we see in the revival of the most ornate French architecture; in the artistic adaptations of Moorish forms and in the popularity of the modernized "mission" construction that originated in the days of the Spanish conquerors.

oughly representative of approved American tenets. Such, however, is not exactly the case, for despite the wide range of detail in architecture and building materials, there are certain characteristics which bring American homes into general classifications and which distinguish them from their foreign prototypes.

At the risk of challenging some adverse opinion the theory may be advanced that pre-eminence as a representative American home should be given to the de-



Southern California Bungalow of Moderate Cost

tached house in contrast to the house in a row which predominates so markedly in many foreign countries. To be sure, there are certain communities in the United States where land is so valuable (being sold by the square foot in most instances, instead of per foot

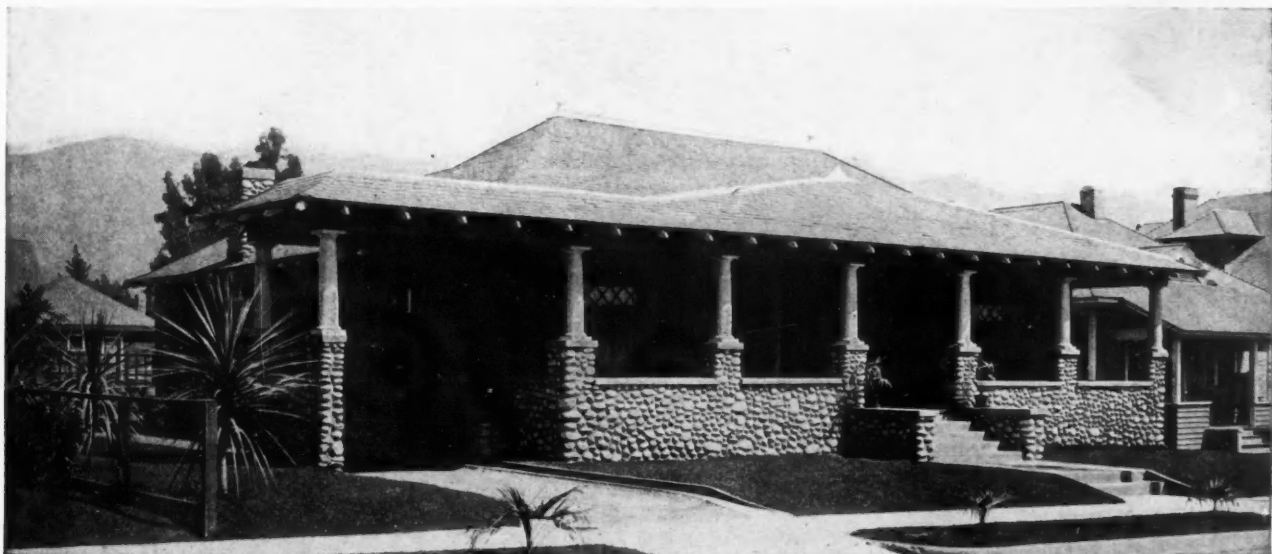
Furthermore, the preference of Americans for detached houses—the preference that in itself goes far to justify the designation of the type as the representative American form of residence—is manifest in a constantly increasing degree even in those cities where



Seven-Room Brick and Shingle Bungalow, Costing \$3,500

frontage) that the "houses in rows" are strongly in the majority, as witness conditions in New York, Chicago, Philadelphia, Baltimore, Washington, etc.; but in almost all our other large cities the detached or semi-detached houses are almost universal. In all the smaller American cities, towns and villages naught but the individual houses, standing alone, are to be found, although any traveler can recall towns abroad

it is forbidden by financial edict that any but the very wealthy shall enjoy such domiciles. This is shown by the tremendous growth in suburban life in the vicinity of New York and all our eastern cities where houses in a row are the rule within the city limits. Almost all classes of artisans and professional men—citizens earning all the way from \$1,000 to \$12,000 or more per year—are showing a willingness to spend from



Southern California Bungalow with extended Porticoes

where the homes are set as close together as in our most congested cities. In such cases the explanation would seem to be found in the custom of the country rather than in limitations of space or the high prices of sites.

thirty minutes to two hours per day in travel by rail or boat in order to enjoy the boon of a detached house set down in a plot ranging in size from 40 by 100 feet to several acres.

The tendency of this quest for the detached house



Seven-Room Log Cabin Bungalow

combined with the natural increase in realty values in our most congested communities is to give over the central portion of many a large city to two classes of residential structures. On the one hand we have the family hotels, large apartment buildings and tenement houses, which are multiplying like weeds in many of our larger cities, and on the other hand we have the mansions, preferably in detached form, of the very wealthy. The citizen of moderate means must make his choice between a suite of rooms, or mayhap an entire floor in a flat or apartment building, and an individual house, necessarily more or less remote from the business center of the community. That so large a proportion of the persons called upon to make this choice are deciding in favor of the detached house, however isolated, is perhaps to be attributed in some measure to the fact that a large proportion of American city dwellers were born and reared in the country districts or in towns or villages and most of them never lose an instinctive liking for a house open to all outdoors on all sides.

It goes without saying that detached houses, as we find them in the United States, are characterized by far greater individuality of design and construction than residences in a row, and it may be added that the detached houses that are within a cost limit of, say \$50,000, are usually fraught with greater originality than the extravagant homes of the very wealthy. This latter class of mansions are, in too many instances, little more than replicas of Italian villas, French palaces or other European creations, with minor modifications in concession to American taste, whereas the more moderate priced residences designed by American architects and constructed by resourceful Yankee builders are pretty certain to show innovations well worthy of study and emulation.

The development of the detached house in America has proceeded during all its history along a pathway of the greatest latitude, but there have been evolved certain forms that by extensive adoption have come to be recognized as distinctive types. Take for instance the familiar style of house known as the



Bungalow in Swiss Chalet Style

Colonial, which has the advantage that it may be constructed of either brick or wood without any sacrifice of architectural traditions, and is further commended by the circumstance that it is capable of all manner of interpretations from the rambling manor house of the southern plantation to the three-story house of restricted dimensions which must find its setting in a building lot of standard size.

Even more popular than the Colonial house during recent years is the bungalow, and from all indications this type of inexpensive yet artistic residence has not as yet reached the climax of its vogue. There is no doubt but that the modest cost of bungalows—the range is from \$350 to \$7,000—has been one of the most potent factors in their tremendous success; but on the other hand, their quaint and picturesque attrib-

regard for permanency. Many of them are provided with heating systems, or at least open fireplaces, although the old-time significance of the word contemplated an unplastered building, with no facilities for heating, since it was presumed to be designed for summer occupancy or as a tropical habitation. Finally, the word is even applied nowadays to country and suburban houses that have rooms upstairs. Indeed, almost the only tradition that has come down to us unimpaired is that to the effect that the bungalow shall be provided with a broad veranda on one or more sides.

The bungalow idea first took root in America in Southern California, where the mild and equable climate is particularly well adapted to the bungalow in its elementary form. Here it has undergone its most



An Architectural Novelty in Eastern Pennsylvania

utes in contrast to the stiff, formal outlines of the frame house of stereotyped design have commended them to countless persons to whom low cost is no particular object, and this would seem to augur for the permanency of a sentiment that some builders have been wont to look upon as a fad.

It may be explained at the outset that the word bungalow is of East Indian derivation and oddly enough it was, several centuries ago, almost synonymous with "hovel." It required several hundred years for the term to arrive at its present dignity, and this was only attained through a number of successive steps. In its earlier use by white men the word bungalow was taken to denote a lightly constructed, temporary habitation, not exceeding one story in height and presumably designed for temporary occupation. Nowadays we have bungalows that are designed as all-the-year residences and are constructed with every

extensive development, although other sections of the country are now crowding the favored region on the Pacific Coast in this respect. It is a question whether even to this day the best examples of bungalow construction are not to be found in the Golden Gate State, and it may be said in all candor that any builder of frame houses will do well to study carefully these unique examples, regardless of whether or not he be engaged in building bungalows, for this class of structures have many unusual attributes which can be embodied to advantage in other classes of houses.

It might naturally be supposed by the uninitiated that bungalows being in most instances only one story or a story and a half in height would be prone to show a similarity of outline bordering on the monotonous, but strangely enough, exactly the contrary is true. Individuality seems to be more readily attained than in the general run of country and suburban houses,



Bungalow in the San Gabriel Valley, Cal.

and certainly we do not find in the California "bungalow belt" any such duplication as is to be met with in the rural districts of Massachusetts and other thickly-populated sections of New England.

Where a builder has to act as a missionary and create business, the bungalow type of residence is an excellent vehicle to employ. The prospective customer who has not fully made up his mind that he wants to build must, in many instances, be reached by an argument that affects the pocketbook, and here the bungalow suggestion has everything in its favor, inasmuch as a house of this class can, of course, be erected at less cost than any other structure of like dimensions. Other, but equally potent, considerations commend the bungalow to the women of a household, and as the average builder knows from experience, the gentler sex often cast the deciding vote in a residential proposition.

First of all, the bungalow, if at all artistic, is the

very embodiment of cosiness, an attribute that appeals forcefully to the average woman. Even more highly esteemed in the eyes of the thinking housewife is the fact that all or nearly all the rooms being on one floor housekeeping arrangements are simplified to the last degree. There have been instances where builders have won their cases by pointing out that a bungalow supplies the best solution for the servant problem, since with conveniently arranged rooms, all on one floor, it is possible for a woman to perform unaided and without disagreeable fatigue the household work that would necessitate the employment of a servant (or at least occasional aid by a day worker) in an ordinary two-story or three-story house.

Many builders who, wishing to enter the field of bungalow construction, have looked to their fellow-craftsmen in Southern California for information and inspiration, have been surprised at the seemingly high prices set down as the cost quotations of representa-

tive bungalows. This, it should be explained, is due solely to the fact that lumber is very expensive in Southern California, the majority of the material being of necessity transported from Oregon. In most sections of the country any California bungalow could be duplicated at far less cost than the outlay made for the original. On the other hand, it should be pointed out that some of the California bungalows are characterized by a flimsiness of construction that certainly should not be advised in a region where a house must stand any considerable weather stresses. The lower portion of the Golden Gate State is a region comparatively free from snow and violent storms and consequently the California carpenter can with impunity dispense with frames in some



Veranda with "Mission" Furniture, Stucco and Frame Construction

instances and build bungalows with no other support than upright boards reaching from sill to plate and with scantlings as cross-ties at wainscot height, but it would scarcely be wise for a builder in the east or the middle west to follow such example. Of course no such liberties have been taken in the case of all California bungalows. Many of the more pretentious ones are characterized by the maximum degree of solidity and stability, and the aforementioned houses are cited merely to show how light a construction will stand up and prove comfortable in this climate and to illustrate one of the methods whereby the Southern California builder dodges the excessive cost of material.

It has already been explained that the word bungalow has been rendered sufficiently elastic in recent years to include one story and a half and even two-story houses in which the broad, low effect is carried out. Often when upstairs sleeping apartments are desirable for climatic or other reasons the atmosphere of the bungalow is preserved by placing these in the central part of the house and flanking this part of the structure with one-story construction that may take on the semblance of wings if desired. A modification of the primary bungalow idea that is proving deservedly popular is found in the Swiss chalet design, with broad overhanging roof, long familiar to European travelers. The chalet type of residence is always picturesque, and if the site be on the side of a hill it



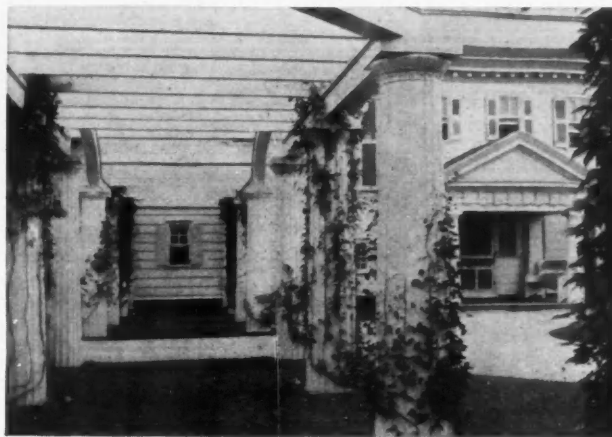
Court in Rear of Bungalow at Pasadena, Cal.

may be made to harmonize more effectively with the surroundings than almost any other form of building.

As previously pointed out, the East Indian antecedents of our modern word "bungalow" prescribed broad verandas and this obligation is cheerfully met by the average bungalow builder, since a portico adds much to the ensemble of any informal dwelling. The Italian "pergola" has also been adopted, and while the æsthetic architects may rail against such a combination there is no doubt that it has proven eminently

satisfactory to the home-makers who have employed it. In Southern California where the influence of the so-called "mission architecture" of the Spanish conquerors is ever manifest in the building world, we find the attractive "patio" or an open court of some kind frequently introduced as an adjunct of the bungalow.

It is a mistake to harbor the belief that a bungalow to be consistent must be wholly of frame construction. The old-time bungalows of India, the originators of



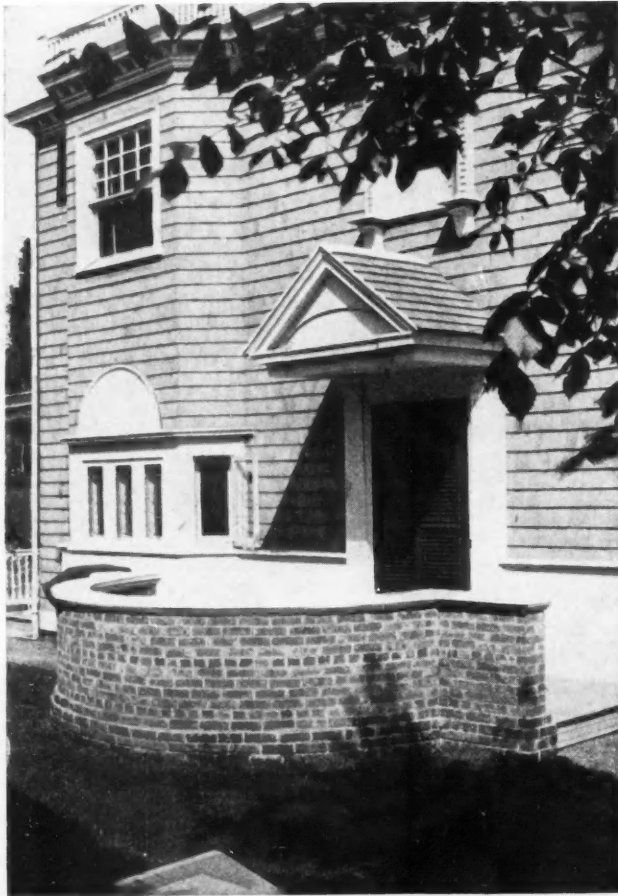
Pergola at Country House, Ashford, Conn.

the type, were for the most part built of unbaked bricks and had roofs of thatch so that there is a precedent for the modern bungalows of brick and stucco. While the employment of these mediums is thus both time-honored and satisfactory, it may be noted that the great majority of present-day buildings of this class are either wholly of wood or else of what might be termed composite construction. For instance, brick may be employed for the foundation and all or a portion of the first story, this substantial base being capped by frame construction. Clinker brick is also extensively used for unroofed verandas, the balustrades of open courts, etc. Another medium that finds favor with discriminating bungalow builders is the familiar cobblestone. Not only are cobblestones employed for foundations, porch pillars, etc., but they constitute the favorite material for the massive exposed chimneys which are a conspicuous feature of many bungalows. Shingles, stained to meet individual taste, have the call as a roofing material for bungalows, but Spanish tiles are utilized to some extent.

Almost every conceivable form of frame construction has been employed for structures of the bungalow type and one of the sights of the residence district of Los Angeles is a "log cabin bungalow" which arouses the admiration of thousands of visitors. Ordinary weather-boarding is used extensively for walls, but the whole policy of the average bungalow builder being to contrive something out of the ordinary, it is customary to lift this medium out of the commonplace by arranging the studs on the outside or resorting to some other ingenious expedient. Similarly where the walls are composed of plain boards set vertically it is

customary to have them battened with strips which are painted a contrasting color.

Transcending all else in the bungalow field, however, is shingle construction, and it is a question whether, after all, it is not the most appropriate form of expression for this class of house. Certainly it leaves little to be desired from the standpoint of economy. Of course, the builders do not consider themselves bound to adhere religiously to the time-honored methods of arranging shingles, but introduce all man-



An Entrance With a Hood—Wyoming, N. J.

ner of quaint conceits, including shingles of more or less fantastic form tinted in accordance with any desired decorative scheme. The preferable construction for bungalow walls consists of two thicknesses of shingles, or upright boards and shingles, with a layer of tarred paper between. Incidentally it may be remarked that a correspondingly protective layer of felt may with benefit be introduced in the roof in order to mitigate the effect of excessive summer heat. Indeed, the dodging of the attacks of the sun's direct rays is one of the most serious problems of bungalow construction, alike to all one-story buildings. Moreover, the circumstance is the strongest argument in favor of the story-and-a-half or two-story bungalow, and the latest approved practice prescribes that if height must be restricted to one story, there at least be provided a liberal air space, with ample window openings to allow free circulation.

There is no more any standard plan for the interior arrangement of bungalows than there is a set of hard and fast rules for the character of the exterior. Each bungalow is admittedly a law unto itself. At the same time, it may be said that the weight of expert opinion seems to be in favor of one large living room—a combination of reception hall and sitting room, and perhaps dining room as well—around which are grouped the bedrooms, while the kitchen is placed at the rear of the house, mayhap in a semi-detached structure. All the more pretentious bungalows have, of course, a dining room separate from the living room, and in not a few instances the dining room opens upon a screened portico, where meals can be served in pleasant weather, and which can, if desired, be converted into a sun parlor in winter.

The windows are almost invariably one of the most attractive features of a bungalow. Two forms lead in popularity—the French windows that render it possible to throw open practically the entire side of a room, and the broad horizontal window, the sashes of which swing inward or outward, according to preference. In some bungalows the builder has even sought to strike an individual note in the main entrance door. In one such house which the writer has in mind the interior woodwork is all in weathered oak, to harmonize with the "mission" or arts and crafts furniture with which the bungalow is equipped, and carrying out this same idea of bold simplicity, the front door is a massive oak affair, studded with iron spikes and with equally primitive latch and hinges.



Detail View "Sunswick," Maplewood, N. J.

Bungalows of light construction with unplastered walls are likely to prove mere whispering galleries, and this objectionable transmission of sound is not entirely remedied by making the partition walls all closets, as has been done in not a few instances. Unless it is simply imperative that the cost price be kept down to bed rock, a builder will usually find it vastly more satisfactory in the end to provide partitions of studding, plastered on both sides, and if further obstacles against sound are desired the space between the

studs may be filled with slagwood or asbestic cotton, which latter also possesses fire-resisting qualities that are of some value. Since many bungalows are set directly upon the ground or on the most unpretentious foundations, it is generally considered wise to lay a floor of cement concrete, to which the floor boards, well tarred on the under surface, may be nailed direct.

A motto which the bungalow builder must ever keep in mind is that which calls for the greatest economy of space. If such a house be extended in floor plan to meet the requirements of a prodigal use of space, it is soon robbed of the atmosphere of cosiness, if indeed it does not lose all semblance of a bungalow. In the one-story bungalow the builder has the initial advantage that he is not called upon to waste space in halls, passageways and stairways, and to this saving other economies have been added, thanks to human ingenuity. In California, in particular, the architects and builders who make a specialty of bungalows pride themselves on their ability to construct "a six-room house in four." They accomplish this by introducing in the living and dining rooms patent wall beds. These adjuncts are, during the daylight hours, to all intents and purposes, handsome cabinet mantels, but after nightfall they are transformed into comfortable beds and the rooms thus converted at a moment's notice into chambers. The principle is, of course, that of the old familiar folding bed, but this built-in contrivance (nesting in a closet in the wall) is as much superior to the ordinary folding bed as an incandescent light is to a tallow dip. Incidentally it may be noted that built-in structures are one of the specialties of the bungalow builder. There are built-in bookcases in the living room, built-in buffets and china-closets in the dining room, and no end of such compact adjuncts in the kitchen, where economy of space reaches its highest refinements.

In discussing the tendencies of the times relative to the construction of detached houses in the United States, it is perhaps permissible to digress momentarily to point out the rapidly increasing vogue of the Italian pergola as an adjunct to any such building which has space to accommodate it. Indeed, the latter would seem to be a secondary consideration, for we now find pergolas introduced on sites of very limited area. No longer is the tradition preserved that the pergola must run at right angles to the house—alike to the old-fashioned arbor which it has so nearly supplanted—but instead we find it, in many instances, leaning against the house much after the fashion of a veranda.

In effect the pergola is nothing more than a very artistic form of arbor and presumably designed as a support for vines of one kind or another, although unlike the familiar old-time arbor it is not lacking in attractiveness if the vines be missing. In its standard form the pergola consists of two rows of columns, across the tops of which are placed longitudinal beams, while bridging the span between these twin structures

are transverse beams. The columns which support the pergola are almost invariably round, while the longitudinal and transverse beams have square corners. It is essential to the charm of the pergola that the whole structure be painted a snowy white. Builders whose clients have longed for a pergola on very restricted grounds have in some instances resorted to a single-sided pergola, and where such a structure is put up with due regard to harmony with the surroundings the effect is entirely satisfactory.

As has been pointed out at various stages in the foregoing, the designers and builders of detached houses enjoy many advantages in comparison with the limitations imposed upon their brethren who concern themselves only with structures which have "party walls" on two sides and consequently must derive light and air from two ends, neither exceeding twenty-five feet in width. At the same time it must be admitted that some perplexities beset the constructors of houses that stand alone. These are accentuated by the fact that the man who pays for a detached house usually expects architectural pretensions that he would waive in a city house set in a row.

Now it is a comparatively easy matter for the architect and builder to achieve distinctive individuality of treatment in the case of a house set down in spacious grounds, or in the case of a cottage type of residence on a site of only moderate size, but it is quite another matter to accomplish as much in the case of a large house for which there is allowed only the ordinary forty or fifty-foot lot. With present conditions of living, a goodly share of city and suburban residences contain from eight rooms and one bath to twelve rooms and two baths, and to arrange such accommodations on the limited area mentioned and at the same time prevent the exterior of the house from presenting an appearance almost identical with that of its neighbors is no mean undertaking.

Probably the most favored scheme for making a break in the severe lines of the exterior of such a house is found in the introduction of a tower, but from an artistic standpoint this is by no means an unmixed blessing. There is no doubt that a tower appeals forcefully to the average homeowner and particularly are the feminine members of the household influenced in its favor because of the undeniable attractions of the tower rooms. At the same time, care and judgment are needed to prevent the tower from becoming a jarring note in the appearance of the exterior.

Another serviceable expedient for giving the exterior of the large frame house a well-balanced and pleasing appearance is the introduction of the gambrel roof. The effect of this treatment is heightened by having the shingles of the roof stained olive green and introducing a white-painted trim. Yet another touch to take such a house out of the beaten path is to arrange the main entrance at the side. This gives a broad expanse in front that is attractive to the eye.

The Western Spirit in Home Building

TYPICAL EXAMPLE OF THE WESTERN SPIRIT OF ARCHITECTURE—GRADUAL BREAKING AWAY FROM THE ANCIENT IDEAS BROUGHT FROM EUROPE

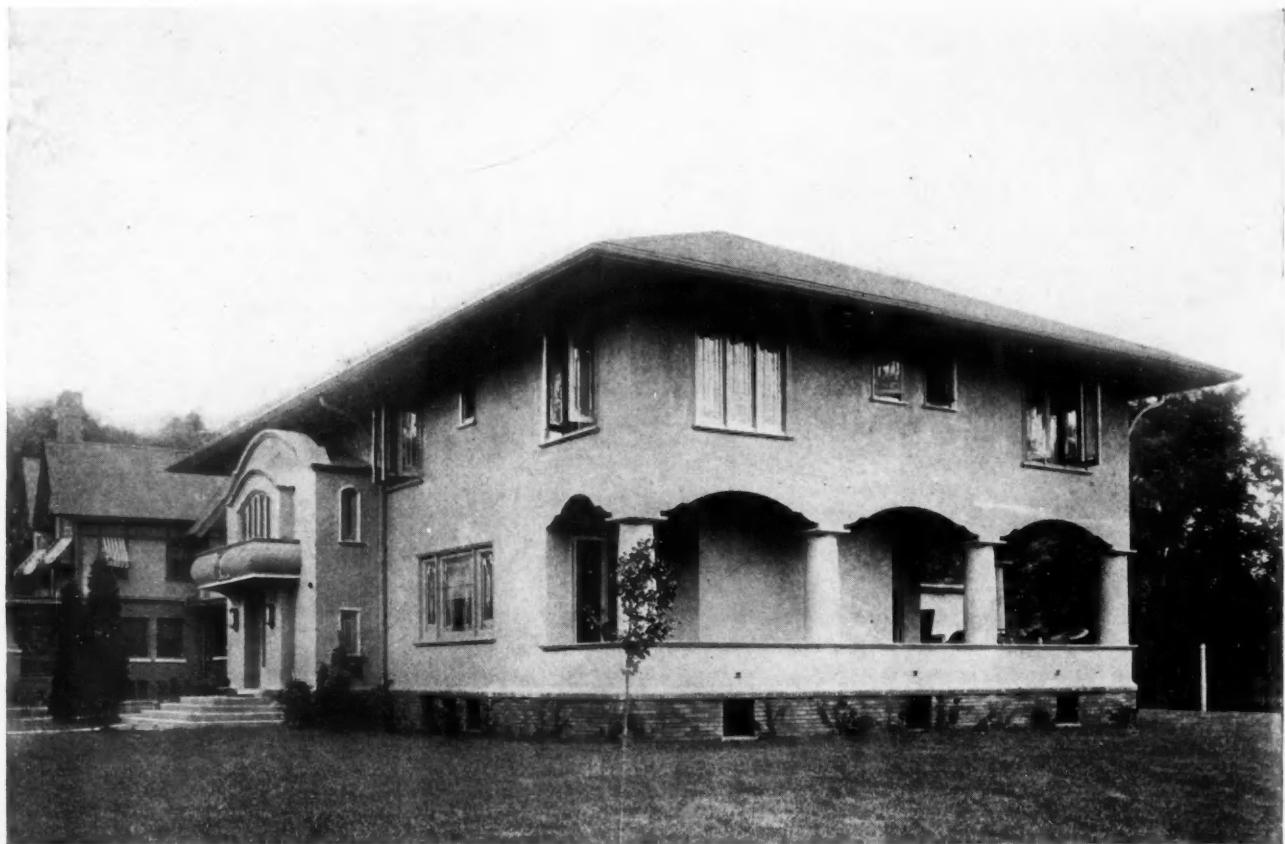
By Ira S. Griffith

IN VIEW of the discussion now being carried on in architectural magazines as to what constitutes indigenous architecture, the accompanying pictures may prove interesting to members of the building craft. They are pictures of the residence of Mr. C. R. Erwin, Oak Park, Ill. This residence was planned by Mr. George W. Maher, of Chicago, whose paper on "The Western Spirit," read before the Chicago Architectural Club, was the cause of the present discussion, and is typical of his work.

An appreciation of this residence demands some

view is not accepted, and he who does conceive a clear and concise position on advance matters, especially in the realm of art, is often times considered impractical and visionary, a dreamer, as it were, who sees strange things, whose ideas are for naught when it comes to the actual execution of works. My purpose is to correct this prevalent opinion so far as it lies within my power.

"I do not consider myself far from the truth when I make the assertion that at the present time this country is most conservative, or rather falsely conservative,



understanding of the motive which actuated the architect in its conception. Quoting from Mr. Maher's paper, "The Western Spirit:"

"We co-workers in the building of the west should be influenced, even dominated, by a spirit of action that shall produce results bespeaking of our day and generation, and to the extent that we permit ourselves to be so dominated by this spirit of progress, to that extent are we real and worthy of our calling. In the realm of architecture I would say that to solve our problems satisfactorily, it behooves us to dip deep into the currents of life around about us, feel the pulse of the times and then actually execute the ideals of the present hour, and if we do this work truthfully, intelligently, our efforts must be enduring.

"Unfortunately, at the present time, this point of

in art and architecture, even more so than any other country. We find, for instance, that in Europe such seats of power as Vienna, Berlin, Paris and London are making great advancement and progress in the arts of a new order. This architecture has made wonderful strides in these old centers, although hindered at every step by precedent and tradition. The strong technical schools in these centers have also placed every possible obstacle in the path of this progress, but to no avail. The artist's spirit has prevailed, and as a result we find emanating from abroad a freshness and vigor in art matters that is truly inspiring. True, in some of these efforts the pendulum has swung too far, but in my judgment this is not a permanent fault, but is in the end conducive of great good.

"When we look for an equal amount of enthusiasm



and progress from the American standpoint we are prone to disappointment, especially in the eastern portion of this country, where, due to age, culture and wealth, one would expect an art development, expressive of a new country, we find just the opposite evidences in all that we see. The reactionary spirit in architecture that prevails there today is truly lament-

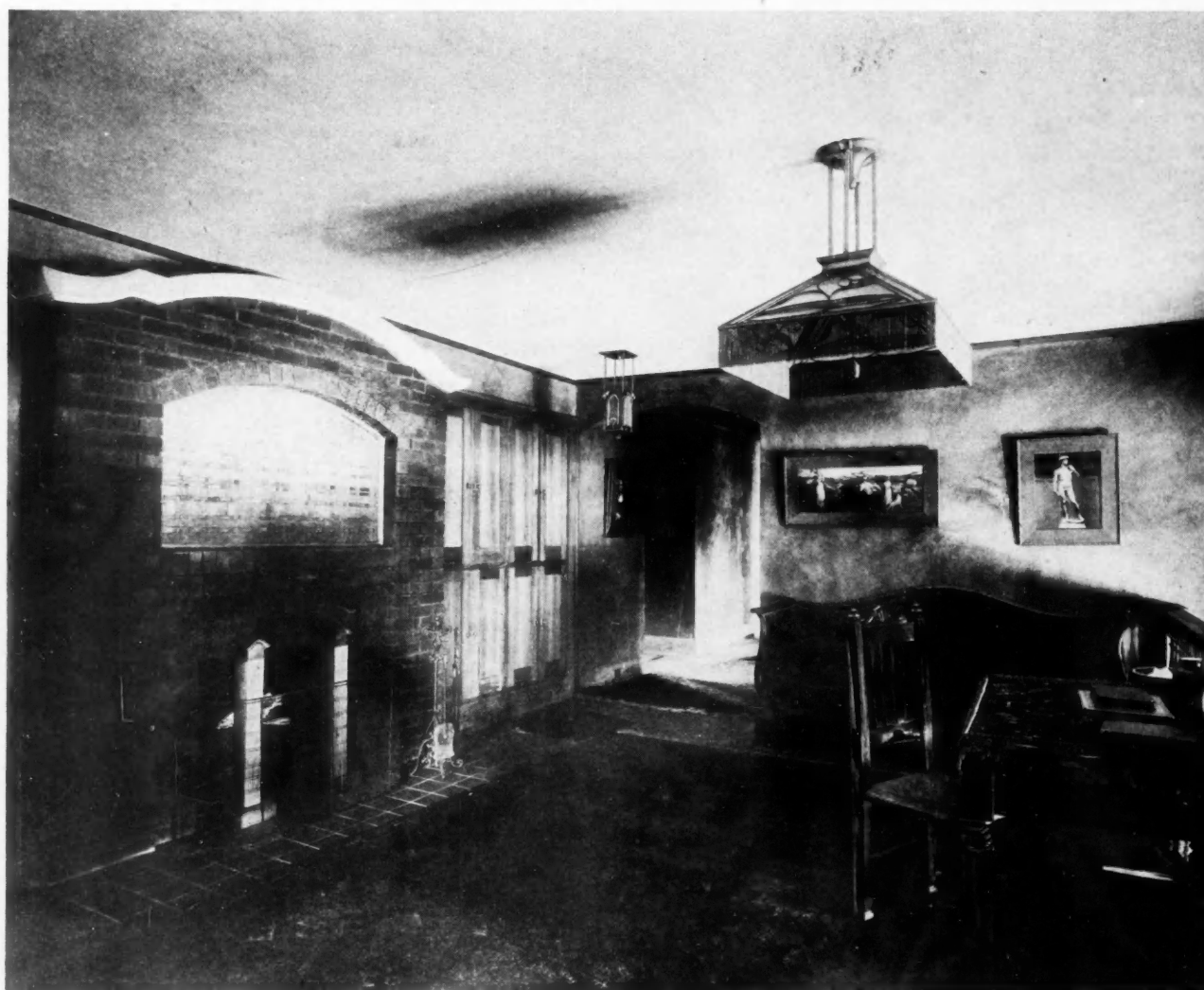
able; the desire to copy everything of note that has appeared from the four distant corners of the earth is all too prevalent. Each succeeding work of any importance flatly contradicts any estimation that is to be made of the art of the east as a progressive one, the excellence of material and workmanship is only to be commended. The design is non-expressive.



Even the criticism that is produced in magazine and periodical by our eastern architectural contemporaries is as dead as the buildings that they criticize.

"All seem steeped in precedent—the architect, the building, the publication, and the critic. It would seem to me, from all these evidences of a peculiar conservatism, that little or no hope of an expressive art can evolve from our eastern cities, and if there is to be an art that is to indicate the trend of our national life, it must spring from the central portion of this country, or where traditional Europe has not yet laid upon us its heavy hand. I am speaking to you as a

"Our democracy exalts the individual and if I understand the spirit of the west, it proposes that the individual shall express his ideals and will encourage him so to do irrespective of any dictum, irrespective of any fault or failure on his part so long as it is an honest effort. I repeat that here in the west the tide of any false conservatism will be turned, that here will originate a new school of architecture which will grow stronger each succeeding generation until all the life assimilated in this new country will find full expression in marble and stone. Already the men who are fostering this new architecture and this new movement



western man, in love with my environment, my profession, and with some knowledge of the people and possibilities here in our midst and at hand. Again, I am speaking to a club that has in the past produced men who have had kindred thoughts and who have spoken to you in the same strain, and who have stamped their individuality not only upon their own community, but are reaching out for virgin fields beyond their immediate surroundings. I hope to add further encouragement in this great task, which is also yours to perform, and implore you to look to it that your high ideals are not laid low and that you mistake not the call of the west. It is for you to not only undertake and achieve, but also to have ideals.

are gaining recruits and a broader range in their influence is being felt daily. It can no longer be said that the architect who follows the new does so at the peril of losing patronage. The young architect in our city who will grow in favor is he who embraces this new art. Recognition comes to him alike from the people, from the press and in publication. If an exhibition was held in these rooms tonight of the work done by these young men and placed against the work executed by the so-called conservative men, you would find that most interest and enthusiasm would be centered in the work favoring the most progress. We do not stop to consider how virile is this new art and to what extent it is attracting attention, not only in our own country,

but in Europe. Viewing the situation from abroad, they understand full well that a new expression of art must come from this country, an expression born of a democracy where the effort is not hindered to any extent by precedent or tradition, here *ought* to be unfettered opportunity for an expression of the new. Further, you will find that the opinion abroad is pronounced that the new art will evolve greater headway in the central west, and even at the present time

theory; however, certain buildings are already in evidence and more of them will soon be erected and eventually will come the professor and the book.

"Wherever in the history of the past we have found great achievement in whatsoever line of endeavor, there it is that men lived who heeded well the spirit of their times and who drank deeply from the inspiration of the life which surrounded them and who did not in any manner strive to conceal that life, humble



they are publishing such examples of this art from the west.

"Much could be said in this connection explaining theories of design that would be of interest to the student. Some are working on the motive and rhythm theme, understanding that nature and music are phases of inspiration to be formed into the concrete and with the real living motive that of surrounding life, the production of great works of art should be forthcoming. It is no longer necessary for any school or student to rely only on precedent for the teaching of architecture, since all around us is motive power, nature, music, life. It is unfortunate that there is no text book as yet compiled that would give the technical schools foundation for the instruction of this new

and ordinary though it may have been, but whose strong conviction was to live honestly and truthfully, painting as it were a living portrait, giving full expression to what they saw. Ever will men of this type be benefactors to the world and if you men here tonight heed this truth, go to your task and express to your best ability the spirit and life which surround you. Rest assured that no greater boon is yours to perform and that there is no greater compensation due man than that which comes from the execution of a strong and righteous conviction."

The building illustrated, it will be seen, is strongly individual, as might be expected of a building planned by a worker with a message such as Mr. Maher feels he has for the middle west. Whether we agree with

the worker or not in all of his views, we can but admire the plucky fight which he is making for a freer expression and more attention to the individual in modern architecture and building.

As one approaches this residence, and as he enters, he is conscious of a pleasing line movement. If not inquisitive, he probably will not know the source of this mental pleasure. So adroitly has the designer placed the curves—or curve we should call it, for all of the curves are of the same form—that their appro-



priateness is never questioned, and the beauty of their rhythmic movement is felt though the cause remain unknown.

Notice the curves, if you are inquisitive, over the entrance, around the porch on the exterior; over the front or vestibule door, on the stair, the organ, at the fire-place in cap and andirons, on the dining room table and chairs and in the electric fixtures.

Over the entrance one finds the motif—a key, as it were, to the decoration of the interior. It is the lotus flower or water lily.

How this motif has been applied may easily be seen by observing the glass of the casement windows. Lotus flowers appear in all of them, in designs simple in line and quiet of color but beautiful because of their harmony and richness.

The beauty of the water scene over the fire-place, facing the front entrance, gives one a fitting introduction to the entire interior. This, too, is typical of the scheme as a whole—a water scheme. The beauty of the grayish white of the tree trunks, the silver of the water and the soft delicate colors of the flowers are but poorly represented by a photograph.

The woodwork and walls, according to the general scheme, are simply treated. The woodwork is of oak in silver gray—the color of water-logged timber. The side walls are tinted a very soft water green, while the ceilings are roughed and left in the soft grey of the natural sand finish.

The floors of the first story are of dull red tile and are waxed. In the kitchen and butler's pantry, side-

walls and ceilings are covered with white enamel tiling, a covering unexcelled for cleanliness, while the floors are covered with white marble mosaic.

The first floor consists of one large living room, off of which opens the dining room, two double openings making this virtually a part of the other room. At one end of the living room is a library, connected with it by a double opening. A feature of this large living room is the pipe organ. The service portion is disconnected, but convenient.

The housewife may be interested in knowing that this particular home is provided with an intercommunicating telephone system, that it is piped for a system of vacuum cleaning. An electric motor furnishes the necessary power and the connections are in the baseboards at convenient places to which hose may be attached. No expense has been spared to make the home convenient and comfortable.

We refer, in closing, to an article by Mr. Maher in the *Architectural Record*, written in answer to editorial criticism of "The Western Spirit:"

"It is contended by a certain few that specified examples of architecture erected in this country during the last decade are strongly American in style; notable among the buildings mentioned are the Boston Public Library, the Library of Columbia University, the Harvard Club, the University Club, the Pennsylvania Railroad Station, the Madison Square Presbyterian Church, and the Gorham Manufacturing Company's building.

We would in no wise depreciate or pass judgment upon these noble edifices in which the grandeur of the past is so illustriously brought before the eye. The materials employed are costly and beautiful, the proportions classical to a degree and the modeling so Greek or Roman that while viewing them one might easily imagine oneself to be in some ancient city of Europe. The truth in regard to the style of these respective buildings is manifest; they do not in the least represent an American art or civilization, but are pure and noble types for museum reference. It would be folly at this time to make a just comparison between the relative merits of the classic and a modern school of architecture. No one for a moment imagines the modern day creations yet rival in beauty these costly monuments, or that any effort yet put forth is wholly worthy to represent the architecture of America. However, the efforts evolving from heart and mind of the artist who is striving to depict his day and generation are of ultimate value to posterity. Time alone must be the arbitrator in this momentous discussion. . . . Posterity will utter the final word either of approval or disapproval.



Right now I will tell you that I would not miss a number of the *AMERICAN CARPENTER AND BUILDER* for the price of a year's subscription. I could write all day in praise of the *AMERICAN CARPENTER AND BUILDER*, but what's the use? Others have written volumes of praise already. C. L. RUDY, Shreveport, La.

MODEST AMERICAN HOMES

WE ARE publishing herewith something which probably has never before been equalled by any trade paper in this country. We show designs of over 100 houses erected by our subscribers, and covering over twenty states and Canada. Our ability to do this is due entirely to the energy of our subscribers, who have taken enough interest in our magazine, and in many cases have had



No. 3. Home of F. L. Bradley, Milo, Me. Cost \$2,000.



No. 1. Residence of Dr. John K. Hooper, Camden, Me. L. E. Bramhall, Contractor.

considerable trouble to supply us with photographs of their work. It furthermore shows the quality and caliber of our readers, for no small carpenter and contractor is capable of contracting for and erecting such houses as we have received. In order to arrange them in some systematic way, we have endeavored to group them in states, and have numbered each



Geo. H. Chapman.



No. 2. J. B. Sterns Estate, Camden, Me.



No. 4. Residence and barn of Geo. H. Chapman, Ludlow, Vt.

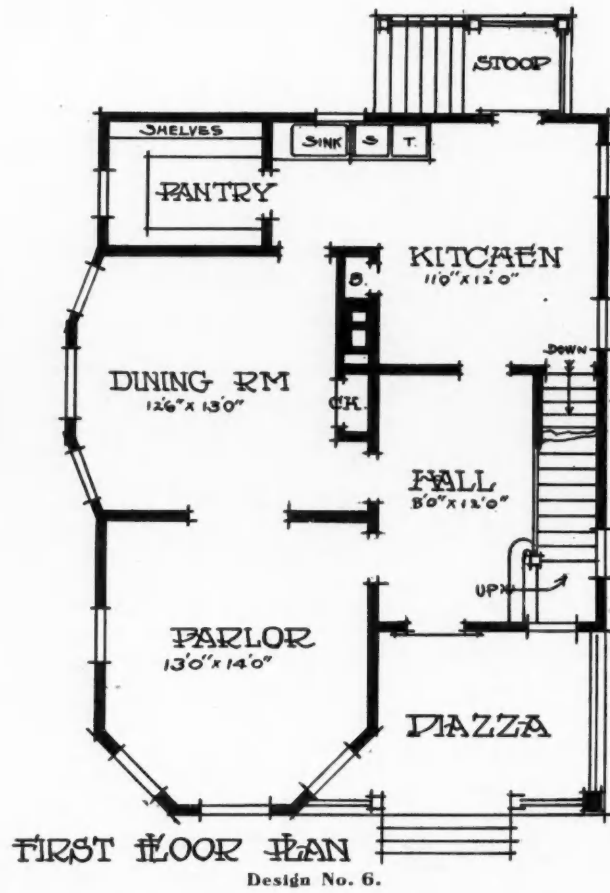
house so as to give the proper credit to each carpenter, contractor and builder. In many cases the photographs were not accompanied with the complete description,



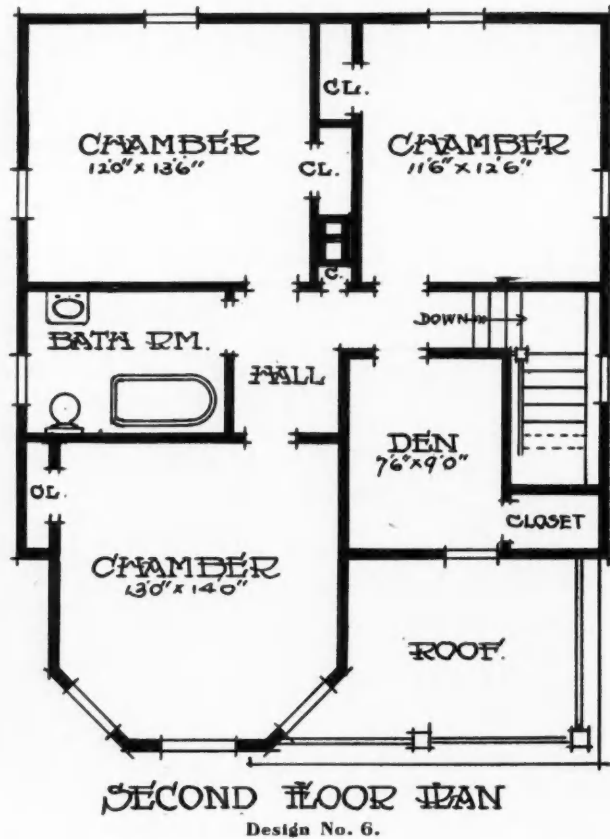
No. 5. Walter M. Wanen, Abington, Mass.

and in those cases we are obliged to simply run a caption under the illustration, telling where it is located and the contractor for the same. We regret that we were obliged to reduce a number of the illustrations as much as we did, but as there over 120 photographs received it was necessary to bring them down rather small to enable us to get them all in this one issue. In some cases rough sketches of the floor plans were submitted, but owing to the limited time, we were unable to have them re-drawn and put in shape for the magazine.

Design No. 4 is an eight-room house 26 by 32 and has a barn 25 by 30 feet. The house is finished perfectly plain in cherry and black ash with cypress doors down stairs and red wood doors up stairs. The house is covered with a slate roof. This house and barn can be built for about \$3,000, and are the work of Geo. H. Chapman, Ludlow, Vt.



Design No. 6 is of a house located in Brockton, Mass., and the builder of the same is W. F. Barlow, Jr. The exterior of the first story is of clapboards,



No. 6. Home of W. H. Bryant, Brockton, Mass. W. F. Barlow, Jr., Builder.



No. 7. Home of N. R. Packard, Brockton, Mass. W. F. Barlow, Jr., Builder.

and the balance is shingled. The shingles are stained on gambrel ends, and the clapboards and blinds are painted. The cost complete is \$2,400.

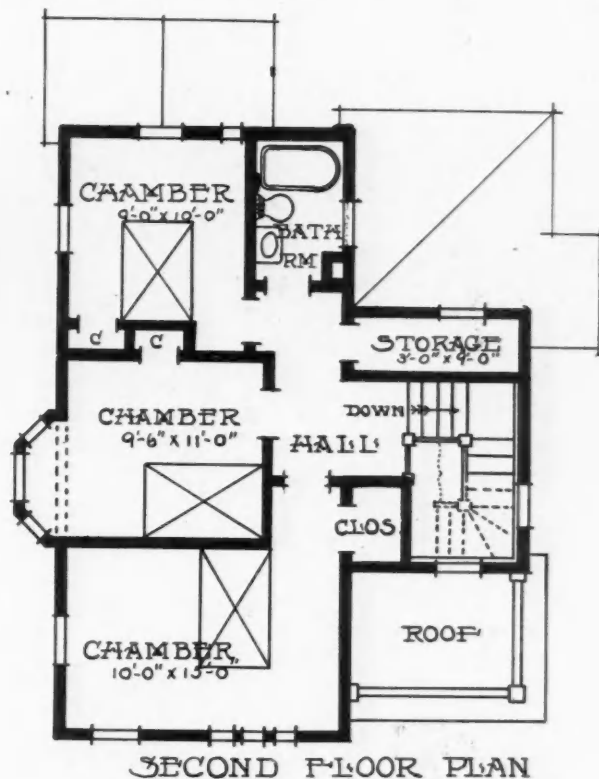
Design No. 7 is a buff colored stucco house, built by W. F. Barlow, Jr., and located in Brockton, Mass. The outside woodwork is all rough cypress, stained brown. The sashes are white and the blinds olive green. The half timber is put over wooden laths,



Design No. 7.

laid double the space of a lath apart. This house was built in 1906 and cost \$2,500. The kitchen and bath room are finished in pine, the dining room in stained cypress and all the other rooms in white wood, painted ivory white. The house is heated by means of a furnace, has a good grade of plumbing, and is piped for gas.

Design No. 8 is of a house built for Mrs. Francis E. Hardy, Ashburnham, Mass. It was built by A. A. Wellington, of Fitchburg, Mass. All the stone work on the house was from local field stone. The house is shingled and all outside work is stained over dark



Design No. 7.

green, and the trimmings to match. On the first floor, the reception hall is finished in oak; the parlor in white; the dining room in red birch, and the kitchen in cypress, with an imitation tile six feet high. The butler's pantry and one sleeping room are in cypress. The second floor contains three rooms in cypress; two in white; the den in black, and the bath room in white.



No. 8. Home of Mrs. Frances E. Hardy, Ashburnham, Mass. Built by A. A. Wellington, Fitchburg, Mass.



No. 9. Stanley A. Dennis, New York City, Builder.



No. 12. Stanley A. Dennis, New York City, Builder.



No. 10. Stanley A. Dennis, New York City, Builder.



No. 13. Stanley A. Dennis, New York City, Builder.



No. 11. Stanley A. Dennis, New York City, Builder.



No. 14. Stanley A. Dennis, New York City, Builder.



No. 15. Stanley A. Dennis, New York City, Builder.



No. 16. Stanley A. Dennis, New York City, Builder.



No. 17. Stanley A. Dennis, New York City, Builder.

The third floor contains one room in cypress. There is a laundry in the basement and the house is heated with steam.

The views from No. 18 to 23 inclusive are of the home of Chas. H. Platt, a contractor at Skaneateles, N. Y. The house was designed and erected by himself. It is a pretty and comfortable home, being equipped with all modern conveniences. The cost of the building was \$5,500. The entire foundation is of sandstone, outlined with red mortar. The sides of



No. 18. Front and North View of Home of Chas. H. Platt, Skaneateles, N. Y.

the house are clapboarded and painted dark green, while the trimmings are in white. The basement is divided into a wood and coal room, vegetable cellar, canned fruit closet and cistern. The floor is of cement and has a six-inch slope, so that the water from the washing goes easily down the drain. The first floor

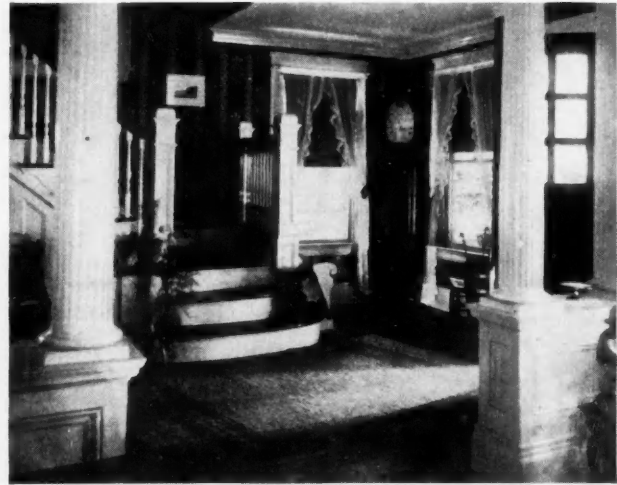


No. 19. Front and South Side.

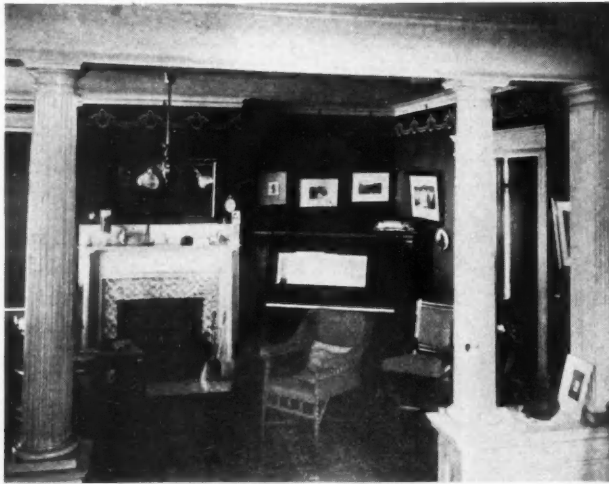
is divided into a parlor, library, dining room, and kitchen. The floors in all of these rooms are of white wood. The hall and parlor occupy the entire front and are divided by two columns and pedestals. Dividing the parlor from the dining room is a sliding door, while from the hall to the dining room and library are single doors. The parlor is made very attractive by a fireplace. The woodwork is white wood and is enameled in the hall, parlor and sleeping rooms, while the dining room and library are finished in oak. The



No. 20. View of Dining Room.



No. 23. The Hall, Taken from the Parlor.



No. 21. Parlor, Taken from Front Hall Stairway.



No. 22. Dining Room, Showing Corner of Library.

plate rail in the dining room is also of oak. The library is a very cosy room, having a bay window. The windows at the end are of ordinary size, while the one in the center is high, allowing a bookcase to fit in under. A good sized pantry is very conveniently fitted up with shelves and cupboards and has a large window in it. The kitchen is finished in Georgia pine, and it is easier to keep clean than the hard finish. The ice box is kept on a small platform on the cellar stairs, just opposite the kitchen entrance to the cellar. The ice man enters from the basement and thus avoids much dirt in the kitchen and the ice lasts much longer, being in a cool place. There are



No. 24. C. E. Hopkins, McGraw, N. Y., Builder.

two stairways leading to the second floor, one from the front hall and one from the kitchen. The front, side and basement doors have vestibules, thus keeping the house much warmer in the winter. The second floor is divided into five bed rooms and a bath room. There is also a large linen closet at the head of the stairs which is a great convenience. Each bed room has windows on two sides and is also equipped with a closet containing shelves and drawers. In the bath room there is also a closet fitted with a medicine chest and a shaving glass, while under this chest is the soiled clothes hamper. The plumbing is complete



No. 25. Home of R. C. Lynde, Houghton, N. Y. Built by W. W. Francis. Cost \$3,000.



No. 28. Home of Mrs. Lewis. Built by M. M. Grube, Basil, Ohio.



No. 26. Home of C. R. Worner. Built by McMillan and Wentan, So. Otselic, N. Y.



No. 27. Home of Frank Milton Redington, Amherst, Ohio.



No. 29. Home of A. A. Miller. Built by M. M. Grube, Basil, Ohio.

and the house is lighted with electricity. The third floor is divided into three large rooms.

Design No. 27 is the home of Frank Milton Redington, Amherst, Ohio. He is a well-known deaf mute carpenter, and planned the building himself and built it with the assistance of other carpenters and workmen. The house has nine rooms and contains all the improvements, such as water and gas. Spring water in the cellar is pumped to a large tank on the upper floor, from which the bath room, kitchen and laundry in the basement are supplied. It is considered one of the best houses in Amherst, and the cost of the same is \$3,000.

Designs No. 32 and 33 are of the house owned by A. H. Estes, Mendon, Mich., and built by Chas. Blue, of that town. It is a 7-room house a story and a half high, and is 25 feet and 6 inches in width by 43 feet deep over all. The first story is 9 feet high and the second story is 8 feet and 6 inches. The gables are shingled and stained green, as is also the roof. The trimmings are all in white. The first story is clap-



No. 30. Home of C. G. Shepard. L. D. Malone, Builder, Shelby, Ohio.

boarded. There is a basement under the entire house which is 7 feet deep and equipped with a hot-air furnace. The dining room, reception hall and parlor are finished in oak, while the other rooms are finished in Georgia pine. The house was built in 1906 at a cost of \$2,000.

Design No. 49 is a neat appearing residence, located at Gaulfield avenue, Grand Rapids, Mich. It was built by E. Veldsma, of that city. It has a parlor, living room, dining room, bed room and kitchen down stairs, all finished in oak. The bed room could be used as a library if so desired. On the second floor there are three bed rooms and a bath room finished in yellow pine. There is a basement under the entire house. The cost of this house is \$2,000.

Design No. 50 is of an attractive house, located in Grand Rapids, Mich., designed by E. Veldsma, of that city. There are five rooms down stairs finished in oak, and the kitchen is finished in yellow pine. There

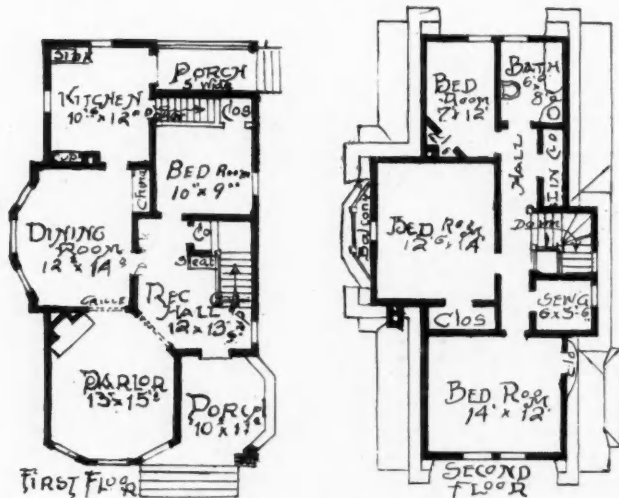


No. 31. Home of W. H. Skiles, Shelby, Ohio. L. D. Malone, Builder.



No. 32. Front Elevation, Home of A. H. Estes, Mendon, Mich. Chas. Blue, Architect.

are three bed rooms and a bath room finished in yellow pine on the second floor. The cost of the house is \$1,800.



Plans of Nos. 32 and 33.

Design No. 51 is of the home of E. H. Hebenstreit, O'Fallon, Ill. It was built by G. Budina & Sons, of that town. The house contains five rooms



No. 33. Right Side Elevation, House of A. H. Estes.



No. 34. Home of W. E. Wescott. Built by A. J. White, at Big Rapids, Mich. Cost \$3,000.



No. 37. Home of J. R. White. Built by A. J. White, at Big Rapids, Mich. Cost \$4,000.



No. 35. Home of W. E. Barlte. Built by A. J. White, at Big Rapids, Mich. Cost \$3,200.



No. 38. Home of Wm. Batsen. Built by A. J. White, at Big Rapids, Mich. Cost \$3,800.



No. 36. Home of Ex-Mayor C. W. Doe. Built by A. J. White, at Big Rapids, Mich. Cost \$6,000.



No. 39. Home Built by Neil McDuffee at Petoskey, Mich.



No. 40. Home of H. H. Cratie. Built by Bradt and Lusk, Jackson, Mich. Cost \$3,300, Complete.



No. 43. House Built by Bradt and Lusk, at Jackson, Mich.



No. 41. Buffet in Home of H. H. Cratie.



No. 44. Home of Mr. Golster. Built by Bradt and Lusk, at Jackson, Mich.



No. 42. Fireplace in Home of H. H. Cratie.



No. 45. Library in Home of Mr. Golster.



No. 46. Buffet in Home of Mr. Golster.

and is heated by means of a hot-air furnace. There is also a complete plumbing system installed and has hot water connections. The cost of the house is \$2,000.

Design No. 52 is of the home of H. H. Cowles, located at Silvis, Ill. It was built by himself and he



No. 47. Modern Residence Built by E. Veldsma, Grand Rapids, Mich.

states that it can be built for \$1,750.

Design No. 54 is of a neat little four-room cottage, owned by C. R. Hargrove, Des Moines, Iowa. It is 24 feet by 28 feet. The entire interior finish is of pine, and can be built for \$700.

Design No. 55 is of the house owned by S. Eldrege, Des Moines, Iowa. It contains eight rooms, six being



No. 48. Modern Residence Located on College Avenue, Grand Rapids, Mich. E. Veldsma, Architect.



No. 49. Residence Designed by E. Veldsma, Grand Rapids, Mich. Cost \$2,000.



No. 50. Residence Designed by E. Veldsma, Grand Rapids, Mich. Cost \$1,800.



No. 51. House Built by G. Budina & Sons, at O'Fallon, Ill.



No. 54. House Owned by C. H. Hargrove, Des Moines, Iowa. Four Rooms. Cost \$700.



No. 52. Home of H. H. Cowles, Silvis, Ill. Built by Himself. Cost \$1,750.



No. 55. House Owned By S. Eldrede, Des Moines, Iowa. Eight rooms. Cost \$1,000.



No. 53. House Built by Samuel Morris, Middletown, Iowa.



No. 56. Home of John Stotton, Lushton, Neb. Built by Henry Cain, Beaver Crossing, Neb.



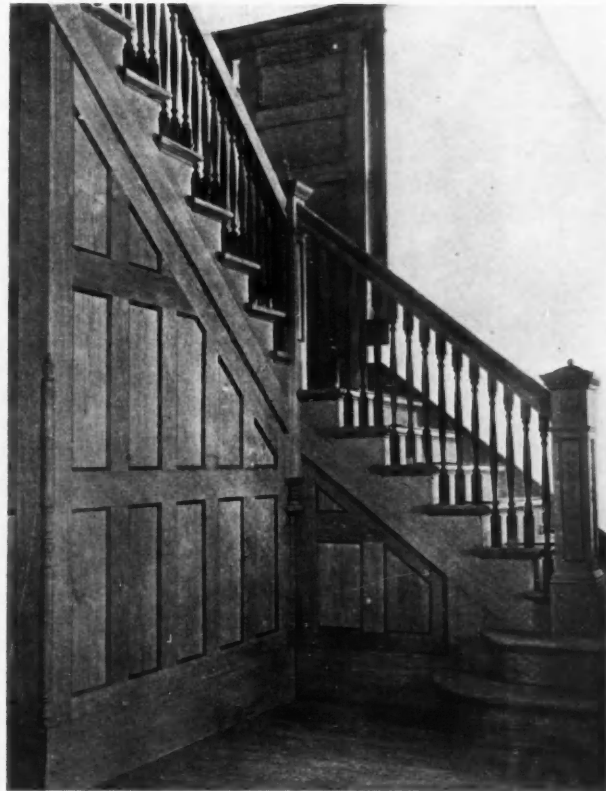
No. 57. Home of Henry Cain, Beaver Crossing, Neb. Owned and Built by Himself. Cost \$600.



No. 58. Home of Earl Eager, Beaver Crossing, Neb. Built by Henry Cain.



No. 59. Home of Lyman Jakté, Beaver Crossing, Neb. Built by Henry Cain.



No. 60. View of Stairway of House No. 59.

down stairs and two up stairs. It can be built for \$1,000.

Design No. 56 is of a house located in Lushton, Neb., and is owned by John Stotton. It was built by Henry Cain, of Beaver Crossing, Neb. The house is 28 by 42, and is made more attractive by two large convenient porches. The cost of the same was \$1,800.

Design No. 57 is a five-room house, 24 by 24, owned and built by Henry Cain, of Beaver Crossing, Neb. The cost of this house was \$600.

Design No. 58 is of a house located at Beaver Crossing, Neb., owned by Earl Eager. It is 34 by 52 feet.



No. 61. House Built by N. Ostergaard, Upland, Neb.



No. 62. House Built by N. Ostergaard, Upland, Neb.

The interior is finished in yellow pine except the hall and stairs which are of quartered sawed red oak. It was built by Henry Cain, of Beaver Crossing, Neb., at a cost of \$3,500.

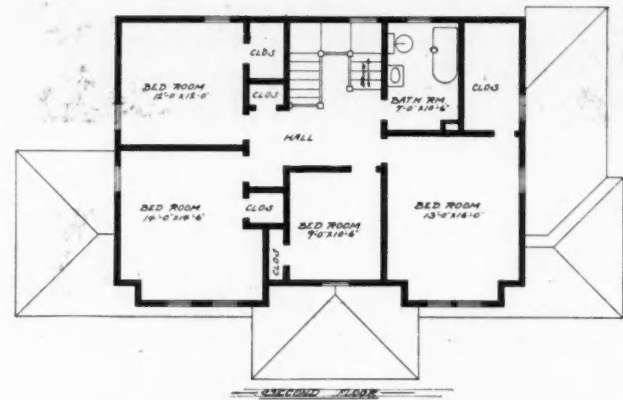
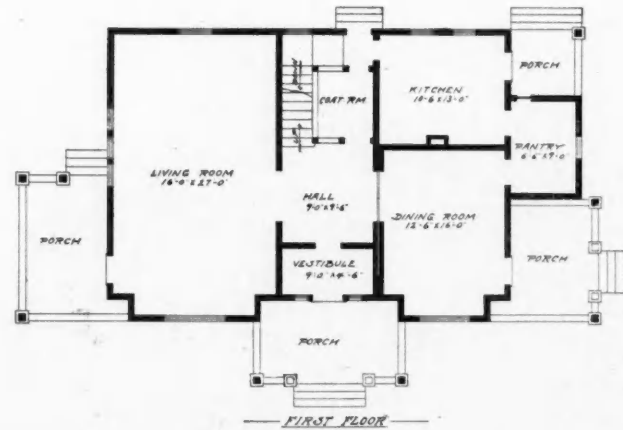
Design No. 59 is of the house owned by Liman Jakie, cashier of the Citizens Bank, of Beaver Crossing, Neb. It was built by Henry Cain, of that town. The entire first floor is finished in red oak, and design No. 60 shows a view of the stairs. The house is 30 by 44 feet.

Designs No. 61 and 62 are of the houses located in Upland, Neb., and erected by N. Ostergaard. The cost of each is about \$2,000.

Design No. 63 is of a house designed and built by W. S. Freeman, Kearney, Neb. This is a new type for that locality. The wide cornice and low roof have not been used heretofore. Mr. Freeman states that since this house was built these features have been employed on other houses. They are making an effort to induce builders to adopt a style of architecture



No. 63. House Designed and Built by W. S. Freeman Kearney, Neb.



Floor Plans of No. 63.



No. 64. Home of Mrs. J. W. Taylor. Built by H. Bellas, Auburn, Neb.

suited to the low flat character of the country. The idea of Mr. Freeman's is an excellent one, and we give it our hearty endorsement, as it would give each section of the country a distinct style and would do away with the monotony in building, now so general throughout the country. The size of this house is 28 by 40. The first story is 9 feet and 6 inches high, while the second is 8 feet and 6 inches. The interior finish is yellow pine stained to imitate dark oak and then waxed. The dining room is enameled in old



No. 65. House Designed and Built by H. Bellas, Auburn, Neb.
Cost \$1,500.



No. 68. South View of Church Built by A. C. McCray,
Topeka, Kan.



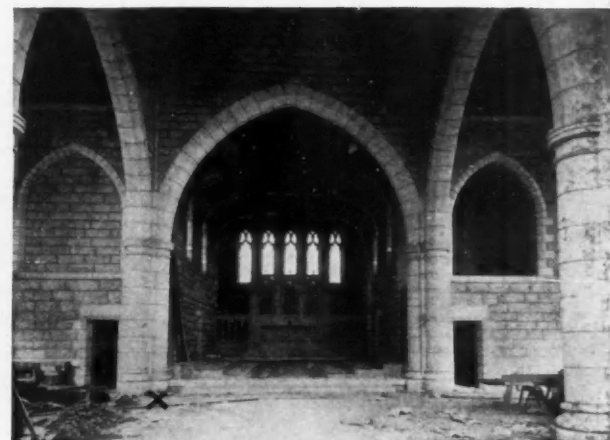
No. 66. Home of G. H. Hollister. Built by S. P. Beckwith, Red
Cloud, Neb. Cost \$2,000.



No. 69. East View of Church.



No. 67. Home of S. Stuebaker. Built of Concrete Blocks by
Emanuel Fitz, Red Cloud, Neb. Cost \$2,500.



No. 70. Showing View of Chancel.



No. 71. Concrete Block House. Built by Noah Norman, Blodgett, Mo.



No. 74. Interior of Dining Room in Home of Mrs. R. R. Ingels.



No. 72. House of Mrs. R. R. Ingels, Columbia, Mo. F. O. Kirby, Architect. Cost \$4,800.



No. 75. Interior of Library in Home of Mrs. R. R. Ingels.



No. 73. Interior View of Home of Mrs. R. R. Ingels, showing stair.



No. 76. Home of C. W. Phillips, Columbia, Mo. F. O. Kirby, Architect. Cost \$1,980.



No. 77. Home of B. S. Leavenworth, Columbia, Mo. F. O. Kirby, Architect. Cost \$2,980.



No. 78. Home of Prof. Curtis, Columbia, Mo. F. O. Kirby, Architect. Cost \$3,500.



No. 79. Residence in Columbia, Mo. F. O. Kirby, Architect. Cost \$2,000.



No. 80. Built by Mark A. Stewart, Louisiana, Mo.



No. 81. Fireplace in House of Mark A. Stewart.



No. 82. House Designed by H. E. Edgerman, Bonne Terre, Mo.



No. 83. House Designed by F. E. Eggerman, Bonne Terre, Mo.



No. 86. Home Owned and Built by G. E. Misner, Blackburn, Okla.



No. 84. House Designed by F. E. Eggerman, Bonne Terre, Mo.

ivory. The bath room is white enamel. The exterior is painted russet, shingles on wall and porch rail are stained very dark brown and the roof is stained dark red. The floors on the first floor are of oak and on the second floor of maple. The cost of building this house is between \$3,500 to \$4,000.

Design No. 71 is of a concrete block house, built by Noah Norman, Blodgett, Mo. It contains five rooms down stairs and four rooms up stairs. The walls are plastered and the interior is finished with No. 1 yellow pine. The doors are of cypress with yellow pine panels. The cost of this house was \$2,400.

Design No. 86 is of the house of G. E. Misner, designed and built by himself at Blackburn, Okla. It is finished throughout in yellow pine, and he states that the cost of the same was \$1,000.



No. 85. House Designed by F. E. Eggerman, Bonne Terre, Mo.



No. 87. Home of Victor O. Johnson, Pawnee, Okla. Built by Misner and Devorss.



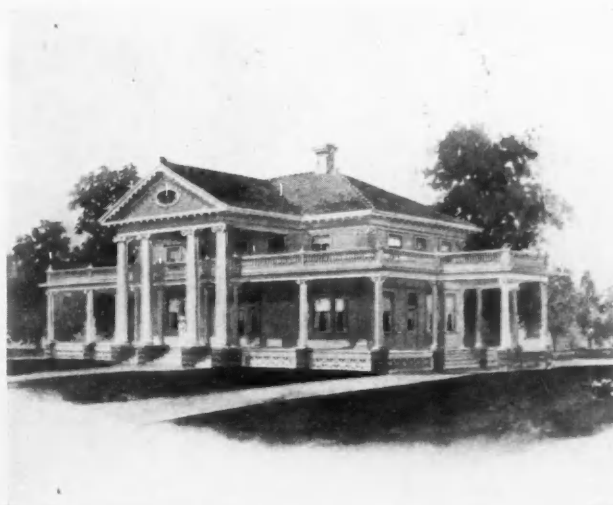
No. 88. House designed by J. H. Baxter, Port Arthur, Texas.

Design No. 87 is of the house of Victor O. Johnson, Pawnee, Okla. The entire first story is finished in quartered oak, while the second story is finished in red gum. It was erected in 1907 by Meisner & Devorss, at a cost of \$3,500.

Designs No. 91 to 93 inclusive are of the home of C. F. Hardie, located at Covington, La. It was designed by J. C. Beck, of that city. The cost of the same, including plumbing and lighting complete, was \$4,500.

Design No. 94 is of the residence of W. A. Jones, Spanish Fork, Utah. Robertson & Stebbins were the contractors for the stone, brick and plastering work, and E. Hanson did the carpenter work.

Design No. 96 is of a six-room one and a half story cottage, located at Pasadena, Cal. It is 28 by 39 feet. The first floor contains four rooms, while the second contains two rooms, bath room and a balcony.



No. 90. House Designed by J. H. Baxter, Port Arthur, Texas.



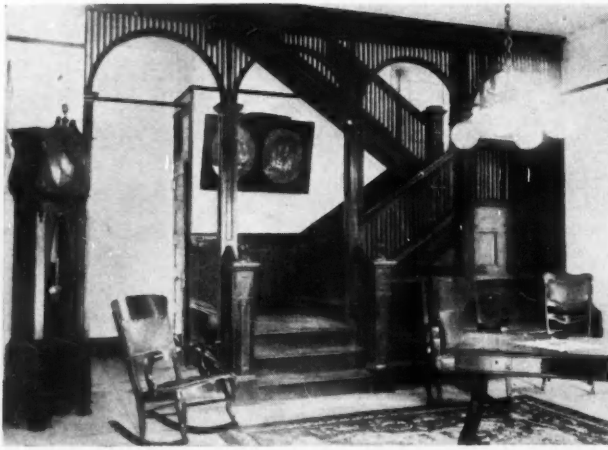
No. 91. Front View of Home of C. F. Hardie, Covington, La. J. C. Beck, Architect. Cost \$4,500.



No. 89. House Designed by J. H. Baxter, Port Arthur, Texas.



No. 92. Rear View of Home of C. F. Hardie.



No. 93. View of Reception Hall. Residence of C. F. Hardie.



No. 96. House Designed by Daniel Cohetstine, Pasadena, Cal.



No. 94. Residence of W. A. Jones, Spanish Fork, Utah. Robertson Stebbins, and E. Hanson, Contractors.



No. 97. House Designed and Built by E. E. Thomas, Pasadena, California.



No. 95. Stahmann's Photo Studio, Spanish Fork, Utah. Robertson and Stebbins Contractors.



No. 98. House Designed and Built by Daniel Cohetstine, Pasadena, California.



No. 99. Home of Luther Burbank, Santa Rosa, California.
 The living room has a beamed ceiling and a large fireplace. The cost of the same was \$2,400 and was designed by Daniel Cohetstine.

Design No. 97 is the home of one of our subscri-



No. 100. Home of W. H. Stinson, Claremont, California.
 ers, and was designed and built by E. E. Thomas, at Pasadena, Cal. The dimensions of the same are 32 by 38. There is also a large porch, 8 by 28 feet, across the entire front of the house. There are six rooms



No. 101. Living Room in Home of W. H. Stinson.
 on the first floor, and three rooms and a bath room on the second floor. To the back of the main house is an addition of 10 by 20 feet, used as a tent room. This is what is known as the bungalow style. Six-

inch re-sawed stained siding is used. The value of this house is \$4,000.

Designs No. 100 to 104 inclusive are of a bungalow designed by W. H. Stinson and his wife, of Claremont, Cal., and built expressly for a home by Mr.



No. 102. Dining Room in Home of W. H. Stinson.

Stinson, who has kindly written us and told us that he was proud of being a Charter Member of the great AMERICAN CARPENTER AND BUILDER FAMILY. The exterior is of re-sawed red wood rustic, left rough and



No. 103. Tent Room in Home of W. H. Stinson.

stained dark brown. It is trimmed with a rich cream shade. The chimney and porch columns of native cobble stone are attractive features of the outside. The entrance from the front door is through a spacious



No. 104. Living Room in Home of W. H. Stinson.



No. 105. Home of Chester R. Pyle, Pasadena, California.



No. 106. Home of E. O. Penfield, Pasadena, California.



No. 107. Home of Jos. Patterson, Pasadena, California.

archway into a large living room. From this sliding doors lead to what is called in California the "tent room," which with its eastern and southern exposure of screen and canvas only, partially shaded by a native sycamore, forms an ideal summer room. The screens are hinged and opened inward, making it convenient to adjust the canvas curtains, which are on automatic rollers, and when drawn down and buttoned are a very effective protection from wind and rain. No provision need be made against frost in southern California. The kitchen is also provided with screens and canvas so that one entire side can be opened or closed as desired. The interior trim of this cottage is Oregon pine, slash grain, with brown stain and dead-lac finish. The walls and ceilings have a sand finish and are artistically tinted. The cost of this bungalow was \$3,000.

Design No. 105 is of the pleasant home of Chester R. Pyle, and is located in Pasadena, Cal. Mr. Pyle was his own architect, and the interior is elegantly finished in Oregon pine, and the floors are also of this material. The house contains seven large rooms, all on one floor. It is 36 by 70 feet on the ground. It has a cobble stone foundation, and is sided with 6-inch re-sawed red wood siding. There is a wide porch across the entire front of the house. The plumbing is of the very best order and cost over \$300. Milton R. Pyle had the contract of the house and it was erected at a cost of \$2,800.

Design No. 106 is of the home of E. O. Penfield, of Pasadena, Cal. It was erected during the past summer by Shilling & Luce at a contract price of \$2,240, including a garage not shown in this picture. The house stands well above the street and commands a fine view of the mountains. There is a wide cement porch across the entire front, which also extends around the south side of the house. The house contains five large rooms finished in Oregon pine, a good cellar, a bath room, two toilets, a screen porch and



No 108. Home of Chas. C. Crew, Pasadena, California.

hardwood floors. The house is lighted with electricity and is 32 by 48 feet.

Design No. 107 is of the residence owned by Jos. Patterson, of Pasadena, Cal., and erected by R. F. Foss at a contract price of \$1,800. The house contains five rooms and a bath room. The living room has a large fireplace, built in book shelves and window seats. The dining room is equipped with a large china closet. A hot water tank connects with a gas range in the kitchen.

Design No. 108 is of a home owned by Chas. C. Crew, of Pasadena, Cal. R. F. Foss was the architect and contractor, and erected the house at a cost of \$1,575. The house is 26 by 40 feet and contains five rooms and a bath room. The interior is finished in Shasta pine, and the floors are of Oregon pine.

Design No. 109 is of the residence of Clifton J. Platt, Pasadena, Cal. Mr. Platt was his own architect and Mark Lincoln the contractor for the same. The house has a frontage of 68 feet, and is 46 feet deep. The foundation is of cobble stone with nine wooden pillars supporting the porch roof. At the right hand of the porch is a large sun parlor enclosed with glass on three sides. The house contains eight rooms, which are finished in oak and Oregon pine natural. The floors are of Oregon pine. The lumber bill was \$1,400; plumbing, \$280; labor, \$1,000, and the entire cost of the house was \$4,800.

Design No. 110 is the home of Mr. Sohn, who is a well-known contractor and builder in Pasadena, and who designed and built his own home. The house contains nine rooms, a bath room and two toilets. The interior is finished in Oregon pine. There is hot and cold water in the entire house and it is lighted from the cellar to the garret by electricity. The round pillars supporting the balcony are of cobble stone, and the front porch has a cement floor. The house is 36 by 42 feet, and was erected at a cost of \$4,000.



No. 110. Home of Mr. Sohn, Pasadena, California.



No. 111. Home of E. H. Munson, Pasadena, California.



No. 109. House of Clifton J. Platt, Pasadena, California.

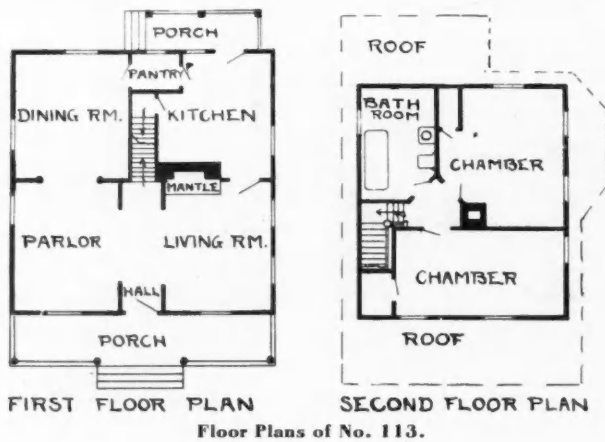


No. 112. Home of C. C. Thompson, Pasadena, California.

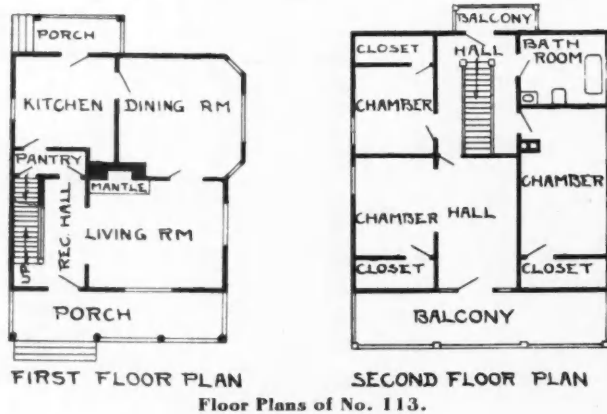


No. 113. Houses Designed and Built by E. O. Rognas, Spokane, Washington.

Design No. 111 is of the home of E. H. Munson, Pasadena, Cal. The architects of the same were Balch & Balch, and John H. Simpson was the contractor.



The house is 32 by 34 feet, exclusive of the porch, which is 8 feet in width. The house is one and a half stories and contains six rooms and a bath room. The bath room is equipped with a bowl, tub and shower bath. The exterior is sided with re-sawed red wood



siding with mitered corners. The interior is finished throughout with Oregon pine. It was built one year ago at a cost of \$2,800.

Design No. 112 is of the home of C. C. Thompson,



No. 114. Home of Jesse Clemens, New Dundee, Ont., Canada. C. H. Beckman, Contractor.



No. 115. Home of A. Hilburn, New Dundee, Ont., Canada. C. H. Beckman, Contractor.



No. 116. Engle House, Germantown, Pa.



No. 117. House Built and Owned by C. T. L. Hickman, Dalton, Georgia.

Pasadena, Cal. It is 40 by 56 feet and contains ten rooms, a bath room and two toilets. The foundation is of cement blocks. The interior is finished in oak with beamed ceilings and panel work between the beams. The floors are of polished oak. Chas. Crew



Frame House at Glencoe, Illinois.

finish is all in colonial and the first floor is finished in red oak, and the second floor in black ash. The house is heated by means of hot water.

Design No. 115 is the home of A. Hilborn, at New Dundee, Ont., Can. It was built by Chas. H. Beckman, of that city, at a cost of \$2,600, not including heating and bath room fixtures. It is built of cement brick and the interior finish of the first floor with black ash. The second story is finished with pine.

Design No. 117 is the house built by C. T. L. Hickman, in Dalton, Ga., at a cost of \$850. The house contains five rooms and a bath room. The sills are box sills 12 inches deep. The wall studdings are sized to 1 3/4 by 3 3/4 inches. All walls are plastered with Georgia wood fibre plaster. The ceilings are of 1/2 inch Georgia pine. The dining room is wainscoted 3 1/2 feet high. The roof is covered with No. 1 Georgia pine shingles. All inside wood is finished in oil, and the mantels are of neat oak.



Shingle House at Kentlworth, Illinois.

was the builder and erected the house at a cost of \$4,500.

Design No. 113 is of two houses located in Spokane, Wash., and gives a good idea of the modern and up-to-date homes built in that section of the country. They were designed and built by E. O. Rognas, of that city. One of the houses is 28 by 28 feet and has seven rooms, while the other is 22 by 28 feet and contains five rooms. There are basements under both houses and they are heated by wood furnaces. Spokane is one of the growing cities of the west and is known as a city of fine homes, and the illustrations shown herewith carry out this idea.

Design No. 114 is the residence of Jesse Clemens, located in New Dundee, Ont., Can. It was built by Chas. H. Beckman, of that city, at a cost of \$3,000. It is veneered with Milton pressed brick. The inside



A Woman's View About House Building

MORE THOUGHT AND ATTENTION SHOULD BE GIVEN TO A WOMAN'S COMFORT—GREAT SAVING IN TIME AND LABOR WITH SMALL ADDITIONAL EXPENSE

By Mrs. C. R. Lippmann

IT IS a peculiar fact that although a home is primarily considered a woman's kingdom, most homes—particularly those built to rent—are built without consulting a woman. As men are not familiar with house work, the result is that most houses do not make house work as easy as they might, with hardly any or very little extra cost.

To begin with, the kitchen—where the heaviest house work is done—is the room generally neglected in planning a house. Frequently, parlor, dining-room, library, etc., are planned first. What space is left is allotted to the kitchen. That is why so many houses have kitchens awkward in shape; generally too long, or too wide, or too narrow, or ill ventilated, or encumbered with awkward projections and corners.

Whether the housewife does her own cooking or employs help is immaterial here. She will do her work with less fatigue, or will be able to procure and retain help better, if the kitchen is treated and built, not as a room merely, but as a workshop where food is prepared. That the latter task is by no means a light one, can be shown by a few figures. For example, at three meals a day, a house wife must prepare about 1,100 meals a year. If in serving these she must walk only 25 feet from the range to the dining room table and back, making only two trips to and fro for each meal, it means a walk of 200 miles a year—equal to the distance between New York and Baltimore! And that is a very conservative estimate.

In order to save steps the kitchen should be laid out as a square room rather than oblong, and not too large, so that all parts may be reached with few steps. The sink should be in about the center of one wall; the range adjoining, either in a straight line or preferably at a right angle. Either on the other side of the sink, or within easy reach at a right angle should be the kitchen pantry or closet—if there is one.

It is possible to greatly improve on the latter without any extra expense. Leave it out altogether. Instead place around the walls on two sides (the other two being given up to sink, gas stove and range) two or three parallel rows of drawers and compartments—similar to a kitchen cabinet, but without the stoop-compelling lower compartments. They should be placed neither too high for convenient reach, nor too low to necessitate stooping; both of which are injurious to women. These shelvings should come to within about 30 inches from the ground. The upper tier should not be higher than 60 inches from the ground. Such an arrangement would not only make storing and handling utensils much more convenient, but also more sanitary; and would be easier to keep clean.

Being well above the floor and covered from above, dust and dirt would not be so apt to find access.

Don't say there would be no room for these shelves on account of the windows; for I advocate that the windows be made smaller in height, but greater in width, and that they be placed all along the wall above the shelves, on the order of transoms. The more of them the better. This would permit plenty of light without cutting up the wall space. Another great advantage would be the ventilation it permits. With the present arrangement and style of windows the cook is frequently exposed to a draft of cool air from the open window in the back, and the heat from the range in the front. The result is often a cold, if nothing more serious. The only alternative is to leave the windows closed and suffer in the stuffy atmosphere with its scents and vapors.

Ranges, at present, are invariably placed in corners. This makes them very inaccessible on that side for repairs, cleaning, etc. The range should have at least three sides free; though it would be preferable to have all four sides away from the wall, so as to facilitate frequent cleaning. The gas range should rest on a stone base, extending around the bottom by at least a foot. This would obviate the awkward task of placing oil cloth or linoleum under it—or else let it damage the floor. Whenever possible, the oven part should be high enough to avoid stooping.

The spigots in the kitchen sink should be nickled, as in the bath room. Brass takes too much work to keep clean and is not so sanitary. Instead of having two separate spigots, for cold and warm water, there should be only one spigot for both. It should be governed by both the hot and cold water keys or cocks. This would enable the housewife to draw water of any temperature desired by mixing the necessary amount of cold water with the hot water from the water back. That such an arrangement is very desirable is proven by its adoption for the bath tub. Why should not the kitchen be fitted with the same convenience?

The kitchen spigot should also be equipped with threads; so that instead of lifting buckets filled with water, the housewife or her helper can screw fast a piece of hose and run the water into the bucket on the floor, or out on the porch into the washer.

The kitchen sink should be enameled like bath tub or else sanitary stone (slate, etc.). A woman's pride is a clean-looking sink. This is almost impossible with metallic sinks, which show hard usage very quickly.

It is obviously preferable to have the bath tub in a separate room, rather than in the same room with the

closet seat. This does not cost very much more and can easily be accomplished by making, perhaps, an adjoining bedroom a little smaller, and giving up a part of the toilet room proper.

Under the present practice the bath tub is invariably placed tight against a wall. This makes it very hard, if not impossible, to clean the space behind it; and is apt to damage the wall from splashing. If the tub were set out, about 18 or 20 inches, these drawbacks would be avoided.

The lavatory, like the bath tub and kitchen spigot, should be equipped with a combination spigot for the same reasons as the latter.

Wooden wainscoting around the kitchen and bath room walls seems to me to be antiquated; since modern manufacturing methods offer better and cheaper substitutes in the shape of waterproof wall paper that can easily be kept clean with a damp rag. The wooden wainscoting, with its many grooves and interstices, offers too many lodging places for dust, dirt and germs.

All dust catching corners and openings should be avoided as much as possible. This applies particularly to mouldings along walls and on doors. Frequently fancy mouldings are put on with as many grooves as possible. Each one of them is a dust trap. The same principle applies to wooden base strips.

Climbing steps as often as a housewife finds it necessary is not conducive to good health, if the risers are higher than 6 inches. In many houses they are, in order to save a little space. It is also much better for the housewife's health to have a landing between each pair of floors, rather than a steep, straight stairway. Nor will this require much sacrifice in the way of space or expense. Stairways not equipped with banisters should be fitted with a hand rail, which often offers welcome help to a woman carrying up a load. Stair climbing for such purposes should be avoided altogether. This can easily be accomplished by the installation of a suitable (strong and roomy) dumb waiter—at least, from the cellar to the kitchen, if not to all the floors. The cost of such an installation is surprisingly small; particularly in consideration of the saving in steps and the protection to furniture or interior woodwork from scratches when heavy articles are carried through the rooms. Think how convenient such a little "hoist" would be for fetching coal, wood, and eatables from the cellar!

The location of the windows seems, in every case, to be decided upon solely for their effect upon the exterior appearance of the building; no matter how much the wall space will be cut up by them. As a consequence, many rooms, quite large so far as floor space is concerned, offer very little wall space to place the furniture without obstructing or obscuring one or more windows. Designers of homes sin in this particular, especially in the case of bedrooms. Windows

are placed in bedroom walls, for example, without considering the dimensions of bedsteads. A double bedstead is about 6 feet long by 5 feet wide. Yet how often do we find bed rooms where there is no wall space long enough to place such a bed along the wall without running right against a window. How many bed rooms have two windows in one side, cutting the wall into three spaces, neither of which is wide enough to permit placing the head of a bedstead against it. The same applies to couches, dressers, chiffoniers, etc.

It is well not to have so many windows of the style now in vogue in a room as to destroy most of the wall space for the disposition of the furniture. Transom and high oriel windows, in addition to perhaps one or two of the common style, will give as much light and air as desired without exposing the interior to the public gaze. Such windows also offer the advantage of improved ventilation. It will be possible to keep one or two of them open during the night without having the wind constantly sway the window shade to and fro, beating a disturbing tattoo. By controlling these apertures with a set screw and a sliding rod, reaching down well within a woman's height, their regulation is easily accomplished. They should also admit of being readily lifted out of their frames for cleaning purposes.

The same applies to the other windows. If they cannot be easily so arranged, they should be made to swing around two pivots, so as to have either side of the pane accessible from the interior. This will make window washing considerably less of a horror and danger than the present clumsy form of windows, which, for cleaning, require more or less climbing on the outside of the house.

Bedrooms should have communicating doors, even where there is a hallway. When it is desired to keep the rooms separate, they may readily be locked. On the other hand, parents will find these doors very handy for ready access to their children's bedrooms during the night.

For purposes of interventilation and equalizing the temperature between the rooms without leaving the doors open, they should be provided with transoms. The height of the doors as made at present may well be shortened for this purpose, making them also much lighter to swing.

It is universally agreed that in mild weather it is healthy to have all the windows open all the way. But the present form of windows does not admit of opening them more than half. This could be overcome by arranging windows so as to swing inward from hinges fastened along the side, in the same manner as doors. This would necessitate longer fly screens. But this small additional outlay would be compensated for by the larger influx of fresh air. Such windows would also be much easier to clean. Fly screens, by the way,

(Continued on page 87)



Pivoted Casement Windows

TELLING WHERE BEST USED AND COMPLETE DESCRIPTION OF HOW CONSTRUCTED — DETAILED DRAWING TO SUPPLEMENT DESCRIPTION

A PIVOTED casement window in a 16-inch brick wall is presented in this installment. The sash is pivoted on a horizontal axis. Pivoted casements should not be used in locations exposed to severe driving rainstorms, as it is practically impossible to make them weather-proof, especially at the pivots. Vertically pivoted casements do not offer as great a resistance to storms and cold as do the horizontally pivoted casements.

The frame is cut out of 2¼-inch stock, molded, and tongued for inside head and jamb linings. The masonry opening is constructed with straight jambs and the frame is secured in place by means of lugs on the jamb of the frame, which are built into the masonry as the walls are carried up. The section through the jamb is similar to Fig. 192, which is the section through the head of the window. The lug which is indicated there by the dotted lines occurs only on the jambs and not on the head, and is only shown in Fig. 192 to indicate wherein the head and jamb sections differ.

This section (Fig. 192) shows the head lining tongued into the rough frame and a cover mold in the angle of head lining and frame. The furring on the inside of the wall is of 1x2-inch strips placed 16 inches on centers for the wood lath or 12 inches on centers for expanded metal or galvanized wire lath. Grounds (G) are set wherever required for a nailing for the interior wood finish or as a gauge for plastering. The trim is molded and hollow-backed and has a back band and a small wall mold. This wall mold follows across top of base and across top and bottom of chair rails where such occur.

The masonry opening is spanned on the exterior by a stone lintel and back of this a timber lintel. A brick relieving rowlock arch is turned over the timber lintel, one rowlock being provided for every 18 inches in the width of the opening, but at least two rowlocks being provided for all openings.

Fig. 193 illustrates a vertical section taken through the window at the axis of the sash and shows the window closed by means of the solid lines, and open by means of the broken or dotted lines. The outside

and inside stop beads, marked "C" and "D" in Fig. 192, are cut at an angle of 45 degrees at "A" and "B" in Fig. 193, and half of each stop bead is fastened on the frame and the other half on the sash as indicated by the dotted lines which show the sash open.

The projecting part of the jamb of the frame between the two stop beads ("X," Fig. 192) is cut away between the horizontal dotted lines, shown a little above "A" and a little below "B," to allow the sash to turn.

Fig. 194 is a vertical section taken through the sill of the window and shows the joint of sash and sill rebated. The stone sill is cut with a wash, stools at either end and extends under wood sill two inches. The inside is finished with a stool and a molded panel-back. The furring, lathing and plastering is carried in back of the panel. The trim extends to the floor, finishing on molded stools.



A Fair Exchange

(From Judge)

A German who worked in the packing department of a large store tendered his resignation recently, and accompanied it with the remark that he was going in business for himself.

"Me und anodder feller ve make a business," he explained. "I vill giff der exberience und der odder feller vill giff der gabital."

"How long do you expect that plan to succeed?" asked the foreman.

"Oh, aboud fife years," replied the German. "Und den I vill haff der gabital und der odder feller vill haff der exberience."



Appropriately Named

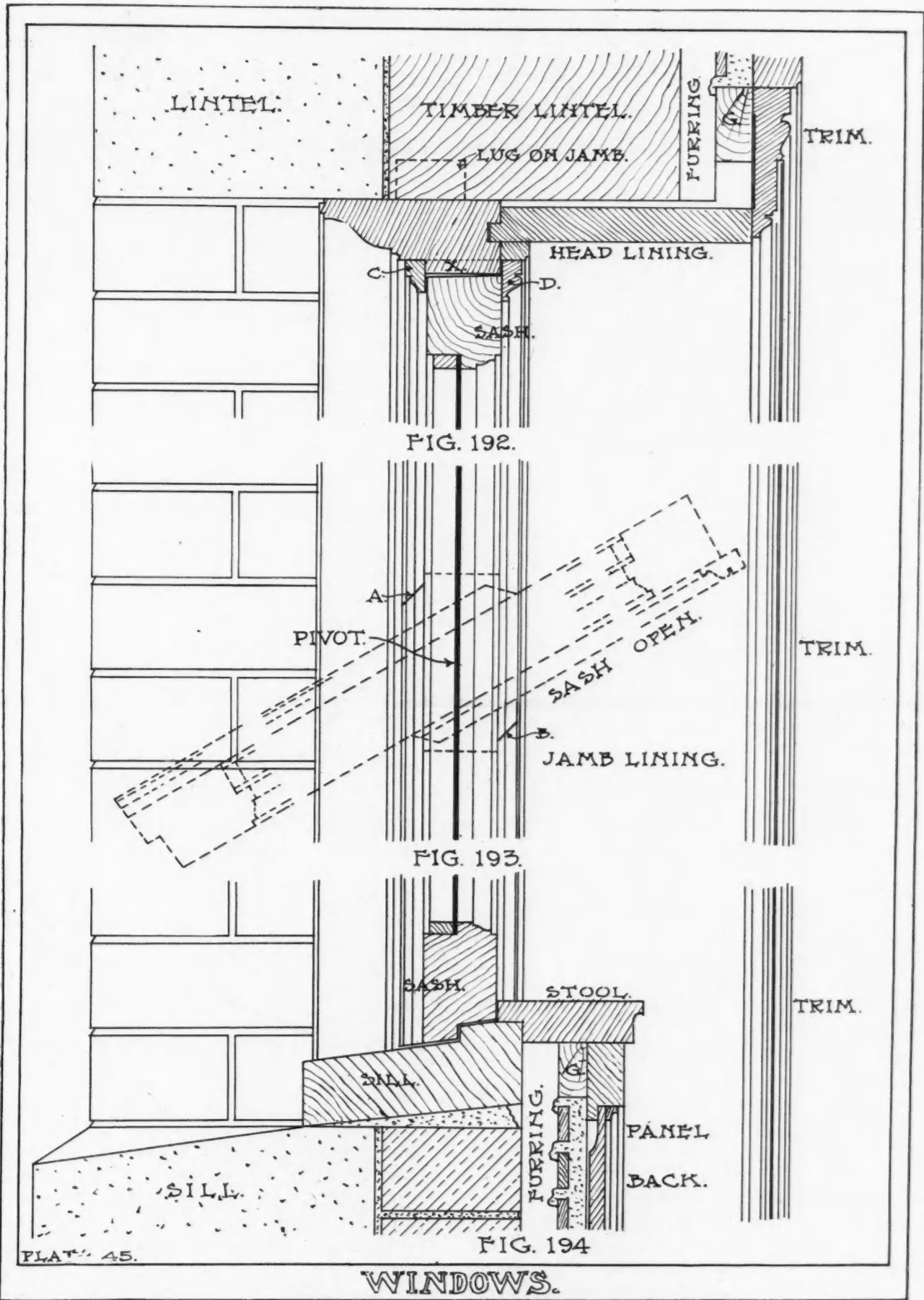
(From Judge)

The boy in the paint-store dashed hurriedly up the cellar steps and sought the proprietor.

"There's a barrel leaking in the basement!" he cried, "and the automobile stuff is just pouring out."

"Why do you call it automobile stuff?" asked the proprietor.

"Because," gasped the youngster, "it's running over everything in sight."





STEEL SQUARE.

ALFRED W. WOODS

How to Use the Steel Square

SHOWING HOW TO PROCEED TO FRAME A SQUARE TOWER WITH INCLINE SIDES UNDER DIFFERENT CONDITIONS BY AID OF THE DIAGRAMS, ALSO BY USE OF THE STEEL SQUARE

WE HAVE two questions before us, asking how to frame a tapering tower with square posts at the corners and how to apply the steel square to get the seat cut. While the subject is a good one, from a technical standpoint, it presents but little from a practical view to the average work-

man, because it seldom occurs that he has use for it. But, as it presents a good study, we have concluded to use it for this month's article. The subject is not a complicated one, but being one of those things that seldom come up in actual practice, it furnishes a problem that will start the average workman's thinking apparatus going some to solve it. By the use of diagrams, we will try to present the subject under different conditions in a clear and concise manner, as follows:



FIG. 151.

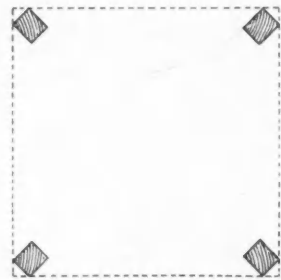


FIG. 152.

If there was no pitch and the posts were set square with the corners, as shown in Fig. 151, then the cuts would all be square and of course would be a very simple proposition. On the other hand, if the posts were turned so that they would rest at the corners, as shown in Fig. 152, then the treatments would be the same as in the case of a common hip roof, or in other words, the same as framing a square cornered spire,

such as for a church steeple. If it is desired to back the posts, then the center of the outer face should rest at the corner of the plan, as shown in Fig. 153; or if the posts are set square with the plan, as at Fig. 151, and given a pitch, then foot of the post, would not rest square with the corners of the plan but would be dia-

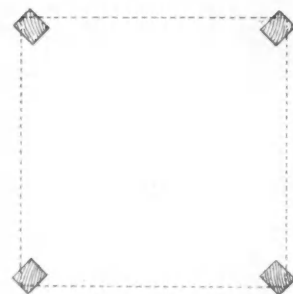


FIG. 153.



FIG. 154.

would all be square and of course would be a very simple proposition. On the other hand, if the posts were turned so that they would rest at the corners, as shown in Fig. 152, then the treatments would be the same as in the case of a common hip roof, or in other words, the same as framing a square cornered spire,

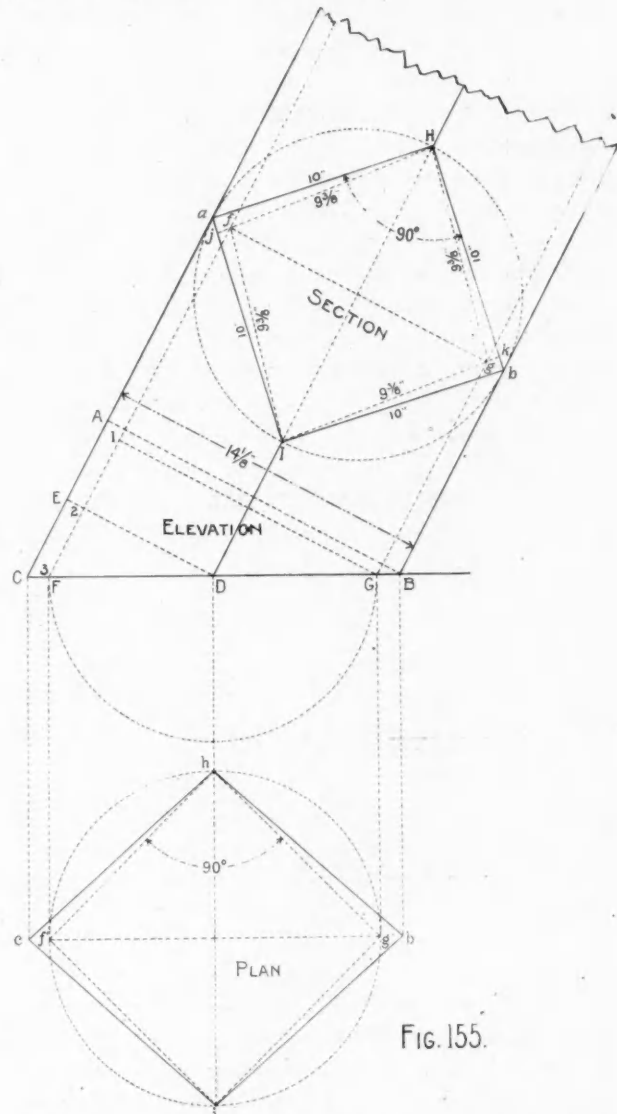


FIG. 155.

mond shape like that shown in Fig. 154. The diagonal of the square of the post one way would remain the same, as in Fig. 151, but the other way it is elongated according to the slant or pitch given the post, the lower the pitch the more will be the elongation. Therefore, the steeper the pitch, the less will

this be noticeable and when the post stands perpendicular, it disappears altogether. We can explain this better by referring to Fig. 155. The upper part of the figure shows the incline of the post. In this, the post is shown to be 10 inches square, as shown by the solid lines of the section. C, B, represents the seat cut. Now, passing on down to the plan, will show the out-

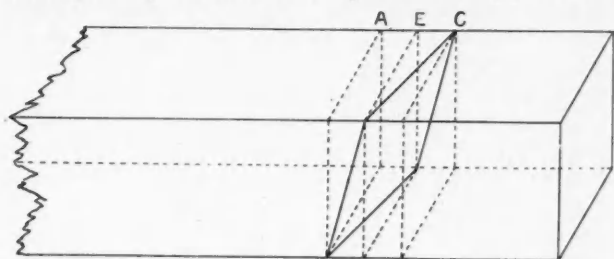


FIG. 156.

lines of the foot of the post, as c, h, b, i. The old time millwright, in making his wood spouting, always planned to have the spouting intersect square openings in the various floors, no matter what angle or pitch given the spouting. We have the same kind of an example in this post. Suppose it is desired to have the corresponding faces in plane with each other; to do this the posts would have to be backed, which would be necessary for a first-class job, especially the outer faces in case the tower is to be sided up. Otherwise the siding would only have a bearing at the outer corner of the post, or in other words, would be as shown in Fig. 154. The dotted line representing the siding. Now, in order to have the siding lay flat against the post, it is necessary that it be backed, and when so done, the foot of the post will rest on a perfect square, just as in the case of the spouting. This may be found by laying off the largest square that can be had in the plan, as f', h, g', i, and it will be seen

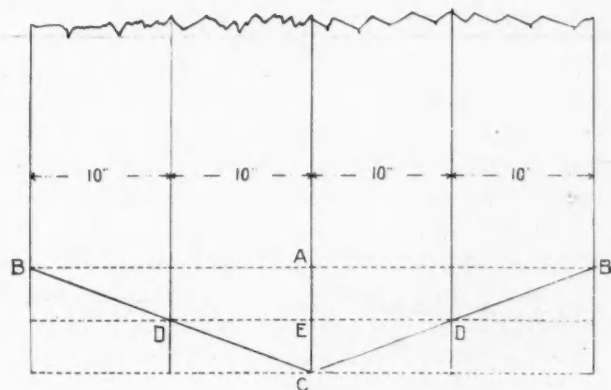


FIG. 157

that the dimensions are the same as that of the original post (10. by 10 inches), but the shape of the post has been transformed, as shown by the dotted lines in the section at f, H, g, I, which shows the amount of wood to be removed from the original timber, as a, j, from the outer corner to H and from this face remove j, f, to I. If it is desired that the inner faces be backed, then the same amount of wood should be removed, as shown at k, b, I and k, g, H, respectively.

Now, as for the seat cut, it may be found in several ways; taking it graphically, it will be more readily understood as shown in the elevation of Fig. 155. First draw an indefinite parallel line, as C, B, and from C lay off a line, as C, a, representing the incline of the corner post which, it must be remembered, represents the same position in reference to the incline given the sides of the tower, as a hip is to the common rafter in a roof of like proportions. Now, as the diagonal of a 10 by 10 inch post is $14\frac{1}{8}$ inches, as at a, b, or H, I, we lay off another line that distance from the line C, a, and parallel to it, as B, b. From B square to the line C, a, intersecting at A and from D, which is at the center of C, B, draw the line D, E, parallel to A, B. Then D, E, represents the radius of a circle that will circumscribe a 10 inch square, and where this circle intersects C, B, as at F, G, will be the length of the seat when the posts are backed. The points C, E, A, taken on the square timber and carried clear around the same, will give the points to cut to, as shown in Fig. 156. The cut being at the solid line,

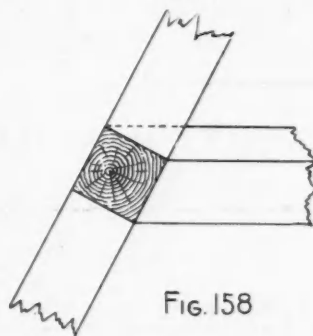


FIG. 158

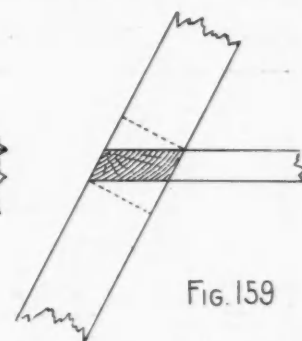


FIG. 159

as shown on the different sides of the timber. To prove this, it is an easy matter to make a full size pattern, as shown in Fig. 157. The four sections represent the sides of the timber and on the center line lay off the proportions, A, E, C. Trim to the outer lines, cut to the line, B, C, B, and fold on the three sectional lines so that the points B, B, will come together, and it will be found that the corners will coincide with that of the plan, c, h, b, i. Now, if we lay off another plan similar to Fig. 157, but using $9\frac{3}{8}$ inches (the side of the post when backed) for the width of the sections and the points 1, 2, 3, instead of A, E, C, trim and fold as before, will coincide with the corners of the plan, f', h, g', i.

But how may the seat cut be found with the aid of the steel square alone? Easy enough. Simply take the figures on the square that would give the seat and plumb cut for a common rafter of corresponding pitch to the sides of the tower, apply it to the sides of the unbacked post and the result will be the same. The backing may be found by laying off a right angle on the surface of the seat cut, which may readily be done with the steel square, and removing the wood on the outer side of the angle. If the inner faces of the posts are not backed, then the same figures used on the square for the seat cut will give the cut for the hori-

zontal cross pieces between the posts, and when in position will show the same as that in Fig. 158. If these pieces were dressed down to the shape as shown in Fig. 159 and the inner faces of the post backed, then the cut across the top would simply be a square

cut. On the other hand, if the post is left unbacked then this cut would vary from the square as the proportion shown in the plan at c, f', i, and the edge cut would remain in either case the same as the face cut of a roof board to fit over a hip in a roof of like pitch.

The Strength of Beams

ANOTHER IMPORTANT STEP IN CONTINUATION OF THE VERY PRACTICAL SERIES OF CALCULATIONS WHICH HAVE BEEN GIVEN IN PREVIOUS NUMBERS

By T. B. Kidner

“WELL, how are you getting along with your calculations of the strength of timber?” was the writer’s greeting as his two craftsmen friends and pupils came into the office again one day recently.

“Oh! we are doing pretty well and we can now remember the first rule or formula which you gave us without having to turn up the back numbers of the AMERICAN CARPENTER AND BUILDER to refresh our memories. But we struck a small snag yesterday, and although we have arrived at some sort of a solution, we felt that there was a proper way to work it out,

to so many courses of the brickwork, and thus save a lot of cutting for the bricklayer and a poor appearance afterwards. The wall is one brick thick (8 inches) and is to be carried up nine feet above the beam. The bricks are $2\frac{1}{8}$ inches thick and four courses measure just 10 inches.”

Having these particulars we proceeded as follows: First, we found the weight of the brickwork to be carried by the beam. Nine feet high, 8 feet wide and 8 inches thick gave us 48 cubic feet. A cubic foot of brickwork weighs about 1 cwt. (112 lbs.) so the weight to be carried was, of course, 48 cwt.

To find the breadth of a beam when the other data are known

REMEMBER THE RULE, (No. 2)

Put down:—

$$\frac{\text{Load X Length X Factor of safety}}{\text{Depth X Depth X Figure for wood X 2}} = \text{Breadth in inches}$$

Result:—

Note *The figure 2 is used when the load is evenly distributed.*

If the load is to be a central one, this figure must be left out

Fig. 1

and that is the reason of our visit today.”

The writer having expressed his readiness to help, the spokesman went on to explain the little problem which was worrying him and his mate, somewhat as follows:

“Up to now we have been finding the strength of some particular piece of timber when fixed and loaded in various ways. But suppose we knew the load that was to be carried by a beam, and wanted to calculate the size of the timber—is there not some way of doing that just as easily as finding the strength of a piece whose size we know?”

Having been assured that the calculations for such a problem were only a trifle more difficult than for the one now familiar to them, the speaker went on to state his problem more particularly.

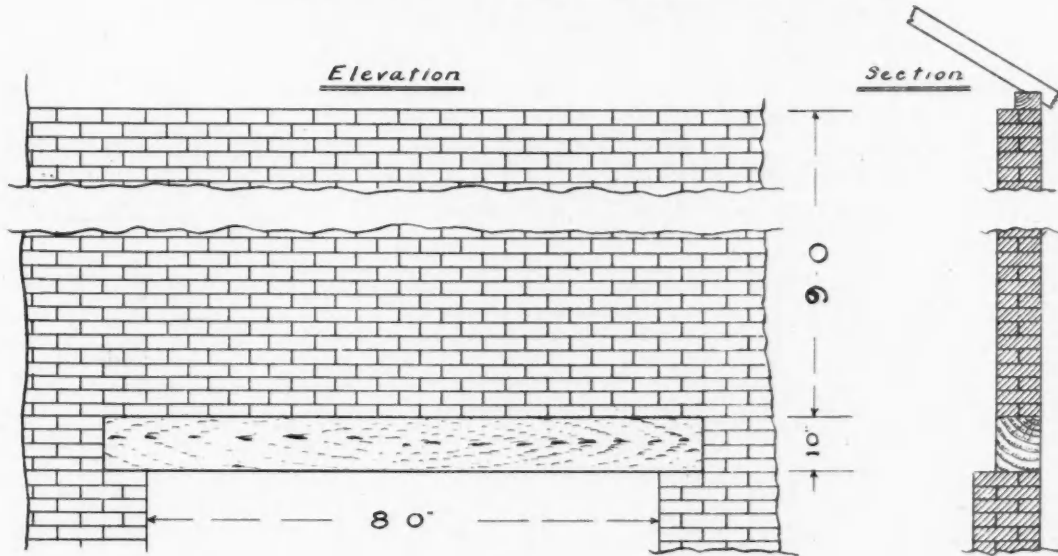
“There is an 8-foot driveway to be made through Johnson’s new brick store, and we want to find the size of the beam that will safely carry the weight of the brickwork in the story above the beam. We want to have the beam of such a depth that it will be equal

But the roof had also to be considered and we next proceeded to calculate the weight of that portion of the roof carried on the wall over the beam. From ridge to eaves the roof slope measured 20 feet; 20 feet times 8 feet gave us 160 square feet. Slates were to be used as covering and as the weight of a slate covered roof, allowing for wind pressure, is usually taken at $\frac{1}{2}$ cwt. per square foot, we obtained as the weight to be considered, 80 cwt. (160 times $\frac{1}{2}$).

The problem then resolved itself into this: One hundred and twenty-eight cwt. was to be carried as a *distributed* load on a beam 10 inches deep over an opening of 8 feet span. The load was to be stationary, or “dead.” How broad should our beam be to carry the weight safely?

It seemed best to follow the plan adopted in the earlier lessons and to give another rule or formula which could be easily referred to and, in time, remembered. This was written down as in Fig. 1, which is merely a simple way of stating a reversal of our first rule for finding the strength of a given beam.

THE STRENGTH OF BERMS



Calculation No. 1

$$\text{Load on Beam} = \left\{ \begin{array}{l} \text{Brickwork, 48 cwt} \\ \text{Slate roof, 80} \end{array} \right\} \quad \text{Total 128 cwt}$$

Length = 8-0 Factor of safety = 5 Depth = 10 in.

Figure for wood (Oak) 5 Figure for distributed load 2

$$\frac{128 \times 8 \times 5}{10 \times 10 \times 5 \times 2} = \frac{5120}{1000} \quad \text{or (about) } 5\frac{1}{8} \text{ ins}$$

Therefore a piece of oak 10" x 5 $\frac{1}{8}$ " is strong enough.

Calculation No. 2

Beam 7 $\frac{1}{2}$ " deep — other particular the same

$$\frac{128 \times 8 \times 5}{7\frac{1}{2} \times 7\frac{1}{2} \times 5 \times 2} = \frac{5120}{562\frac{1}{2}} \quad \text{or (about) } 9\frac{1}{10} \text{ ins}$$

Therefore a piece of oak 7 $\frac{1}{2}$ x 9 $\frac{1}{10}$ (in flat) would also do

With this rule before us, we put down our particulars as in Fig. 2. 128 cwts. for our load; 8 as our length; 5 as our factor of safety (dead load); 10 times 10 as our depth (squared), equal to four courses of brickwork; 5 as our figure for oak (see table on page 368, June number); and 2 because our load was to be evenly distributed along the beam.

The result, $5\frac{1}{8}$ inches, being less than the thickness of the wall to be carried, led us to try what breadth our beam would have to be if we made it only $7\frac{1}{2}$ inches deep; that is, equal to three courses of brickwork. Fig. 3 shows the calculation, which gave as a result rather over nine inches. As this was more than the thickness of the wall to be carried, it was decided to make the beam 10 inches deep, and for the better convenience of the bricklayer in starting his courses, to make the beam the full thickness of the wall. This, of course, was a stronger beam than was actually required, but was an error in the right direction. In point of fact, it is always wise to err on the side of strength in deciding on the sizes of timber to be used in construction, for no two pieces give the same results if tested. As remarked earlier in this series, the strengths of the various kinds of woods as given in most text books were obtained by averaging the results of hundreds of actual tests, and it was found that different pieces, even from the same tree, varied considerably. So serious is this variation, that many

architects require that beams or girders carrying heavy weights shall be ripped in half and the ends reversed. It is very common to find in specifications for beams in positions similar to that which is the subject of this present calculation, a requirement that (in addition to the usual clauses as to the quality, etc., of the lumber) the piece be "*halved, reversed and bolted together again.*" By doing this, any possible weakness at one end of the stick would be obviated, and a piece of even strength obtained.

Of course, in many parts of the world, iron beams have largely superseded wooden ones, but for a long time to come wood will hold its own in many districts for a variety of reasons.

To sum up the new lesson then, the first thing is the new rule or formula for putting down the known particulars. In doing this the things to be remembered are (a) the factor of safety; (5 for a dead load, 8 or 10 for a live load); (b) the figure for the particular timber used; and (c) the fact that a beam carries a distributed load just double of what it would carry when loaded in the center only.

+

An Irishman was shown through a jail. After he had made the trip, he was asked what he thought of the place. "Oh," said he, "there's one place I like here and that's the intrence out."

The Evolution in Home Building

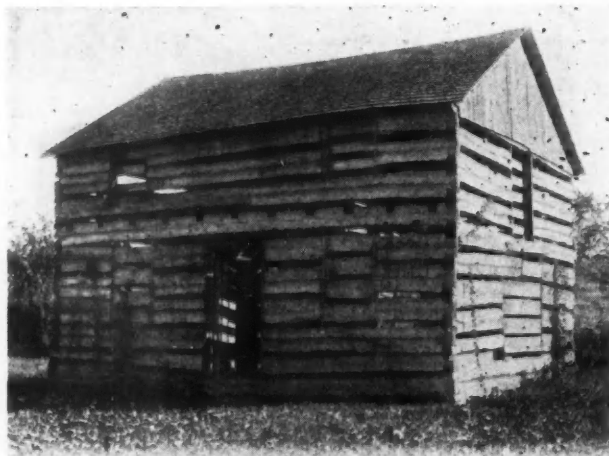
THE HOME AS COMPARED WITH THAT OF THE EARLY DAYS—THE PRIMITIVE HOME NO BARRIER TO THE AMBITIOUS—PRESENT DAY ADVANTAGES

By A. W. Woods

THIS being our annual house builders' number, great pains has been taken to gather the latest styles of the medium priced up-to-date home. The progressive man is never satisfied—always looking forward for something better; something to shorten the steps and manual exertion in general, all for the sake of convenience and that, in many cases, at the expense of the very object sought, i. e., to save the needed exercise necessary for body and mind. It is nice to have all of the conveniences that go to make up the so-called modern home, but it is not within the

lot of all to have these things to begin with, and perhaps it is best that it is so. Our ancestors, less than a century ago, braved the hardships of an unsettled country, living, in most cases, in a single room whose four walls were formed of hewn logs. The more pretentious dwelling may have had a porch in front and a lean-to in the rear, with nature's floor, for a kitchen, while the main room answered for all of the other rooms found in the modern house of today. We are inclined to believe they were more contented and happier in their homes than most people of today, surrounded with all of the boasted comforts and labor-saving devices. The simple life they lived, coupled with long endurances, is proof enough that proper exercise of both mind and muscle is essential for the good of the health. Some of our greatest men have risen from the humble log hut in the wilderness to the highest positions in the gift of the people, and their names will live as long as time shall last.

Recently, it was the privilege of the writer to step inside of a log cabin—not a residence, but a court house, built in 1838. In this building the immortal Lincoln appeared as a practitioner before the bar in a number of cases, along with other notable men, as the records now show. It is even said that Lincoln's first



(Continued on page 94)

PRACTICAL CARPENTRY

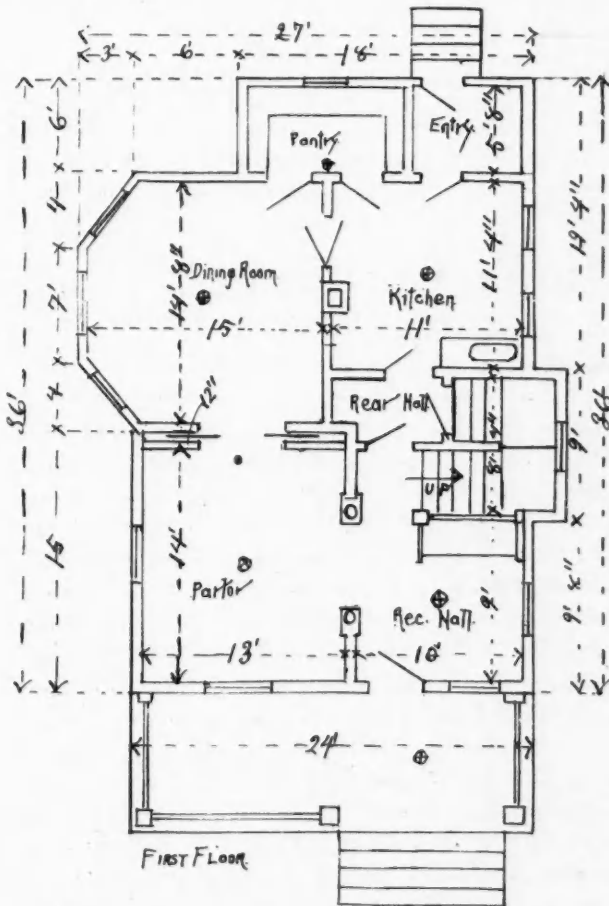
Planning the House and Stairway

SHOWING HOW TO BETTER THE ARRANGEMENT OF THE ROOMS BY CHANGING THE STAIRS—LAYING OFF THE STAIRS WITH SUFFICIENT HEAD ROOM AND HOW TO FIGURE SAME

By I. P. Hicks

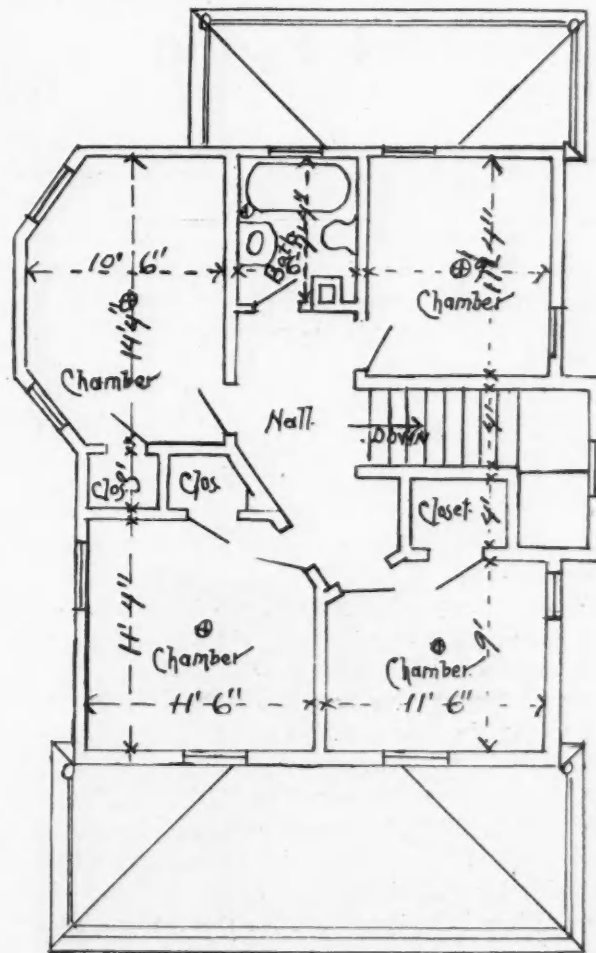
HERE we come again with another modification of our same old house plan, differently planned and laid out. This time we have made a few extensions which have enabled us to get all there is in the plan and all to the best possible advantage. The extension on the left side for a bay

We have found a very few people who object to this door because they do not want the smell of anything that is being cooked to get into the dining room. This might be all right if the cook was cooking sauer kraut or toasting limberger cheese, but the writer has no objection to the smell of good things when they are being prepared for the table, in fact, odors of this kind rather please us about three times a day and for 365 days in a year. We have no objection to this door, and just put it there for our own convenience, as being the shortest cut to the dining room. The pantry in this house is a roomy one, being about 5 feet 8 inches by 9 feet, with shelves on the two ends and



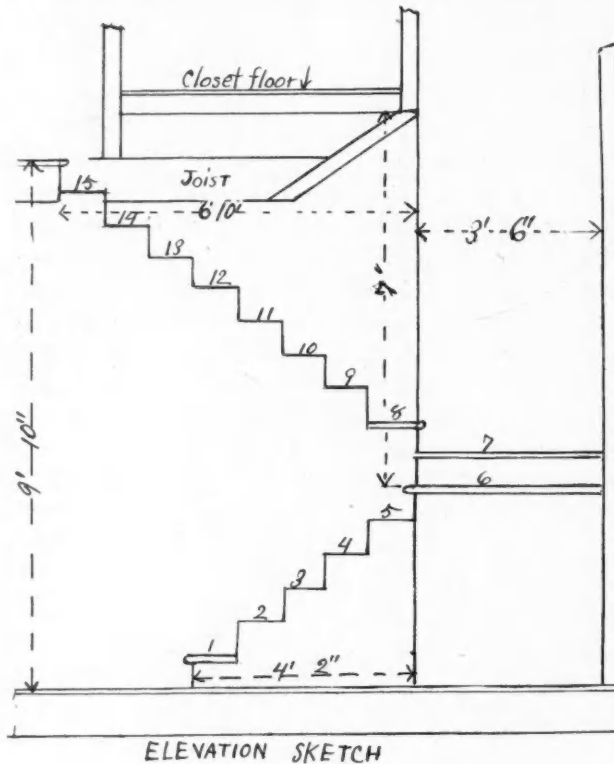
window, and carrying it up full two stories, helps out the size of the rooms both down stairs and on the second floor. The extension of the rear has been somewhat enlarged and put into better shape. It has been extended to the left far enough to get a door from pantry to dining room as well as one from kitchen to pantry. This feature will be found very desirable.

Then there is a door from kitchen to dining room.



SECOND FLOOR.

a wide counter shelf running full length across the long side. The rear entrance in this plan will be found a useful space, having room for the refrigerator and plenty of space left to get in and out with anything likely to be wanted in the kitchen. Now look at our kitchen, 11 feet by 11 feet 4 inches, fair size for a city or suburban residence, and no ugly projecting corners in it; even the stairs do not cut into this kitchen. You will notice that there is a small rear hall between the kitchen and the front hall. This feature is desirable to many because it shuts off the view of the kitchen



ELEVATION SKETCH

from the front hall, makes a good place for a telephone, a place to hang coats and wraps, and provides a way to the cellar from the rear hall, which is also near enough the kitchen to be handy. An outside entrance can also be provided to connect with the cellar stairs on a grade landing directly under the landing of the main stairs. This will admit of entering the cellar from the outside or entering the rear hall from the same way, and with many it is an entrance much preferred.

We now come to the main stairs, and see what we have done. In this case we have a projected stair landing. This landing is supposed to project two feet from the building, and is a kind of double landing, taking the place of two steps in the stairs—by this method of putting in the stairs they do not cut into the center of the house so much on the second floor, which enables us to get very much better rooms on the second floor. The stairs do not have all to do with this lay out of rooms, for the extension of the bay window helped us out with the rear rooms and the bath.

Compare the sizes of the rooms in this plan with

the former plans and you will notice a big improvement. Reception hall, 9 by 10, clear of the stairs. Parlor, 13 by 14 feet. Dining room, 14 feet 4 inches by 15 feet. Kitchen, 11 feet by 11 feet 4 inches. Pantry, 5 feet 8 inches by 9 feet. Rear entrance, 5 feet 8 inches by 6 feet 6 in. Second floor: Front bedrooms, 11 feet 4 inches by 11 feet 6 inches and 9 feet by 11 feet 4 inches; rear bedrooms, 9 feet by 11 feet 4 inches and 10 feet 6 inches by 14 feet 4 inches; bath, 6 feet by 7 feet 4 inches.

We have two good front rooms in this plan on the second floor. Now some people wouldn't live a minute if they could not have a closet in each one of these rooms. Now we don't want any one to die studying over our plans, so we have planned a good sized closet for this room which, on account of the stairs, the floor in the closet must be raised to make sufficient head room for the stairs. Our elevation sketch shows how this is planned. The stairs are laid out for a 9 foot story with 2 by 8 second floor joists, counting the plastering and floors the stairs are about 9 feet 10 inches from floor to floor. Now we have plenty of room to make this an easy stair. We find the rise is 118 inches and that we have 15 steps and 16 risers, which makes the rise exactly $7\frac{3}{8}$ inches, which will make quite an easy rise. Now, with the landing extended, we have plenty of room for width of tread or step, so we figure these 10 inches. On the first run there are five steps, which make 50 inches, or 4 feet 2 inches; thus the stairs will start 4 feet 2 inches from the face of the stair landing. The two landings make two steps; then we turn to the second run and find we have eight steps, and counting 10 inches to the step we have 80 inches, or 6 feet 8 inches. We have to allow for thickness of riser and there should be an inch to spare for emergency; hence the header should be cut back 6 feet 10 inches from the landing line. Now for the closet over the stairs. This closet is located over the first run of stairs and we want head room from the first landing. This being the case, we measure up from the front of first landing the amount required for head room, which in this case we have fixed at 7 feet, and do not consider it too much. This shows the amount it is necessary to raise the floor of the closet, being about 15 inches above the second floor. As we descend the stairs we do not want the head room to grow less, consequently we cut the joists off on a slope same pitch as the stairs, or about the same, and put in pieces on the slant, as shown. This will make a fair job of it and you know we must have that closet. We do not expect to modify this plan any more. We have now done our best with it and reached the limit. Next we will try to make some interesting elevations to fit the floor plans we have made.



Enclosed find \$5.00. Send the AMERICAN CARPENTER AND BUILDER until money is used up.

DE VEAU BROS., Lexington, Mass.



Figuring Out a Blower System

SIZE OF PIPES TO USE TO ACCOMPLISH THE WORK—MANNER OF INSTALLING THE SAME—ADVANTAGES OF A BLOWER SYSTEM

THE use of fans for blowers for taking the shavings and dust away from wood working machines has long since been recognized as not only a matter of luxury but a matter of necessity in equipment. It has taken quite a time for those operating only a few machines to come to a general realization of the fact that there is an advantage in having these shaving exhaust systems even for one or two machines. It's a good sign, this awakening to this fact, because it's an indication of that broad-gauged thoughtfulness which is conducive to better work and more satisfaction in the work. Indications of this awakening are found in correspondence seeking information pertaining thereto, one such letter being as follows:

"Will you please publish a description of how to put in a blower for carrying the chips from two machines. What size of fan and pipes will be required, speed of fan, and are the chips drawn through the fan, or is it so arranged that they are driven by it? I will be very thankful for your rendering of the problem."

The question asked in regard to whether the chips go through the fan or not, may seem queer to some in the trade, yet it is a natural one. Of course they go through the fan; they are sucked into the fan and discharged out by blowing. For this reason many people argue that a fan should not be put below, but always above the machines, for when put below there is some danger of dropping a wrench, or something of that kind down a pipe and doing damage to the fan. Some fans, however, are put below, and piping so shaped that there is not a great deal of danger of stuff other than shavings getting through them. Still, there is some danger, and with the fan above the machines this danger is eliminated entirely, for nothing will go through the fan except something which the fan can pick up and carry through the pipes with its own suction, and it is very seldom that anything can be drawn up in that way which will do damage to the fan.

As to the size of the pipes and fan required, it depends a little. But to give this writer an idea for a starter, I would suggest that a five-inch pipe be used on the single surfacer, four-inch pipes on the top

and bottom heads of the sticker, and three-inch pipes to the side heads. That would give you two three-inch pipes, two four-inch and one five-inch, and the total area of your main lead to the fan, and of course the area of the fan itself is determined by the combined area of these pipes. The total area of this bunch of pipes, of course, is not found by adding the diameters all together, but by finding the number of square inches contained in each and adding this together. This gives in the present instance practically 60 square inches, to be exact 58.905. This would call for a fan having an inlet of about nine inches. In other words, a pipe nine inches in diameter has an area of 63.617. This is smaller than exhaust fans are usually built. The Sturtevant catalogue, for example, shows its smallest fan, size No. 30, with an inlet of 11 inches. This fan for ordinary work would have to run 2,200 revolutions, and will readily handle not only shavings from these two machines, but will furnish some surplus energy for any other machines that might be added, and it would probably be better to get a fan of this size, even though you haven't work enough to load it to anything like its full capacity.

With a fan of this size you can be more liberal in piping the machines named. You can put a six-inch pipe to the surfacer, five-inch to the top and bottom heads of the sticker, and four-inch to the side heads. This will probably be better too, though they will do very well on the sizes named above.

A whole lot of the fan requirements depend on where you want to deliver the shavings to. If you just simply want to blow them out into an open bin, or out of doors somewhere, and do not have to elevate them, or convey them any great distance, it is rather a simple problem, and in times past people have made fans that answer this purpose very well themselves, have made both the fans and the spouting. Usually when a fan of this kind is home made it is made of larger diameter than high speed fans generally used, so that they may be run at a lower speed.

The rule for figuring piping, that is, to find the area of a circle or a pipe of given size, is to multiply the square of the diameter by .7854. To simplify this matter, however, there is usually furnished in catalogues of fan manufacturers a table giving the area of pipes

of all sizes, from one inch and up to 60 inches, which simplifies the work of figuring out the size lead or main pipe it takes to handle any given number of branches. In all work of this kind it must be kept in mind that the total area of the main lead must equal the total area of the branches, and also the lead or main pipe must be reduced behind each branch, that is, in that part which extends beyond the branching out of a pipe to the planer, the extensions must be reduced in area exactly the amount of the branch taken out. Then, as another branch is taken out beyond, the lead must again be reduced in the same manner, so that the area in the main pipe everywhere will just equal the branches there and beyond. This makes the matter look a little complicated at first, and yet it is comparatively simple. In large institutions where the machines are not all in operation at the same time, there may be some variations from this rule, some latitude allowed for the machines not in use. Where machines and floor spouts are not in use they should have valves for closing them, so that the others which are in use under this kind of an arrangement will be sure of giving the best service. The general idea is, where the combined areas of the branch pipe exceed the main lead to keep enough of them closed to maintain a fair equation of area.

It's a good idea in all this blower system business to have, as well as pipes leading to each machine, some others coming down to the floor and making floor spouts, so to speak, with hinged lids that act as valves.

These spouts are shut off the majority of the time and are not a heavy drain on the system, and they come in mighty handy for cleaning up around the machines, for then instead of having to carry away the shavings and dust that will accumulate, it is simply swept into one of these floor spouts and is carried into the fan. There is no danger where a fan is overhead of anything being carried up that will do damage to the fan, but be careful of these floor spouts when the fan is below and you are simply sweeping into a descending spout, for then nails, bolts and all sorts of things that may injure your fan get mixed into your shavings.

There are men in every city who make a sort of specialty of installing these fan systems, and there are others who advertise to furnish them no matter whether you are located nearby or not, and usually it is a much better plan to have people of this kind install your blower system than to undertake putting it in yourself. Of course there are isolated places in small plants that seem like it would not be worth while going outside to hunt some one else and that a man might do the work himself. It's all right, too, if you want to experiment with it and have the patience, but even if you want to do it yourself, it's better to communicate with the makers of fans, and also the makers of piping for this special purpose, not only with a view to getting material for the work, but also to get ideas and specific information about installing. Generally they are both glad and well fixed to give reliable information on all these points.

California Redwood in Its Everyday Uses

ADVANTAGES OVER OTHER MATERIAL IN CONSTRUCTING PIPE LINES FOR CONVEYING WATER—ITS PROPERTIES AND HOW BEST APPLIED

By H. A. Crafts

CALIFORNIA redwood is great in the arts as well as in nature. It is one of the standard lumbers of the Pacific coast. It is seen in nearly all branches of mechanics.

It is used in building houses, both inside and out. It makes an elegant interior finish, being rich in color and grain and taking a polish to perfection.

The mill men of California are at present exerting themselves to introduce redwood into the eastern markets, especially into the Chicago market. Hitherto redwood lumber as used in the east has been in the shape of shingles. But even in that humble form it has made a reputation; and that is for its lasting quality. A certain house in Boston, Mass., was covered, thirty-one years ago, with redwood shingles. The original shingles are on the house today and are said to be as good as ever.

A prominent Knight Templar from the east, while attending the recent conclave in San Francisco, had his attention called to the beautiful redwood finish to be seen in some of the interiors in that city. He was so struck with the wood that he countermanded by a telegraphic message an order that he had given before

starting for the coast, for the interior finish of an elegant family residence, now in course of construction, and left an order with a San Francisco lumber firm for enough redwood to take the place of the eastern lumber previously ordered.

California lumbermen say that the demand for redwood lumber is increasing. Yet the supply is limited. The principal redwood forests extend along the coast from the northern boundary of the state nearly to the Golden Gate. They extend back from the coast from ten to twelve miles. There are some smaller forests south of San Francisco, but they do not count much.

Humboldt county has the largest bodies of redwood. It had originally 530,000 acres in redwood forests. Forty-two thousand acres have been cut, leaving 488,000 acres standing. It is estimated that upon this acreage stand not less than 49,000,000 feet of lumber. The present rate of redwood consumption is about 250,000 feet annually. At that rate the Humboldt county supply would last nearly two centuries. But experts figure a greatly increased use of the redwood, and predict that the supply will be about exhausted one century hence.

To enumerate all of the mechanical uses to which California redwood is put would weary the reader of the ordinary newspaper article. But one of these uses is so striking in its character and effect that it deserves mention; that is its manufacture and use in stave pipe for municipal domestic water supply, irrigation, water power and outfall sewers. Kindred to this use is the construction of immense redwood tanks for holding water, oil, wine or any other liquid.

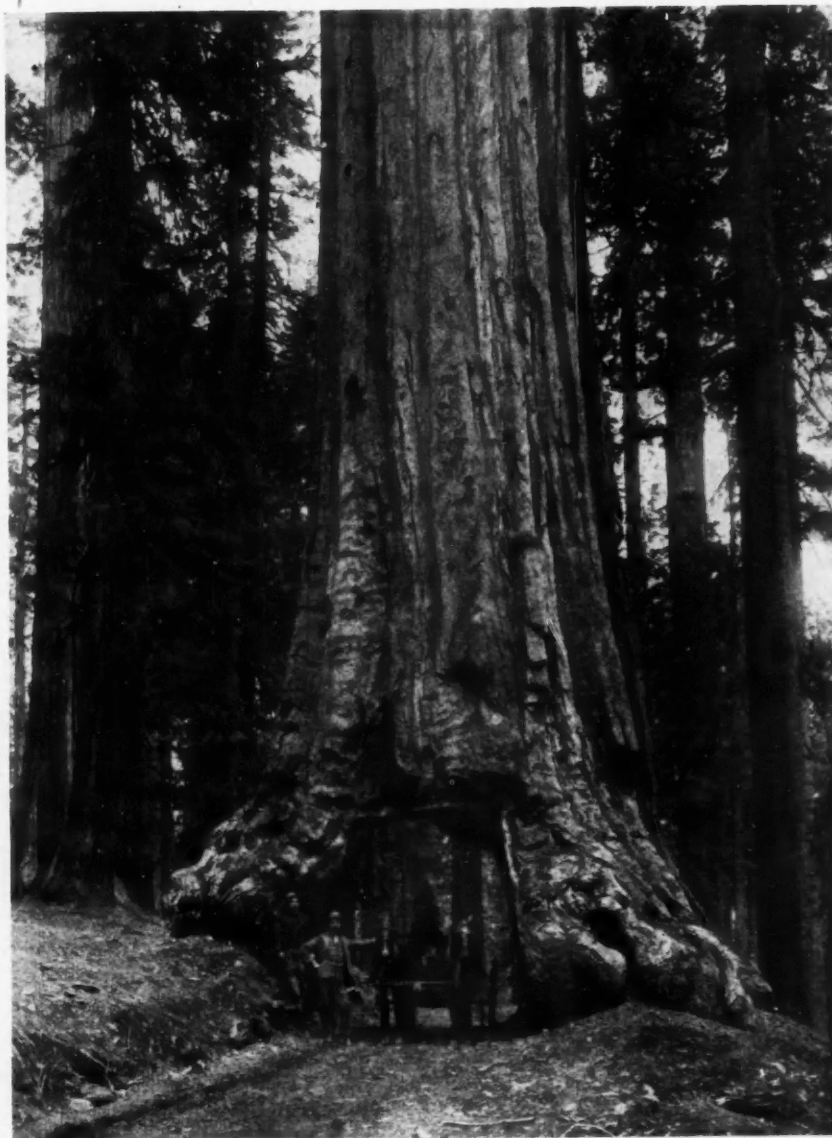
The Redwood Manufacturers Company of San Francisco has at its lumber yards at Black Diamond a tank made of redwood staves 31 feet and 9 inches in diameter and 18 feet high. The holding capacity of this tank is 100,000 gallons. The tank is perched upon an immense trestled tower 75 feet high, and is used to store water for fire protection.

The redwood stave pipe as at present constructed varies in size from 8 inches to 9 feet, internal diameter, and one San Francisco firm has in contemplation the construction of a stave pipe of redwood not less than 10 feet internal diameter. In the construction of water works the California redwood stave pipe may be seen all the way from San Francisco to Butte, Mont., and from Los Angeles to Portland, Ore. It is finding its way into the extreme east also. The Excelsior Wooden Pipe Company of San Francisco has just secured the contract for putting in a domestic water supply system for the city of Lynchburg, Va. The pipe is to be of redwood, 20 miles long and 30 inches inside diameter. The same company recently put in a redwood water power pipe at Cornell University, New York, having an internal diameter of 60 inches.

For the construction and installation of stave pipe the California redwood is excellent. First, the redwood logs are of such immense size and so free from knots and other blemishes that they furnish more clear stuff, foot for foot, than any other log in use. Redwood is also free from pitch seams, another strong point in its favor. Then it has great power for resisting decay.

And when thoroughly seasoned, redwood is less in specific gravity than almost any other wood extant. It weighs under these conditions only about $2\frac{1}{2}$ pounds to the board measure foot.

This is greatly in its favor in instances requiring its transportation beyond railroad limits and into remote and rugged regions. In its "knocked down" state the redwood stave pipe may be lashed in sections upon the backs of burros and thus carried up steep mountain sides, and over country where no vehicle may be hauled. This makes the pipe far superior to iron or steel pipe, which must necessarily be carried to its

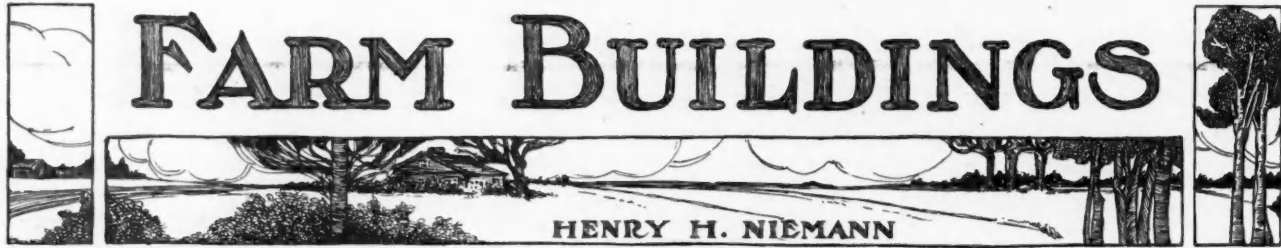


They do not turn out for the big California Redwoods but drive right through them

destination in its completed form. Thus the redwood stave pipe will be seen doing duty all over the west in the construction of works for water power plants, hydraulic mining, irrigation and domestic service.

The manufacture of redwood staves is quite a simple matter. They are run out upon an ordinary machine known as a "sticker," the edges being cut on radial lines, while the sides are cut on concentric circles.

The stave pipe in the laying may also be made to assume ordinary curves quite easily on account of its flexibility, the various sized pipes being laid on curves whose radii vary from 125 to 800 feet in length.

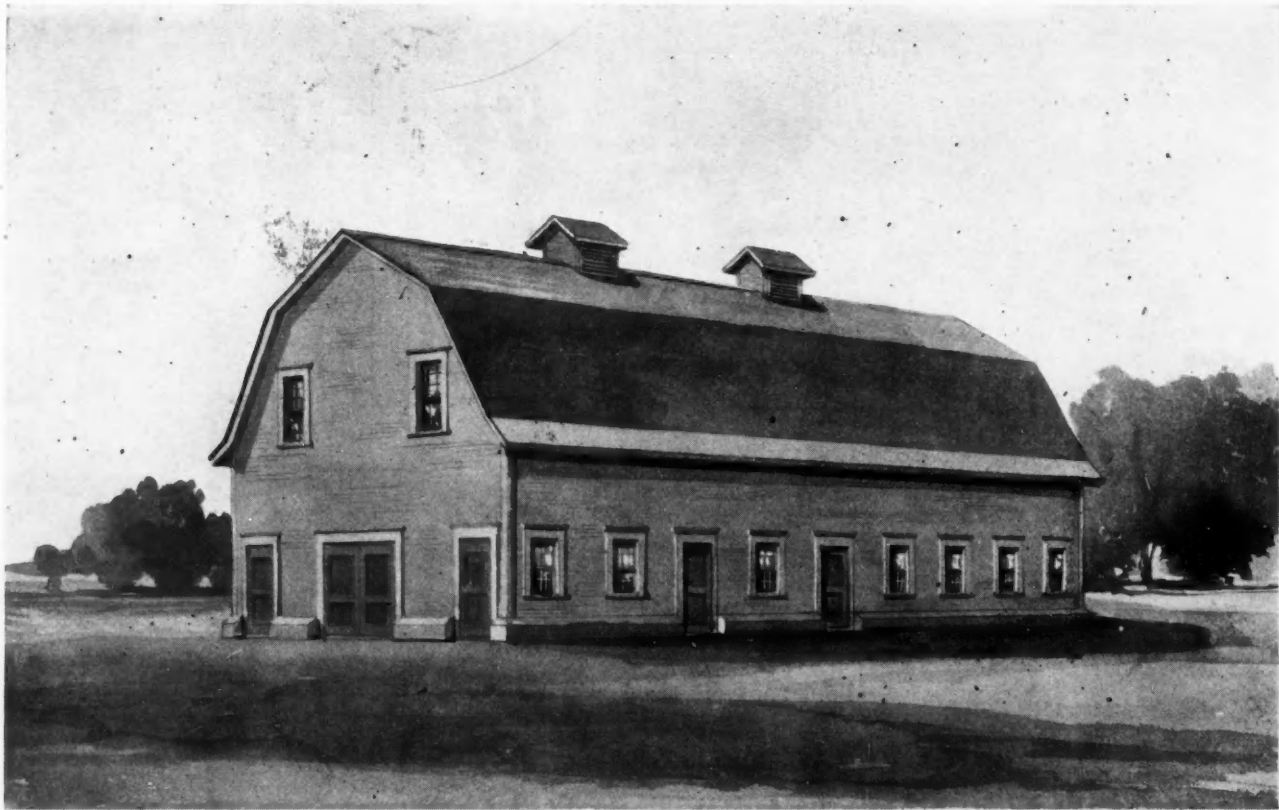


A Practical Barn

PERSPECTIVE AND FLOOR PLANS SHOWING INTERIOR ARRANGEMENT—COMPLETE DESCRIPTION TELLING ABOUT MATERIAL USED AND METHOD OF CONSTRUCTION

THE barn illustrated this month is for general farming purposes designed with the view of obtaining the best results in return for the amount of money invested, not only for a short term, for the original cost may be considerable compared with its capacity, but for a permanent investment, as it is de-

signed for strength and convenience combined with durability and utility. The barn illustrated this month is for general farming purposes designed with the view of obtaining the best results in return for the amount of money invested, not only for a short term, for the original cost may be considerable compared with its capacity, but for a permanent investment, as it is de-



signed for strength and convenience combined with durability and utility.

The foundation consists of a solid concrete wall with a wide concrete footing course to prevent settlement and run far enough below the grade to prevent damage by frost and extended far enough above the grade to protect all wood work from moisture. The lower floor is of cement which extends up the side walls about two feet above the floor leaving no wood work to come into contact with any moisture from the floor.

The original cost of the cement work is considerably above the old way of building, which consisted of a

found that the cement bottom is by far the cheapest because when once in place it is there to stay.

The sill consists of a double 2 by 6-inch plate which is fastened to the cement work by means of anchor bolts built into the wall, spaced about six feet apart and the top of the wall being spread with fresh mortar, the plate is placed on this mortar while wet and bolted down so that all space between the top of wall and the plate is filled solid with mortar. Upon this plate the studding are nailed and braced at all corners and angles by fitting pieces of studding in between the studding and also by extending the sheathing boards



SOUTH SIDE ELEVATION

down to the bottom of the plate, making a strong job.

The hay floor is set on a 2 by 6 ribbon, gained one inch into the studding and well spiked into place.

The roof is constructed by forming built-up arches constructed from 2 by 6 rafters spliced at the angles with 1 by 10-inch boards nailed to both sides.

These arches are all completed before they are raised and after they are raised upright into place, they are well spiked on top of the plate directly over each stud.

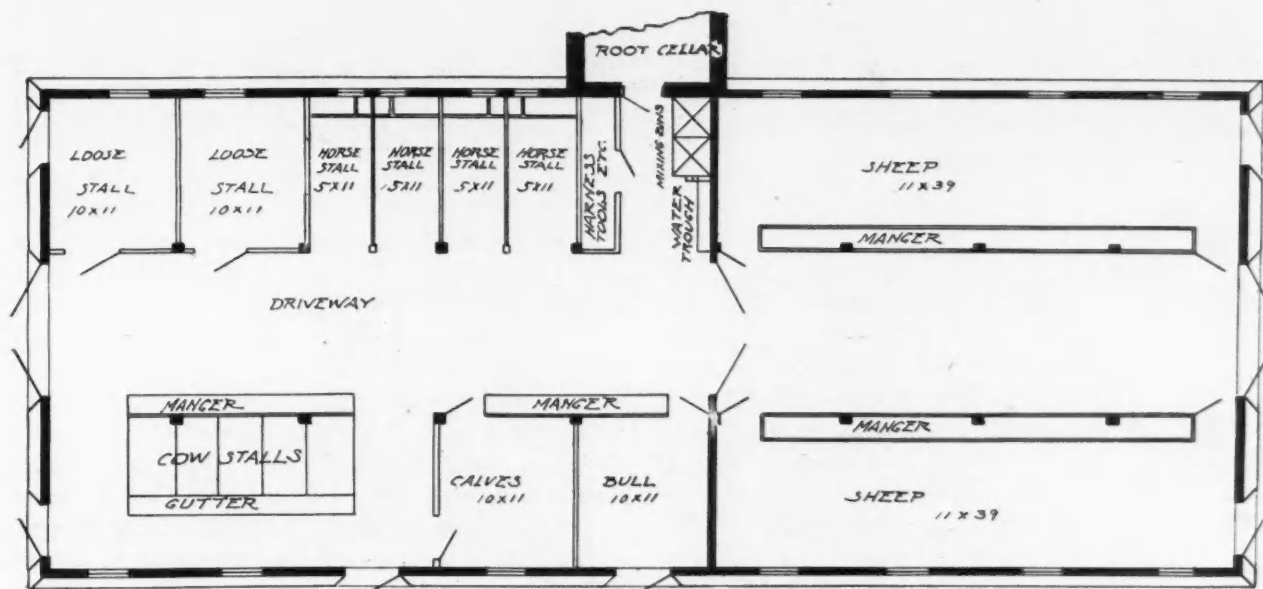
This barn is designed for a climate requiring the ding and then braced with a 1 by 10-inch board nailed a very strong roof and does not require any braces or clear span without obstructions.

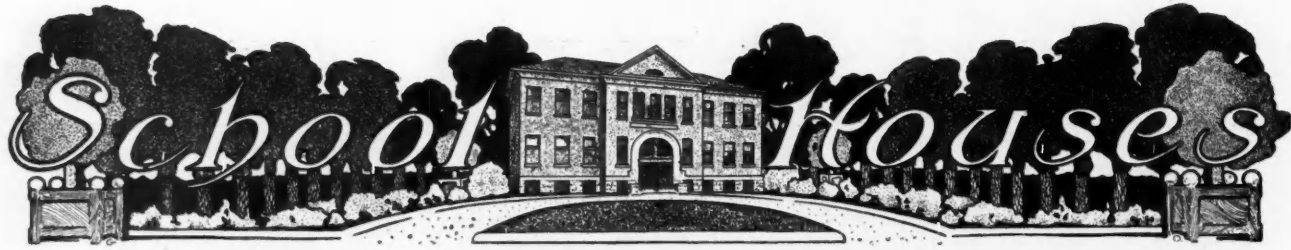
supports in the center, leaving the entire hay floor one to each side of each rafter and studding. This makes soiling of stock in the summer and feeding ensilage winters. There is a driveway through the center of the barn so that the soiling crops and the ensilage may be fed to the stock directly from a wagon or overhead track conveyor to the mangers.

At the middle of the north side is a root cellar constructed out of thick concrete walls with a heavy reinforced concrete roof which has a slight pitch away from the building. This roof starts at a level with the hay floor and gradually sloping down to the ground and is covered with planking and used as a driveway to the hay floor so that the hay can be hauled directly into the hay loft and taken to either end of the barn with the hay fork. This root cellar roof also has a trap door so that the roots can be dumped from the wagon through the roof without further handling.

As will be seen from the cut of floor plan this barn contains on the ground floor, stalls for cows, horses, calves, etc. The west half of the barn and the east half is fitted up for sheep with an air-tight partition.

The King system of ventilation is used and the walls are lined with hair felt or heavy building paper and inside face of studding are covered with matched boards, making the walls very warm in winter and cool in summer.





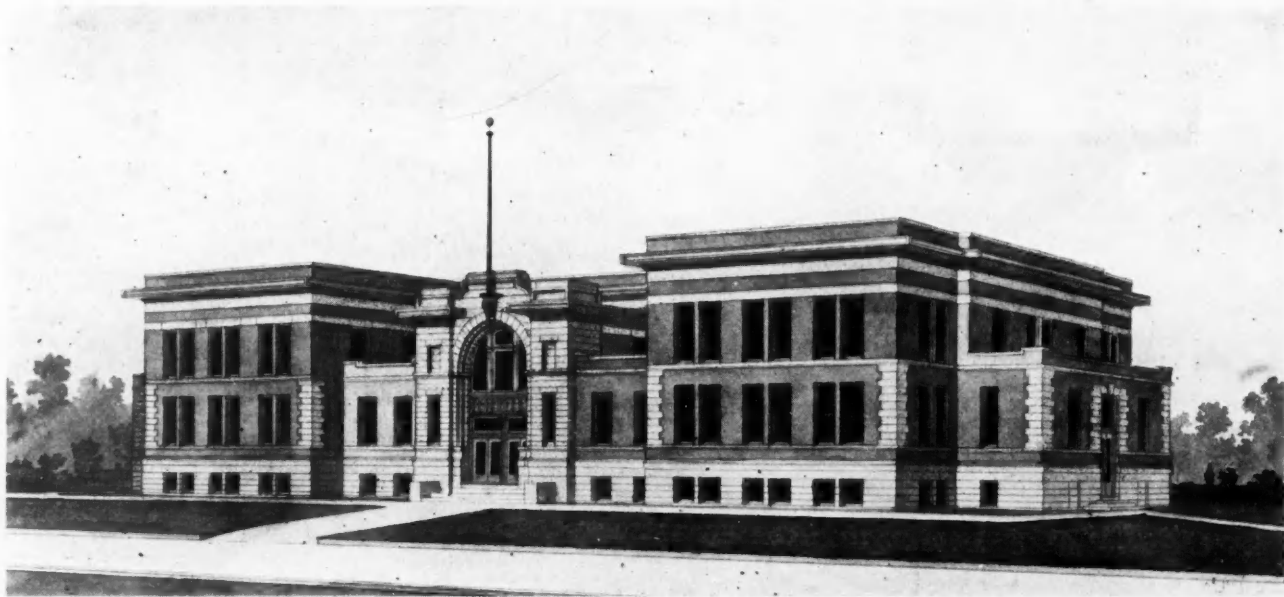
Modern Public School Building

COMPLETE PLANS AND ELEVATIONS OF AN UP-TO-DATE SCHOOL BUILDING—DESIRABLE FEATURES WORTHY OF ATTENTION

WE ARE this month illustrating a new and modern public school building which will be erected in Hamilton, Ohio. The architects of the same are Geo. W. Barkman and Geo. W. Ashby. The building will be two stories in height and will

ing room and two class rooms. Attention is also called to the boys' and girls' shower baths, which is an excellent feature and should be installed in every up-to-date school building.

The first floor has five exits and entrances, which



have ten rooms, five on the first floor and five on the second floor. Besides this a large assembly hall has been provided for on the first floor which can be used for exercises of all kinds.

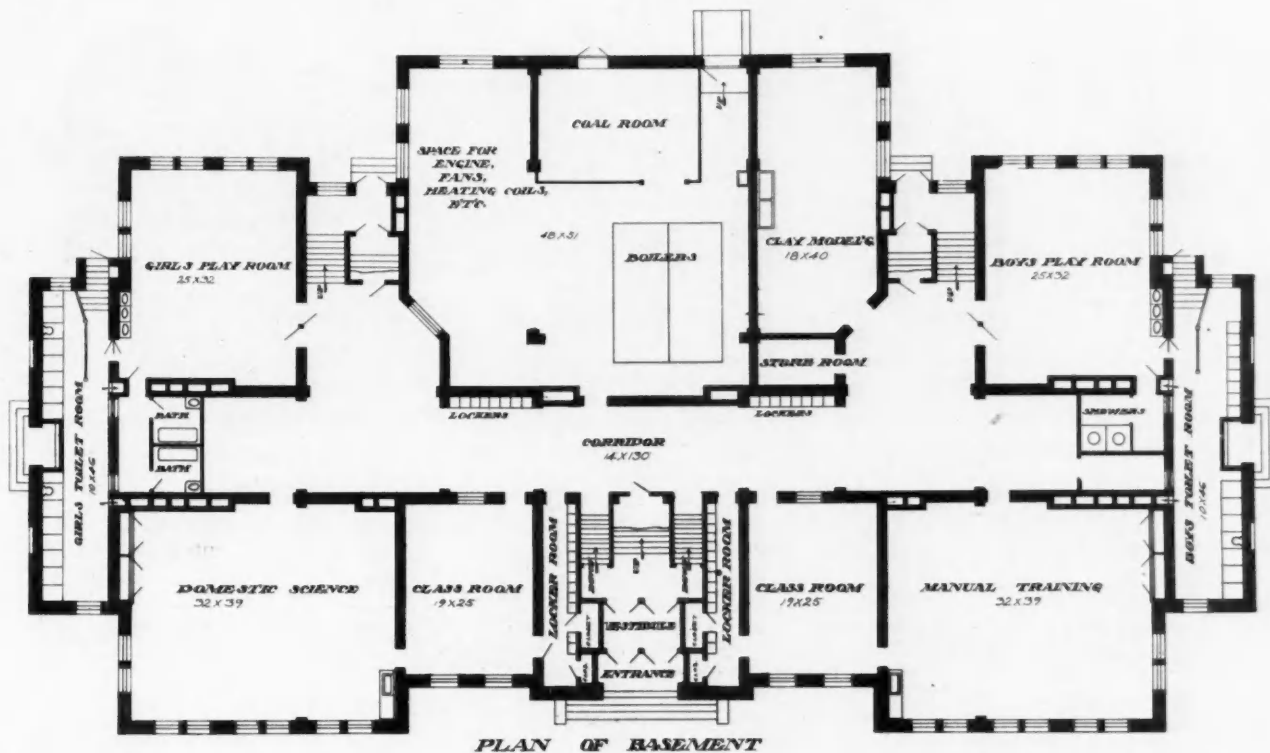
In the basement of the building will be the boys' and girls' play rooms and toilet rooms, boiler room, manual training room, domestic science room, clay model-

are a desirable feature at any time, and especially so in case of fire or accident.

A corridor 15 by 156 feet runs the entire length of the building and all rooms enter into it. The assembly hall is also fitted up with a gallery, which is entered from the second floor, doing away with the crowded condition usually existing at any school entertainment.



FRONT ELEVATION



PLAN OF BASEMENT

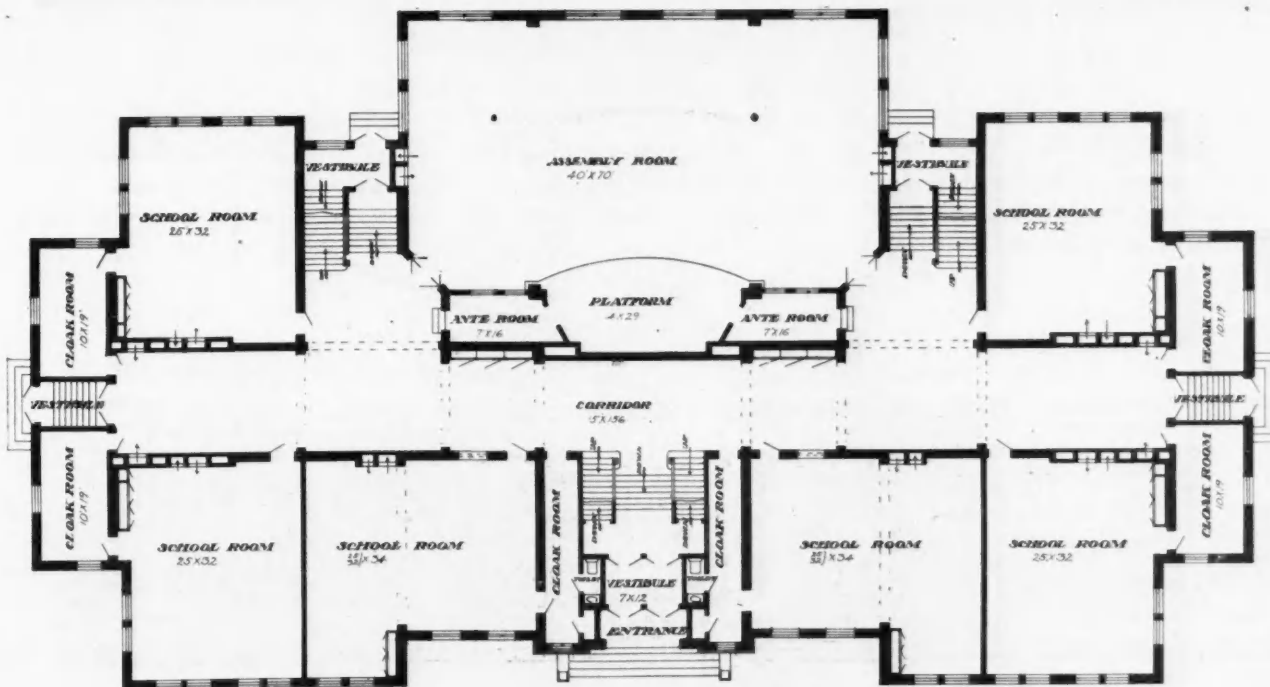
All of the class rooms are 25 by 32 feet and are provided with cloak rooms. On the second floor is also the principal's room, library and museum. The museum can be used for any other purpose if desired, either a lady teachers' room, or an emergency or rest room.

A new feature in this building is the arrangement of the toilet rooms, which are outside of the main building, but connected with it. The kind of material to be used in the construction will be red paving brick and Bedford stone trimmings.

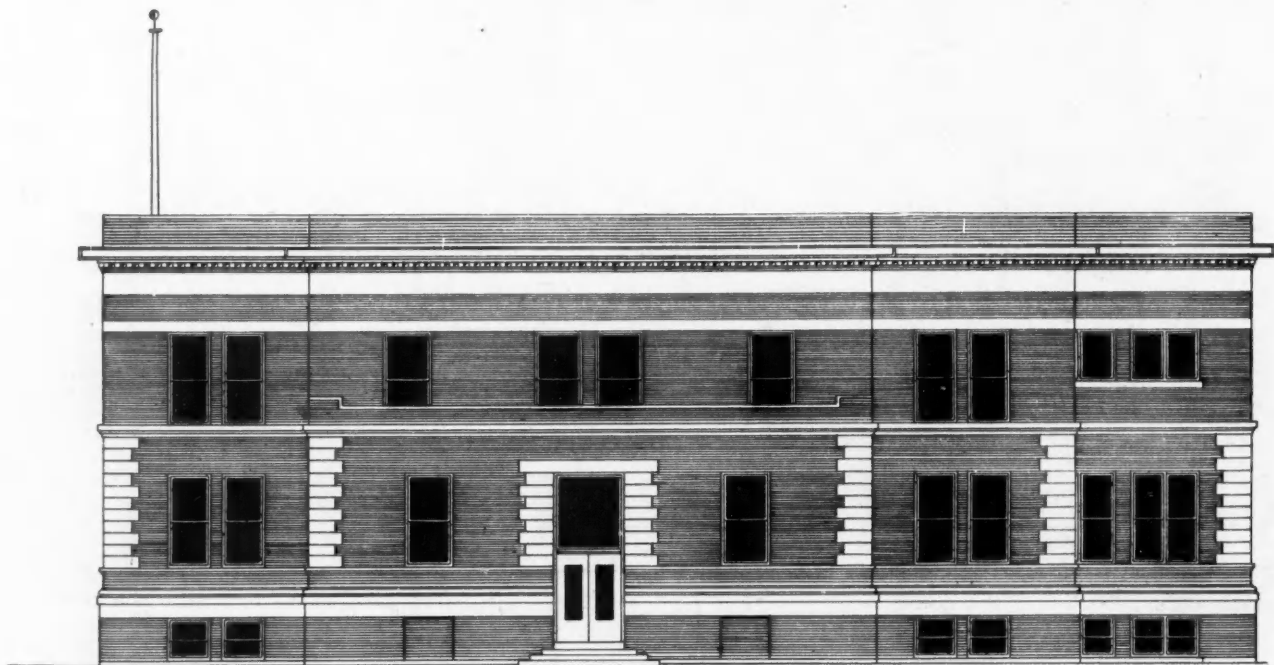
A Woman's View About House Building
(Continued from page 71)

should be made of finer mesh, so as to keep out the dust as well as the flies.

None of the points mentioned above will add very much to the cost of a house. The extra expense would hardly exceed one-half per cent of the total. In many cases the omission of the wainscoting, the kitchen closet, etc., will more than save the slight additional cost of transoms, etc. The latter more than pay for themselves in improved ventilation. All authorities



PLAN OF MAIN FLOOR



END ELEVATION

agree that our houses are insufficiently ventilated in winter, when people are afraid to leave the windows open.

The suggestions made here and the objections pointed out may seem trivial to men. But every woman, every one familiar with the daily task of looking after the meals and the comforts of a family will readily agree that this work ought to be, and can be, considerably lightened by arrangements such as outlined above. If women will but assert their opinions and experience in such matters, designers and constructors of houses will readily act upon their advice.

It means a great deal in connection with the words, "a happy home," which is one of the sacred American ideals.



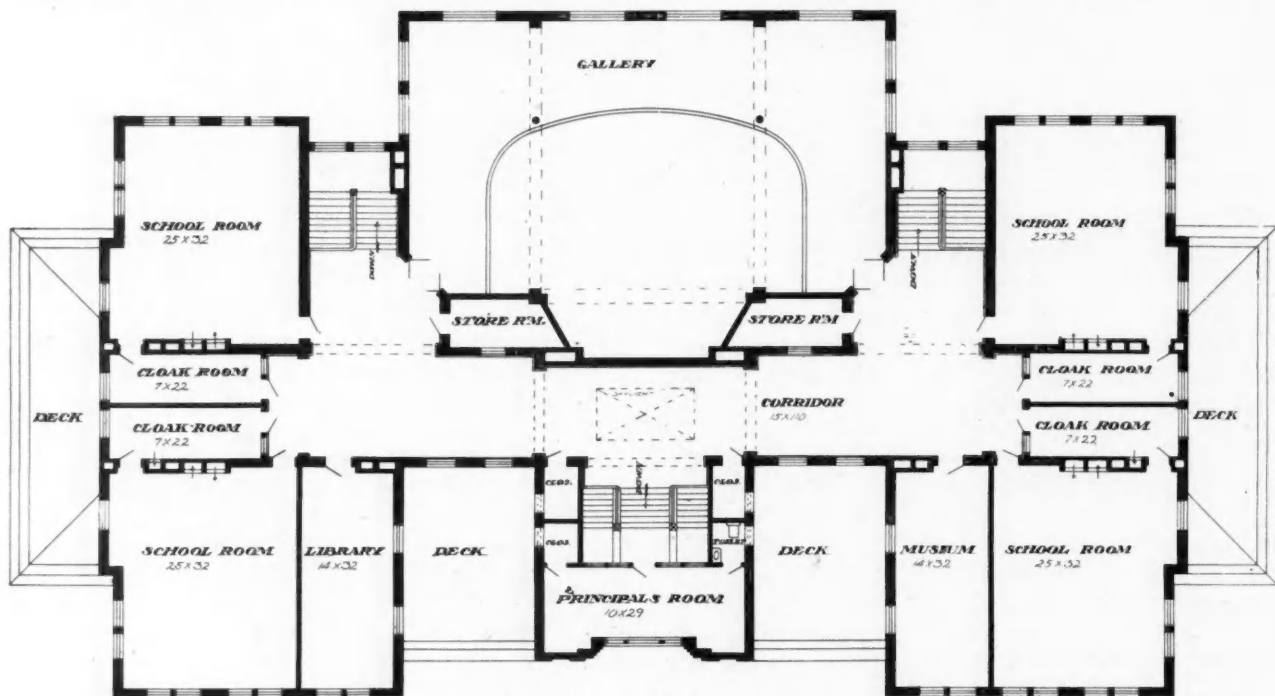
Looking Up

The Rev. Mr. Fourthly—My friend, have you fixed your eyes on your mansion in the skies?

Knicker—No; it gives me a crick in the neck just to look at the Singer building.—*New York Sun.*



Labor, wide as the earth, has its summit in heaven.



PLAN OF SECOND FLOOR

PAINTING

Edward Hurst Brown



Suggestions for Painting the House

IMPORTANCE OF PAINT IN BRINGING OUT THE BEAUTY OF THE HOUSE—ECONOMY IN USING GOOD PAINT—EFFECT OF CLIMATE UPON VARIOUS KINDS OF PAINT

ONE of the most important questions that confronts the home builder is that of paint, for upon the correct selection of the colors and the harmony to their surroundings will depend much of the artistic beauty of the house, and upon the quality of the paint, which serves to envelop the structure in a weather resisting film, will largely depend the durability of the wood and metal portions of the building. The painter is expected to cover up the deficiencies of all the other mechanics, to hide stains and defects in the woodwork; to fill up and render invisible the nailholes and other imperfections caused by the carpenter; and, by the proper disposition of the colors selected, to bring out the lines of the building and enhance its effectiveness. The function of paint, it has been well said, is both to preserve and to beautify. Moreover, in no other portion of the work of building is it so difficult to detect faulty or fraudulent practices, either on the part of the manufacturer of the paint or on that of the mechanic who does the work. The carpenter uses lumber which can be inspected before it is put in position, and it takes but little practice for the inspector to determine whether the specifications have been followed as to the dimensions of the timber, or whether the kind of lumber has been used that has been called for. Defects like sap and knots show upon the surface. The carpenter can be watched and it shows at a glance whether he fits his work neatly together or uses the proper number of nails. An architect soon learns to judge of the quality of stone or brick, and can tell by inspection whether the mortar is properly made of good sand and lime or whether it is imperfectly mixed from loam with scarcely enough lime to hold it together. Plumbing materials show their quality on their face, and though the work of the plumber may be more or less hidden, the peppermint and pressure tests reveal its defects. So it goes with every other branch of building till it comes to painting. Here the property owner must depend upon the painter, and he in turn is dependent upon the manufacturer. Few painters are able to detect whether the material they buy is what it purports to be. Linseed oil may be largely adulterated with water and this adulteration cannot be detected. Foreign seeds

may have been intermingled with the flax seed, owing to the carelessness of the farmer, yet it would require a very expert chemist to detect the fact—but in either case the durability of the paint film has been impaired. Deliberate adulteration with mineral or rosin oil is too frequently practiced by unscrupulous supply houses, who well know that few painters possess the knowledge of chemistry that will enable them to detect the fraud. And we have merely taken the oil as a type of the adulteration which is possible and unfortunately altogether too common with respect to every material that enters into the composition of paint. So-called white leads are largely sold that contain a large percentage of extenders and adulterants; colors that are far from being what they claim; turpentine that is doped with the cheaper mineral oils; and varnishes, claiming to be pure kauri gum and turpentine, in which these ingredients are replaced by rosin and benzine. The painter who looks first of all for a low price, permits the glib tongued salesman to lead him astray into purchasing materials of this kind, and persuades himself that they are what has been represented because the label says so. Nor can the architect or the property owner detect by such inspection as they are able to give, whether the materials furnished are of the grade that has been specified. In the case of materials like mixed paints and varnishes, which are put up in sealed packages, there is little safety in specifying that the goods shall be delivered to the building in unbroken packages. Even though the architect sees the painter open the cans or barrels, he cannot tell whether the materials are afterward applied as they come from the can unless he stands by and watches every brushful of paint or varnish as it is applied. There are so many opportunities for the unscrupulous painter, who has taken a contract at a lower price than it is worth to do the work honestly, to do an inferior job and to save money by doing it, that it is practically impossible to so carefully supervise a painting job that cheating is impossible. Even the mechanics, in order to make their work easier, will dilute the paint with turpentine or benzine or will stir water into it, causing the brush to slip over the surface easier and requiring less muscular energy to apply the paint. The "boss" does not

always detect the trick, but the result soon shows in defective paint surface. The writer knows of one case where one of the leading painters in New York City was tricked by his journeymen, who poured water into the paint used for a ceiling in a handsome residence. As a result, the paint perished very quickly and the painter was obliged to do the work over again at his own expense.

Every different kind of wood requires a special treatment. The atmospheric condition must also be taken into account in mixing the paint. More driers must be used on a damp day or in cold weather. The absorbent nature of the surface must be carefully considered. The only thing that will enable one to know exactly how to treat any given house on a given day is experience. While it is possible for the average handy man to brush on mixed paint and to cover the surface with a coat of color, it is practically impossible for him to do a thoroughly mechanical job, to putty up the nail holes and other defects as they should be puttied, and to avoid laps that will show streaks on the surface, unless he has learned to paint. On certain classes of rough work, it may be true that "anybody can paint," but it is poor economy for the man who is building himself a home to employ anybody but a skilled mechanic to paint his house for the first time—whatever may be done on subsequent paintings. The first painting of a house is the foundation upon which all subsequent coatings must rest, and unless it is properly done, with the proper materials, it will inevitably cause as much trouble as though the foundation of the house were built with rotten stone laid up in mortar mixed with loam and without enough lime in it to act as the binder.

The next thing that must be remembered is that it is more economical to pay a fair price and get a good job than it is to accept the estimate of a man whose figure is so much below that of his competitors that the difference would seem to require an explanation. As it has already been explained, it is so easy to deceive the owner or the architect that the man who bids too low is under great temptation to make good, after he has found himself up against a losing game, by using materials of inferior quality, and by using a coat less than the specifications call for, wherever he thinks he can do so without detection. It has been stated over and over again by reputable painters that when the same quality of work is intended, there should not be a difference of more than ten per cent between the highest and lowest estimate on any job, provided all the men estimating have measured correctly. This being the case, it is wise to look with suspicion upon an estimate whose amount is much less than ten per cent lower than the average of all the figures handed in. Moreover, it is well to inquire into a painter's reputation for honesty and into the character of the work he has done heretofore. There are many painters who would rather lose a contract than take it and fail to carry out their agreement, both in letter and in

spirit. In every community, there is at least one painter who has a reputation for the good quality of his work, which he has built up by years of business probity, and who could not afford to risk his reputation by doing inferior work. Such a man will naturally demand a higher price than the man who is seeking every contract in sight, and cares little how low he bids to get it, thinking to make good by slighting the work or by the profit on the extras, which are sure to be needed when he is doing the work. But it is true economy to pay the higher price and get a job of painting that will give permanent satisfaction rather than to accept the bid that does not yield a living profit and which inevitably means disappointment.

It is not our purpose here to speak at length of the best materials to use in painting the new home. It is sufficient to say that, as a rule, a priming coat of white lead and linseed oil, with the necessary turpentine and driers, will be found to give the most satisfaction, because this gives an elastic undercoat and affords a firm foundation by reason of its penetration into the pores of the wood. Ochre should not be used, because the cheaper ochres sold as "priming ochres" form a hard coating which has a tendency to throw off all subsequent coats of paint—more especially after the second or third painting. Venetian red and mineral brown have given good satisfaction as priming coats when the subsequent coats are dark in color. After the first coat, either a good quality of lead and oil paint mixed by the painter or a first-class mixed paint will ordinarily be found to give satisfaction. The proper paint to select will depend upon many things. The climate has much to do with it. A paint that will wear very well in the drier atmosphere of the northwest would soon go to pieces if exposed to the salt laden air of an Atlantic seaboard town. Moreover, if a shop mixed paint is to give satisfaction, the services of a skilled mechanic are required to do the mixing. Unfortunately, the decadence of the apprenticeship system has brought about a great dearth of skilled painters, and this has been increased by the fact that, as a rule, most of the painting is done in the spring and fall, and hence a journeyman painter has less steady employment than any other journeyman in the building trades. This fact has particularly acted to discourage boys from entering the painting trade. A machine mixed, or ready mixed paint, if of good quality, will be more thoroughly mixed and more finely ground than the shop mixed paint—although this statement is not necessarily true of the cheapest grades. And right here it is well to say that since every item entering into the cost of paint making has advanced in price in the past few years, that the property owner must expect to pay a fair price if he wishes to buy a paint of any real value. The science of paint manufacturing has made very rapid advances during recent years and many of the mixed paints on the market give very good results. The property owner, when buying or specifying a mixed paint, should concern himself first

of all with the record of this particular material. He should not buy a particular make or brand because it is cheapest by the gallon—that is usually the poorest kind of economy, because a cheap paint will rarely wear well and will seldom cover as well as the better grades—except in the case of certain colors which are cheap because of their dark color and the absence of any white base in producing them. If a dealer recommends the use of any particular brand, the first question that should be asked is what it will do. The true test of a paint is its durability, its economy in original application, taking covering power into account and the cost of renewal. Some paints that will wear very well on the first application, perish in such a manner as to make the cost of renewal particularly expensive. As a rule, a paint should be avoided that perishes by peeling off in large flakes, and which will require scraping or burning off in order to give a satisfactory surface for repainting. This was characteristic of many of the earlier mixed paints and did much to give them a bad name among practical painters, but modern paint chemistry has been able to avoid these troubles to a very great extent and the best mixed paints on the market today do not require special and expensive preparation when repainting becomes necessary. It may, therefore, be set down as pretty well demonstrated that so long as a good painter is employed, a satisfactory and durable job of painting can be obtained whether the paint is shop mixed by the first-class painter or machine mixed in a paint factory. So long as the painter is willing to pay the regular market price for his white lead, linseed oil, turpentine and colors, and provided that he buys them from a reliable dealer, and receives them in original packages bearing the name of a white lead corroder, a linseed oil crusher or color manufacturer, he will get materials that are just as pure and just as good in every way as can be bought by the largest manufacturers of mixed paints. It rests largely with the honesty of the painter whether he will furnish materials of this character or whether he will, for the sake of the small saving, use inferior materials in his shop mixed paints. And the same thing may be said of the paint manufacturer; some mixed paints are the very best that can be made, while others are as bad as the worst dope that the snide painter knows how to put together. And as the measure of value is to a great extent determined by the price, it will be found that neither the cheap painter nor the cheap mixed paint can be depended upon, but that the property owner who desires to secure good results in painting must be willing to pay the price for first-class labor and materials.

Colors for Outside Painting

Within the past twenty or thirty years there have been several changes in the fashion of house painting. Nevertheless these changes took place slowly and gradually, and there is no marked change in the style of house painting from one season to the next, as there

is in the colors for dress goods. We can most of us remember the days when it was the almost universal custom for country houses to be painted white, with the putty lines of the sash cut in with black and the outside blinds a bright green. Paris green was at one time used, until it was supplanted by the cheaper and less poisonous chrome greens. And right here it may be well to remark that many of the materials used in painting are poisonous, but as the only danger lies in taking them into the stomach, and as very few people are addicted to the habit of eating paint, their poisonous character may be neglected, except that painters should be particularly careful not to eat until they have thoroughly washed their hands. These old time white houses looked very charming when nestled in among green trees, and this gave one of the peculiar beauties to so many of the New England villages. But in the midst of a treeless landscape, the white house had a very glaring aspect, and stood out altogether too strongly against the background. The Centennial Exhibition in Philadelphia, in 1876, marked the beginning of a change in public taste and an appreciation of the artistic which has gradually worked a great change in the appearance of the towns and villages of the country. At first the tendency was toward grays and lead colors, easily mixed by adding lamp black or drop black to white; and then followed an era of the quieter tints, with a use of more or less red for cutting in chamfers. Soon after the so-called Queen Anne style came into vogue, and then color ran riot. Houses were painted in greens, browns, terra cottas and other strong colors, with the chamfers and moldings picked out in contrasting tints. It was no uncommon thing to have the body color vary in each story of the house and to use strongly contrasting colors as belts encircling the building. Fortunately, this patchwork style soon died out and the simpler Colonial architecture took its place. At first, the only thing deemed proper for a Colonial house was a yellow body, with white trimmings and dark green blinds. But we have come to realize that this is by no means an invariable combination. So long as the trimmings are kept of a lighter tone than the body, any pleasing combination of colors that is not too dark, will look well on a Colonial house. For example, a light olive body with white or ivory trimmings is very effective, or a medium shade of terra cotta for the body with warm ivory trimmings are both very effective. Or the Colonial house may be all white, especially where it is well shaded by large trees.

A house on the sea shore or by the side of one of the great lakes, especially when surrounded by more or less sand, should be darker in color than the same house set in the midst of trees. And in the first instance, bright, strong and rich colors are permissible, whereas on the village street, more sober effects would be preferable. When surrounded by trees, light colors should be chosen, because otherwise the house will be too much obscured, but in selecting

the colors, care must be taken that they harmonize with the particular greens that the foliage shows. For example, the leaf greens of the horse chestnut, the silver maple, the poplar and the willow are all very different, and what might harmonize with one would not look so well with another. Fortunately, however, Nature has so blended her greens that each one of them contains enough of each of the primary colors to make them harmonize with every other object in nature. But it is possible for man to produce pigment colors that will by no means harmonize with these beautiful natural greens. This is a thing that the painter should carefully study. While a house painted in tones of brown or green may look very well indeed, when standing in the open, the same house should be painted in light tints when shaded by trees. White, yellow, light French gray or terra cotta would be more preferable than green or brown tones in such a position. Again, it must be remembered that light colors tend to make a house look larger, while dark colors make it look smaller. Another thing to be borne in mind is that the window shades should harmonize with the paint. Many a house that has been painted with the utmost good taste has had the effect ruined by the use of window shades of some inharmonious color. As a rule, white Holland shades are preferable to any other, because they harmonize not only with the outside coloring but with any decorative scheme that may be employed in the rooms. If it is necessary to make the rooms particularly dark, this can be readily done by the use of extra shades of dark green.

In the selection of colors, one must not only consult personal taste, but if living in a city or town, one must regard the surrounding houses. How many times we see, in a row of city houses, a single discordant note, somewhere in the middle of the block, that jars on one's nerves, because the color is glaringly out of key. In such a case one almost longs for the French rule which requires every property owner to submit all proposed changes in color or form of his houses to the proper official, who decides them from an artistic standpoint and refuses to permit anything which he deems would tend to introduce a discord into the general effect of the street. Unfortunately, we carry our personal liberty a little too far, when we plan the outside of our house, both as to form and color, entirely without any consideration for the effect they may have upon the neighborhood as a whole. As our neighbors see the outside of our dwellings more than we do ourselves, we ought at least to be willing to exercise good taste and endeavor to make our houses harmonize with their surroundings, in order that we may please our neighbors and do unto them as we would have them do to us.

The present taste in house painting runs toward simplicity rather than toward elaborate color combinations. The entire body of the house is painted in one color, including all gables, projections and the like, and the trimmings are either in a contrasting or har-

monious color; the sash either being the same as the trimming color or else in black or some dark color. Where white trimmings are used, the sash are frequently white, with the putty cut-in in black. Outside blinds are either the same as the body of the house or some darker color, particularly a shade of dark green or olive. As a rule, light colors have been preferred for the past few years, although there is a slight tendency toward the use of dark colors again. In houses of the more picturesque types, such as the stone and shingle houses, the trimmings are generally painted either white or some dark color, and the shingles are stained either in a soft brown or dull red, a moss green or a silver gray. From the artistic standpoint, shingles should be stained in preference to being painted, and for practical reasons this process is more satisfactory because paint is apt to form little dams between the shingles and hold the rain back in such a manner that it rots the wood.

Where the moldings are delicate in their detail as in the Colonial and similar styles of a classic derivation, the trimming color should be light in order to bring out the beauty of the architectural detail.



The Evolution in Home Building

(Continued from page 78)

case was tried in this building, but whether this is true or not there still remain a few people who remember seeing him there, who delight in recalling some of the anecdotes for which he was noted.

The building, of course, does not stand where first erected; in fact, it has been moved several times, and at present stands in Fair Lawn Park, Ill., as a relic of by-gone days, though it has lost much of its old-time appearance in the way of clap-board roof, chinking of the cracks, etc. However, the logs, with a few exceptions, are the original timbers, felled and hewn near at hand. Right here, we wish to say the workmanship displayed in the hewn surfaces and dovetailing of the corners show that the workmen of those days were experts in wielding the ax and adze, their principal tools.

We, as a people, owe the pioneers much credit; yes—more than is given them, for making it possible for the comforts of our present day homes. As we looked out on the surroundings, we could not help thinking of the great changes that have taken place since this old log cabin was first built, and that within the memory of a life time. Here it stands in a beautiful park where hundreds and thousands of old and young gather each year in reunions and picnics, as a reminder of other days. It should serve as a beautiful lesson to the young generation, who are surrounded with the comforts of life, and while they may not all be blessed with fine homes, there are none living in so primitive surroundings as must have been in those days before the advent of the railroads, free schools, the telegraph, telephone, etc. Certainly under such conditions there should be no room for discouragement.

Manual Training



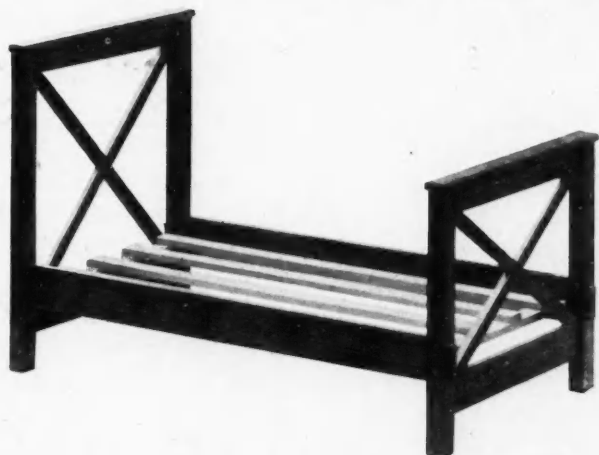
Ira S. Griffith

Something the Boys Can Make

COMPLETE DESCRIPTION TOGETHER WITH DETAILED DRAWINGS OF HOW TO MAKE A DOLL BED—KINDS OF WOOD TO USE AND DIMENSIONS OF THE SAME

WE HAVE been describing pieces of furniture to be made for father, for mother and for self. This month our boys will be pleased to make something for the younger sister. Get it ready for Christmas.

The designs for the doll beds, pictures of which are here shown, have been found to work out unusually well. The proportions of the parts have been much



admired, and the sister will surely be pleased with the result.

The two beds shown are alike with the exception of the placing of the slats in head and foot parts.

Allowing one-quarter inch extra for width and one-half an inch for length, the rough stock needed is as follows: Two pieces $\frac{7}{8}$ by $1\frac{1}{8}$ by $15\frac{1}{4}$ inches, two pieces $\frac{7}{8}$ by $1\frac{1}{8}$ by $11\frac{3}{4}$ inches, two pieces $\frac{3}{8}$ by $2\frac{1}{4}$ by $24\frac{1}{2}$ inches, two pieces $\frac{3}{8}$ by 2 by $12\frac{3}{8}$ inches, two pieces $\frac{3}{8}$ by $1\frac{1}{2}$ by $12\frac{3}{8}$ inches, two pieces 5-16 by $\frac{7}{8}$ by 14 inches, two pieces 5-16 by $\frac{7}{8}$ by 17 inches, two pieces 5-16 by $1\frac{1}{4}$ by $13\frac{1}{2}$ inches.

All these pieces are to be of oak, mill-planed to the thicknesses given above. If desired, the five-sixteenths inch stock may be got out of three-eighths inch without much trouble. In addition to these pieces there will be needed, to make a frame for the bedding to rest upon, soft pine or yellow poplar as follows: Two pieces $\frac{3}{8}$ by $1\frac{1}{8}$ by $11\frac{5}{8}$ inches, four pieces $\frac{3}{8}$ by $1\frac{1}{8}$ by 22 inches, two pieces $\frac{3}{8}$ by $\frac{3}{8}$ by $22\frac{1}{4}$ inches.

If the design in which vertical slats are used is to be made, there will be needed, instead of the corres-

ponding items in the oak bill, the following: Five pieces of oak 3-16 by $\frac{7}{8}$ by $7\frac{1}{2}$ inches, five pieces of oak 3-16 by $\frac{7}{8}$ by $10\frac{3}{4}$ inches.

Let us begin by squaring the posts. Carefully smooth off the mill-planed surfaces. Just a stroke or two with the plane blade set for a very shallow cut is all that can be taken on the pieces, which are usually mill-planed just a little thicker than the dimension called for, will be too thin. Two of them should be seven-eighths by seven-eighths by fourteen and three-quarters inches; the other two should be of the same width and thickness with a length of eleven and one-quarter inches. The lower ends of each of these should be beveled just a little to keep them from splintering when in use.

Next, prepare the side rails by squaring two pieces to three-eighths by two by twenty-four inches. For the cross pieces of head and foot, square two pieces three eighths by one and one-half by eleven and seven-eighths; also, two pieces three-eighths by one and one-quarter by eleven and seven-eighths inches. As the ends of these pieces are to become enclosed tenons, it



is not necessary to plane them smooth; just saw them accurately.

The exact length of the slats cannot be given until the frame has been put together, but the pieces may be squared to five-sixteenths by five-eighths inches at this time.

The two top pieces should be five-sixteenths by one by thirteen inches.

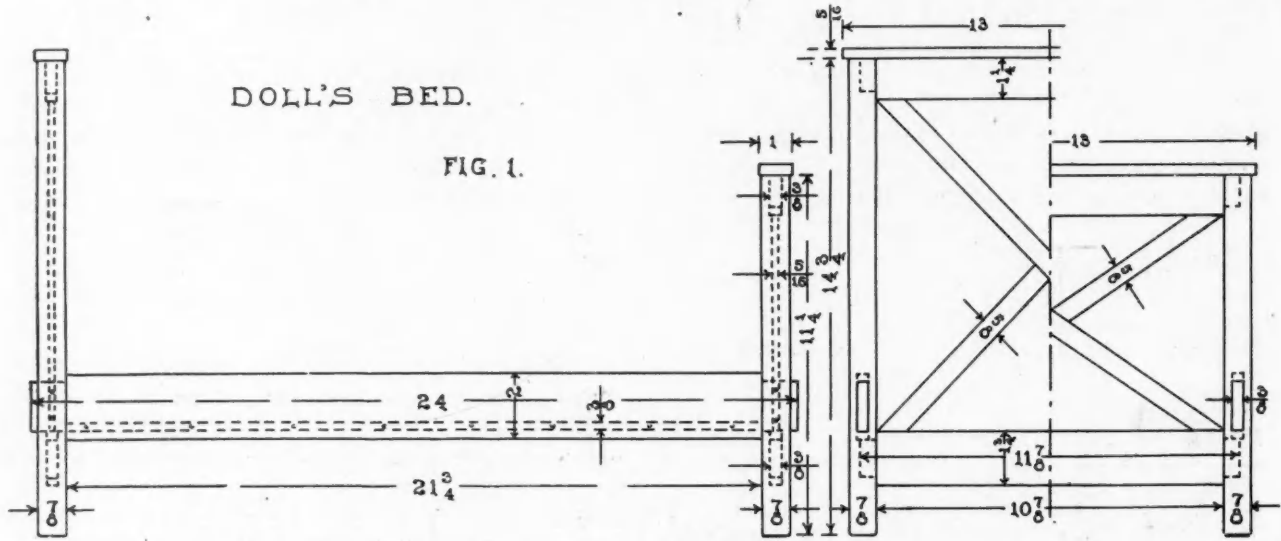
The mortises should be roughly located by standing

up the posts in the positions they are to occupy relative to one another, with the faces turned in and marking them with pencil. Remember that the mortises for the side rails extend entirely through the posts and must therefore be marked on two sides of each post, the other mortises being marked on the inner surfaces only.

Place the four posts side by side with the through-mortises up. Even the lower ends by holding the blade

gauge to five-sixteenths of an inch and marking with the gauge block against one of the face sides. Again, set it to eleven-sixteenths and gauge from the same surfaces as before. But two settings of the gauge are necessary for all of the mortises.

As there are to be no shoulders on the sides of the tenons which go into these mortises, the greatest care must be taken to keep the sides of the mortises smooth and even in cutting them. It is presumed that you

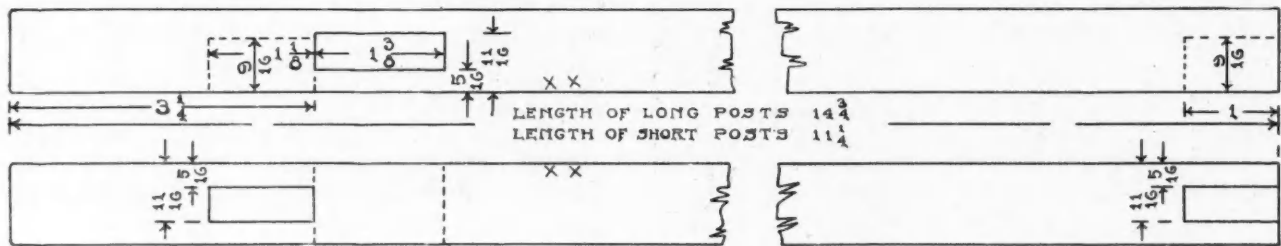


of the try-square against the ends and the beam against the surface of one of the posts. Measure from the lower end three and one-quarter inches and mark. From this point measure one and three-eighths inches. With a sharp pencil, square light pencil lines across the four pieces at these points. Square these lines across the remaining faces and the side opposite the one upon which they were first marked.

Now place the faces which are to contain the other mortises upward, even the ends so that the lines just drawn coincide. Fig. 2 shows that these mortises are made by using one of the lines just drawn for the top of the mortise and measuring down one and one-

know how to cut through and close mortises. If you do not, better read up in the back numbers of the magazine or get someone to show you, for careless work here will spoil the whole. The closed mortises are to be nine-sixteenths of an inch deep. Should the posts be slightly more or less than seven-eighths of an inch the gauge must be set so as to throw the mortises in the middle, of course.

Fig. 3 gives the layout of the tenons on the two side rails. The two rails are placed side by side, on edge, the ends are evened and knife lines are squared across the two pieces at a distance of one and one-eighth inches from each end. These lines are then



eighth inches for the bottom line. This is the easiest way to lay it off, but it will make the mortises easier to cut if the whole mortise is dropped five-sixteenths of an inch. This will keep the mortises from cutting into each other and will throw the top of the lower end rail on a line with the bottom of the through tenon, Fig. 1. While the posts are still in position, measure from the tops of both long and short posts one inch and square pencil lines across.

Locate the sides of these mortises by setting the

carried entirely around the pieces, care being taken to keep the beam of the try-square against either the joint-edge or the working face.

The gauge is now set to five-sixteenths of an inch and the tenons marked on the two sides and ends. Next, set it to one and eleven-sixteenths inches and gauge from the joint-edge as before.

This makes tenons one and three-eighths inches wide.

In Fig. 4, the tenons are laid off in a similar man-

ner. The distance to be measured from the ends is one-half an inch, and the gauge is set first to five-sixteenths, then to one and seven-sixteenths inches, making tenons one and one-eighth inches in width.

In Fig. 5, the length of tenon is one-half an inch and is shouldered on one edge only, the gauge being set to one-quarter of an inch.

Fit the parts together. The tenons should fit snugly but care must be taken not to split the legs in the effort to get snug fits.

Before the glue is applied to the tenons, the parts should be scraped clean and smooth and stained, and filled if filler is to be used. The beds shown were stained with a dark brown water-stain, diluted half-and-half with water, then filled with a dark filler. The parts were then put together and when the glue had

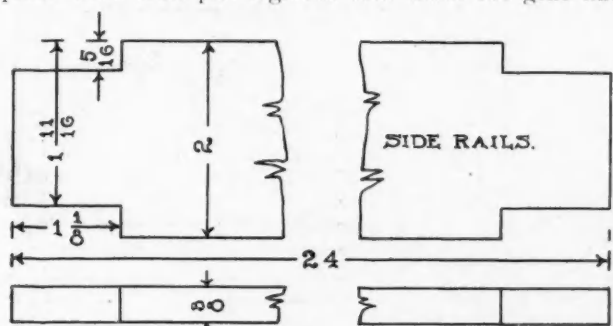


FIG. 3.

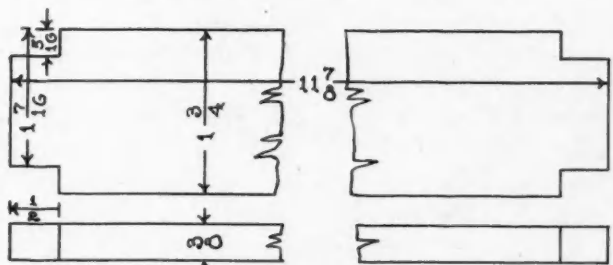


FIG. 4.

hardened, which takes about twenty-four hours, the surplus was cleaned off and the beds given a very thin coat of shellac.

If care is taken—and it pays to be careful, both because of time saved and excellence of results—but very little glue will need to be scraped. The head and foot parts are glued up first, the cross slats are then cut and fitted. These pieces should be stained and filled at the same time as the others. Hold one of them in position and mark the slopes at the ends with a knife very carefully. This one may then be cut and set in place—not nailed. It is advisable to cut just a mite longer and block plane to fit. If the marking has been fairly accurate, do not cut it longer than a sixty-fourth of an inch, for cutting too long is about as bad as cutting too short.

Now, hold the second piece in position and mark the slopes on the ends. Cut and fit, then mark the slopes for the half lap joint at the middle—mark both pieces.

A very small brad at each end will suffice to hold them in place. See that the cross-pieces are well sup-

ported while nailing and use a nail-set so as not to batter the wood.

Small brads are used to fasten the top pieces to the posts. Putty, colored to match the filler, is used to conceal the heads.

The side rails may be made fast to the posts, but a better way would be to fasten the tenons in the mortises with small wood pins, so that they may be removed and the bed taken apart like a big bed.

The frame which supports the bedding is simply made. Two pieces of yellow poplar or white pine are squared to three-eighths by seven-eighths by eleven and one-eighth inches, four pieces to the same thickness and width, with a length of twenty-one and one-half inches. The photograph shows the manner of placing them. The outside pieces should be about three-quarters of an inch from the ends of the short pieces. The other two, or three if desired, should be spaced equally. The ends are fastened with two brads each.

This frame is not fastened to the bed but rests upon pieces of poplar nailed to the inside of the rails—

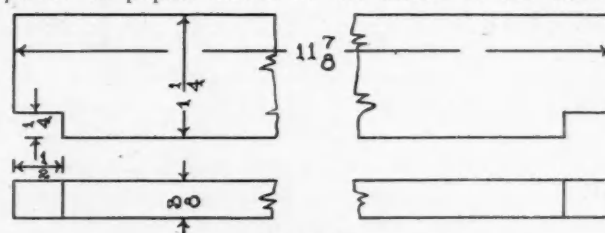


FIG. 5.

dotted lines, Fig. 1. These pieces are three-eighths of an inch square and twenty-one and three-quarters inches long.

The soft wood is not stained, but shellaced only.

In the doll bed which has the vertical slats instead or the oblique, if the mortises for the lower end rails are dropped five-sixteenths below those of the side rails, as shown in Fig. 1, instead of being as shown in Fig. 2, the distance from the lower edge of the top rail to the top edge of the lower rail will be six and three-quarters at the foot and ten and one-quarter inches at the head. As these slats are to be "set in" one-eighth of an inch at each end the five short ones should be squared to three-sixteenths by five-eighths by seven inches, the five long ones to the same thickness and width with a length of ten and one-half inches.

These pieces have no shoulders, the whole end is set into the cross rails, the mortises being cut three-sixteenths by five-eighths of an inch. The mortises are spaced equally and the pieces are placed side by side with the joint edges up and marked at one time for the ends of the mortises. The sides are gauged as usual—both lines from the face side. On account of the smallness of the work, great care will be required. A three-sixteenth inch chisel will be best, and the mortises should be cut but slightly deeper than one-eighth of an inch—not more than one-sixteenth of an inch at the most.

Correspondence



Balloon Frame Barn

To the Editor:

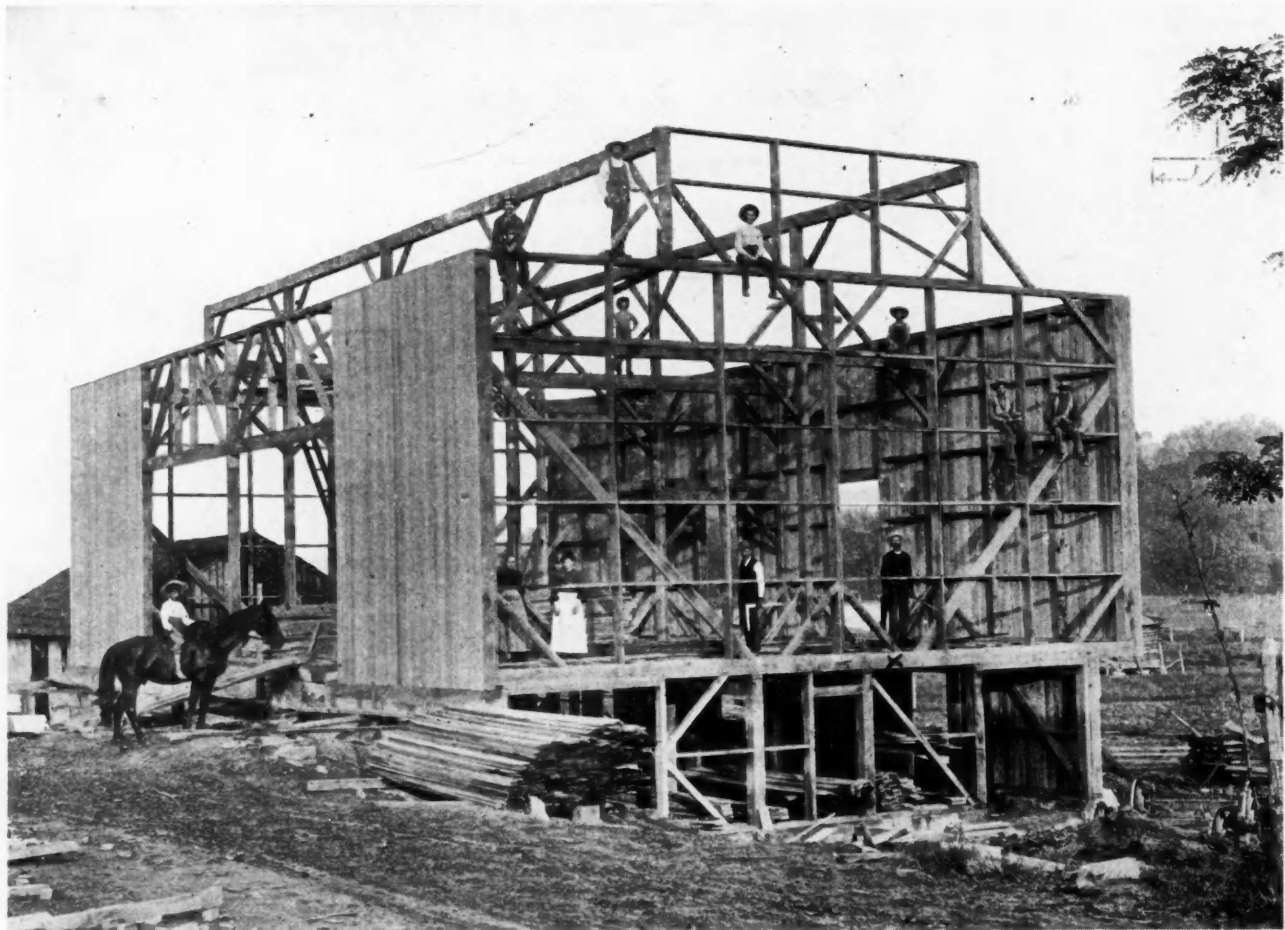
Killbuck, Ohio.

I am sending you herewith a photograph of a balloon bank barn which I have recently built. The barn is built without a mortise and is considered one of the best and most com-

like to ask you if there is a way to overcome this very serious defect?

ADOLPH LIPPMAN.

Answer: Dampness on the interior of concrete block buildings can be positively prevented by using Sylvester's process, which has been in practical use since 1873, and not



plete balloon frame barns in this section of the country. It is 40 by 65 feet, and 18 feet high. During the past seven years I have built a number of barns similar to this and they have all stood the test, both in regard to grain and storms.

A. H. UHL.

Waterproofing Concrete Blocks

To the Editor:

Maryville, Mo.

Two years ago I built a two-story dwelling house of concrete blocks, and plastered on the blocks. A heavy rain recently beat through the walls, destroying the frescoed work which had been put on the walls only a short time previous. The walls were first canvased and then frescoed. I would

one failure where the instructions have been carried out properly.

Sylvester's process consists of two washes on the exterior side or surface of the building, the first being made of $\frac{3}{4}$ pound castile soap to one gallon water, and the second of $\frac{1}{8}$ pound alum dissolved in one gallon water.

The soap wash is applied boiling hot with a kalsomine brush. Care must be taken to prevent frothing. Twenty-four hours later apply the alum wash luke warm.

In ordinary cases one wash of each of the above is sufficient, provided the surface of the blocks is clean and their composition not too porous. However, three of those washes alternately applied one day apart will prevent the worst case of damp penetration.

closely shingles may be laid some moisture will get between them to the shingle underneath, and is it not reasonable to suppose that when laid open they will dry out quicker than if laid tight?

There seems to be quite a controversy on saw filing. I have always thought that the way a man learned to file was the way for him to stick to. For my part, I file with my file point toward the handle. It seems strange to Mr. Hollingsworth why so many workmen do this, thus putting the cutting edge on the back of the tooth. The two sides engaged, of a slim taper file are practically parallel and the only difference in bevel on the back and on the front of the tooth is because of the set of the teeth, and this difference is more apparent than real, so I don't see that we are necessarily putting the cutting edge on the back of the teeth. I venture to say that when Mr. H. grinds his chisel, he grinds back from the cutting edge so as to leave no burr hanging to the edge when he is through. I grind my saw on the same principle.

F. C. RUSSELL.

Length of Lever

To the Editor:

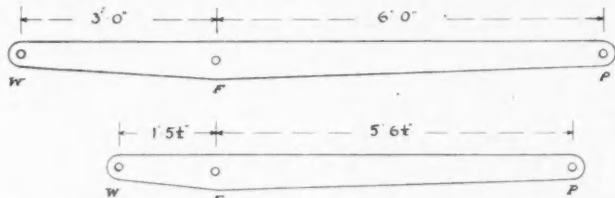
Parkersburg, W. Va.

Enclosed is a sketch of the fifth lever of a 42-foot track scale which I was called upon to place in position. The concrete foundation called for a 7 foot lever, but a 9 foot was sent by mistake. I found that the proportions of the arms of the two levers were not alike, and so decided not to cut away the concrete to make room for the long one. Afterwards, I was told that the proportions made no difference, but I fail to understand this and consider that if the longer lever had been used, the figures on the weigh beam would have had to be changed.

Hoping to see this explained in the next issue of your most valuable journal, to which I have been a subscriber from its infancy to its present noble size.

JAS. W. ASHLEY.

Answer: We are not very well versed in the construction details of track scales, but by the law of levers you would



seem to be right in your contention. The law which holds in the lever is: "The power multiplied by its arm is equal to the weight multiplied by its arm."

Supposing that a power of 10 cwt. was applied at P, the end of the long arm of the nine foot lever, we should get (10 times 6) 60. Dividing this by the length of the short arm (60 divided by 3) we should get 20 as our balancing weight.

Applying the same power on the long arm of the 7 foot

lever we should get (10 times 5 feet 6½ inches) 55 feet 5 inches. Dividing this by the short arm (55 feet 5 inches divided by 1 foot 5½ inches) we get 38, showing that the difference between the two levers is very great. Unless, therefore, there are some other conditions with which we are not acquainted, it seems that you are justified in your views.

T. B. KIDNER.

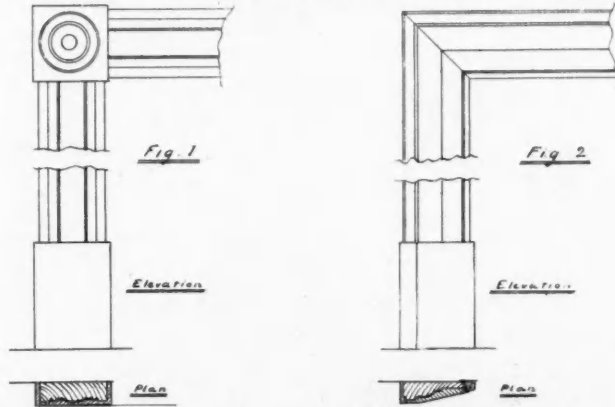
Plinth Blocks and Door Rails

To the Editor:

Fredericton, N. B.

Reply to Mr. Geo. W. Austine, p. 701, August number.

Plinth and head blocks should always be wider than the architrave or finish; half an inch being generally allowed. They should also be from one-eighth to one-quarter of an inch thicker. In the case of an architrave molding where corner blocks are used, the molding is usually the same thick-



ness on both edges and the plinth block is a plain, parallel piece. (See Fig. 1.) Where the architrave is mitered at the angles, it is usually thinner on one edge and the plinth block should follow the contour of the molding, somewhat as shown in Fig. 2. Generally speaking, doors should be designed so as to bring the middle or lock rail at a convenient height for the handle. The best practice is to make the center line of the lock rail 2 feet 9 inches from the floor, as this height is considered the most suitable for a lock or other fastener.

T. B. KIDNER.

Answer to Question

To the Editor:

La Fargeville, N. Y.

Replying to the question of Alex McLachlan in one of your recent issues, will say, on a foundation 16 feet square, to use 12 and 14 foot joists, I should saw the 12 foot ones into three pieces and use them to spike onto the side of the 14 foot ones.

By splicing them alternately at each side of the building and putting in two sets of cross bridging, 4 feet from the ends, a good job would result, as the two foot splice would be amply strong and would be partly supported by the bridging.

JOHN UPTON.

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Practical Trade Appliances

Elegant New Office Building

Within the year has been erected in Davenport, Iowa, a handsome three-story building of vitrified brick. The photograph herewith gives an excellent idea of this beautiful structure. It is elegantly finished inside and is as airy and roomy as its exterior would indicate, being, we believe, the finest office building occupied by a single concern in the city of

CARPENTER AND BUILDER. Orders began to pour in from all parts of the country. First one stenographer, then another, first one clerk, then another were added to the staff of the company, until soon the old quarters became cramped and inadequate. The business had grown and its rapid increase was remarkable.

Last January the present building was planned, and it too was quickly rushed toward completion, although not at the



Davenport. The occasion for this building was the remarkable growth of the Gordon-Van Tine Co. A little over a year ago this company conceived a new idea of the distribution of building material. The idea was to revolutionize the trade, extend the market and cheapen the product for the consumer. The plan was to sell directly to the consumer, do all business by mail, and avoid the middle man or the retailer's profit. They immediately began to make their plan known to their prospective patrons through advertising, principally in farm journals and high-class magazines. One of the first advertisements they placed was in the AMERICAN

expense of quality. It is all that can be desired and can accommodate an office force capable of handling an immense amount of business, but already it is a very busy place. The postal receipts in Davenport have increased enormously, and the growth is due to this company. This may seem improbable, but when it is realized their correspondence averages over 2,000 letters a day, it is very easily understood.

Of course the advertising alone is not sufficient to get the entire line of material that this company handles before its customers. When they first get into communication with the company all the customers receive copies of the company's

big catalogue, and it is a very large and comprehensive volume. It lists everything in the line of building material, and is profusely illustrated. Millwork, builders' hardware, roofing, paints and a good many other things that go into building are all mentioned. In fact, the book enumerates about 7,500 articles.

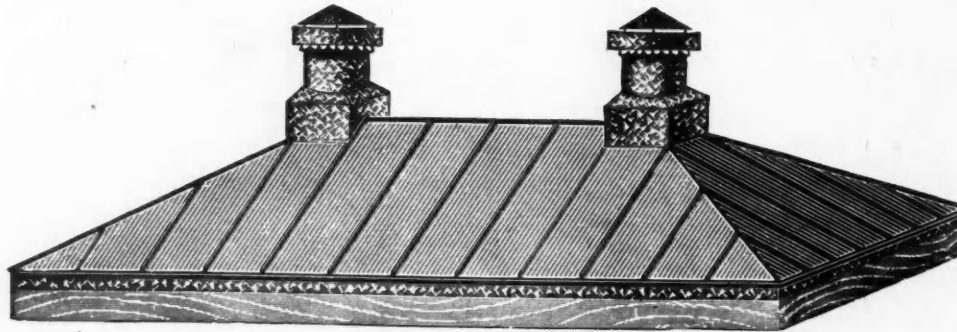
The Canton Manufacturing Co.

We take pleasure in this issue, in calling to the attention of our readers, the Canton Manufacturing Company, located at 239-243 Jackson street, Canton, Ohio.

This enterprising company is now running full capacity in their new plant, covering over 30,000 square feet of floor space. Seventeen years of successful experience in the sheet metal building material line has built up for them a long list of satisfied customers, covering the entire United States. They are now at work on several large contracts which were given them without competition because of material used, workmanship and prompt service.

The following, taken from their catalogue, is the basis of their success:

"Our equipment consists of the best and most improved machinery obtainable, which with efficient and skilled workmen enables us to turn out our products economically, hence we are at all times in position to make prices as low as are consistent with a high grade of goods.



"Our purpose is to place on the market a line of goods which, in both design and construction, will become a guide to discriminating buyers, and, by prompt and careful attention to the requirements of the trade, and the favorable prices which our facilities enable us to make, we hope to receive your patronage, which we shall constantly endeavor to retain."

A few of the numerous articles which they manufacture and which we especially desire to call our readers' attention to, are: Cornices, skylights, ventilators, finials, shingles, metal ceilings, vault doors, coal-hole rings, frames of doors and windows, sidewalk doors, roll-roofing, plain and rock-faced brick and stone siding.

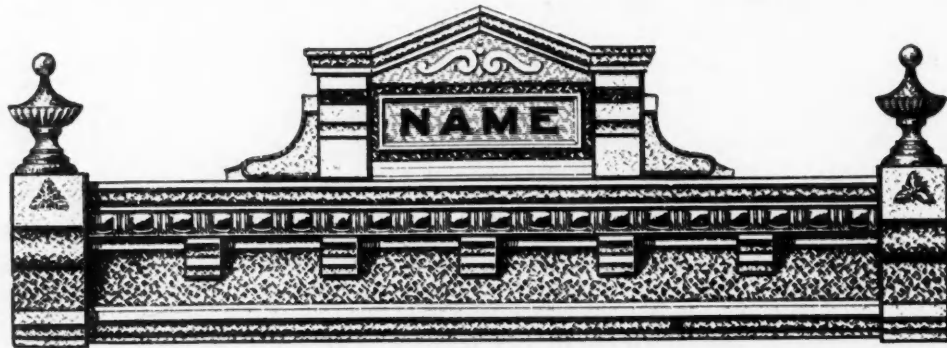
Their new catalogues set forth in a concise and convenient manner a series of price

lists and illustrations which will be helpful to our readers in determining the approximate cost and style of materials which they may desire.

Every contractor should have a copy of this catalogue. It will save him money! This company will be glad to quote their best prices on special work or designs at any time plans or specifications are sent them. In writing them please mention the AMERICAN CARPENTER AND BUILDER.

Testing Concrete Blocks

That concrete blocks properly made are capable of withstanding enormous crushing strain is borne out in the following tests made by Professor Crocker, of the Mechanic's

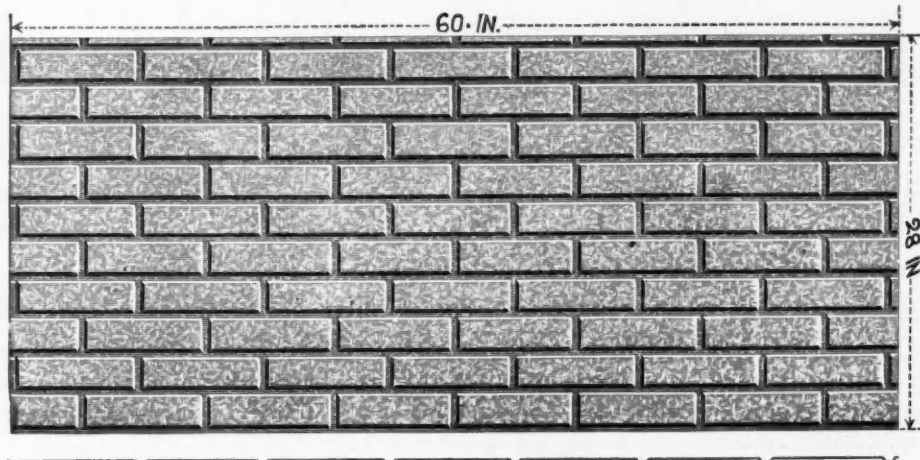


Institute, Rochester, N. Y. A block made on "Hercules" machines by Palermo Bros., Mount Morris, N. Y., containing a total area of 126 square inches, the net area, deducting air space, being 100 square inches, crushed at 181,000 pounds, which is equivalent to 1,436 pounds per square inch total area and 1,810 pounds per square inch net area.

A second test was made with a block produced on a Hercules machine operated by J. F. Norris, Brighton, N. Y.; size of block, 8 by 12 by 24. This block was subjected to 200,000 pounds crushing test and refused to break. The limit of the testing apparatus having been reached, it was impossible to ascertain how

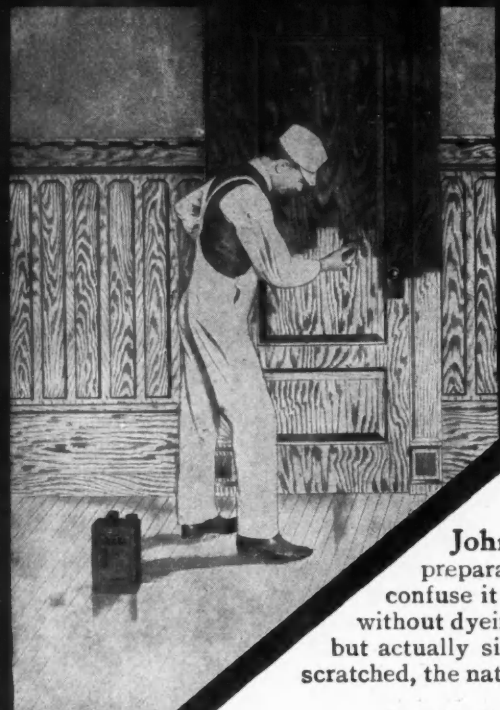
much additional weight would have been required to break the block.

The two blocks submitted were regular stock blocks, made of good material mixed with two to one facing and a five to one backing. According to Hercules methods, a sufficient



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Tear or cut out the coupon in the lower right hand corner of this advertisement, fill it out and mail to us, and we will send you **FREE** prepaid two samples of Johnson's Wood Dye, any desired shades, and one sample of Johnson's Electric Solvo. We will also include a copy of our 48-page book, "The Proper Treatment for Floors, Woodwork and Furniture." It shows in true colors on wood the different shades of our Wood Dye and tells exactly how to apply any kind of a finish on new or old, hard or soft wood, how to remove old paint, varnish, shellac or any finish almost instantly from wood, metal or glass with Johnson's Electric Solvo. In short, it contains a fund of valuable information for ambitious painters and wood-finishers. Don't fail to send coupon today properly filled out.

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"The World's Standard."

Johnson's Wood Dye, for the artistic coloring of all wood, is a preparation of unusual merit. It is a dye pure and simple. Don't confuse it with the many varnish stains which simply coats over the wood without dyeing the grain. Johnson's Dye does not raise the grain of the wood, but actually sinks in and colors it so that if this dye finish becomes marred or scratched, the natural color of the wood cannot be seen. **It comes in all shades:**

No. 131, Brown Weathered Oak; No. 172, Flemish Oak; No. 140, Manilla Oak; No. 126, Light Oak; No. 110, Bog Oak; No. 123, Dark Oak; No. 121, Moss Green; No. 125, Mission Oak; No. 178, Brown Flemish Oak; No. 130, Weathered Oak; No. 128, Light Mahogany; No. 129, Dark Mahogany.

Gallon cans, \$3.00; quart cans, 85 cents; pint cans, 50 cents; half-pints, 30 cents.

Johnson's Electric Solvo instantly softens all old finish on wood, metal and glass so it may be easily removed with putty knife. It has no objectionable odor—does not raise the grain of wood, will not injure the hands and does not harm or change the color of the most delicate wood, or have any injurious effect on metal and glass. Fine for removing putty from windows and cleaning paint brushes. Gallon cans, \$2.50; quart cans, 75c; pint cans, 40c.

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**It will put all old finish, such as varnish, shellac, etc., in perfect condition
to receive new coat of wax or other finish.**

Applied with a cloth to wood it will remove all spots and stains in and above the
finish. It removes all dirt, soot, mortar spots, etc., that have been ground into the grain
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injure the hands, clothes, wood or have an objectionable odor. **It is sold by most
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My address is.....



thoroughly modern and scientific, and will deal with the economies and dollar saving both of building and furnishings.

On page 101 appears a diagram of the great Coliseum at Chicago as it will be laid out and divided for the purpose of accommodating the various exhibits that will make up the Home Beautiful Show. This enterprise should at once interest the great class of manufacturers who have products and utilities that enter into home building and making, as it will prove a broad and valuable avenue of publicity. The management of the show is in the hands of a company incorporated for the purpose of making it an annual event. The gentlemen are all men of broad experience along lines that fit them to make a success of such an undertaking.

Sheet Metal for Interior Decoration

Artistic taste and specially devised machinery have made it possible to use steel for ceiling and side wall decoration. It is more healthful than plaster; does away with dampness

steel, usually of 28 or 29 gauge; these are given form by being placed between dies and subjected to the action of a powerful machine hammer, the administration of heavy and distinct blows producing sharper angles than when the steel slowly yields to the application of hydraulic pressure. In addition to being highly ornamental and attractive, metal ceilings and side walls possess many characteristics of a decidedly utilitarian nature, which would seem quite sufficient to alone justify their slight increase in cost over lath and plaster. Closely joined so as to make them easy and economical to install, they present an almost air tight surface, and being incombustible, they tend to greatly protect floors and wood work in case of fire, and have many times, by preventing the spread of flames until the arrival of the fire department, saved buildings from destruction. Being of light weight, they reduce to a minimum the strain upon trusses and joists. They neither crack or fall as plaster is proven to do, nor shrink and dry out like wood.



Dining Room with Metal Ceiling and Side Walls

in buildings incident to the use of plaster; takes a low rate of insurance, being fire and water proof; very easily applied; it improves the acoustic properties of a room, and by the artistic arrangement of panels and moldings, offers possibilities of treatment hitherto unattained.

The illustration herewith shows application of the Edwards Gothic Metal Ceiling and Side Walls to a dining room, making a handsome interior finish, and one that is guaranteed to be fire, water, disease and germ proof, and can be easily cleaned with sponge and water.

Metal ceilings and side walls are made from sheets of mild

For these reasons they are largely employed in establishments where heavy goods are handled, the resulting jarring, which would loosen the plaster, producing no effect on the steel sheets. The field for metal ceilings is almost universal and is constantly widening; they are largely employed in dwellings, vestibules, apartment houses, bath rooms, kitchens, banks, buffets, restaurants, theaters, public halls, churches, educational institutions, and in many other places. Although of comparatively recent introduction, metal ceilings have reached a high state of development, leaving little if anything to be desired. It may well be that improvements in the way

Material FROM Sheriffs' AND Receivers' Sales

SAVE 30 TO 50 PER CENT ON YOUR PURCHASES

THE CHICAGO HOUSE WRECKING COMPANY saves you 30 to 50 per cent on staple merchandise from **Sheriffs' and Receivers' Sales**. Wrecking prices have come to be known as **bargain prices**. Here you have the most wonderful bargain offering ever advertised. Such an opportunity seldom occurs. The very best manufactured articles offered at less than original cost of production. That's our merchandising method. We do not buy our goods in the regular way, but take advantage of various sales to secure bargains. **Our mammoth plant is the largest in the world devoted to the sale of general stocks**. Increasing business has necessitated an addition to our already enormous institution. Over 35 acres literally covered with merchandise of every description.

OUR BUSINESS IS ONE OF ACTION. BUY TODAY. BARGAINS WAIT FOR NO MAN.

LUMBER! Send us your lumber bill for our estimate. LUMBER!

The Chicago House Wrecking Co.
Offers the most wonderful opportunity ever heard of to furnish you lumber and building supplies of every kind at **Prices that will save you big money**. Such an opportunity as this seldom occurs. We have lumber for your house, church, barn, meeting house, cribs, stores, factories and in fact, buildings of every kind. We can furnish absolutely everything required in construction material. Have your carpenter or builder make up a complete list of everything that you may require, including **Lumber, Sash, Doors, Nails, Roofing, Siding, Ceiling and every single article**. Send it to us at once, tell us where you have seen this advertisement, and we will make you a **Proposition that will be a saving of from 30 to 50 per cent**. This is not an idle statement. Thousands of satisfied customers have bought from us in the past. We guarantee absolute satisfaction. We require your good will.

Lumber From Expositions
We have had vast lumber experience. After the World's Fair at Chicago we sold **30,000,000 Feet**; at the Omaha Exposition, **15,000,000 Feet**; at the Pan-American Exposition over **23,000,000 Feet**; and at the St. Louis Exposition over **10,000,000 Feet**. You will miss one of the greatest chances you ever saw if you overlook buying your lumber now. Prices on lumber are ever advancing. Do not wait for them to go down. They never will. If you have no need for a carload yourself, get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad tracks running through our main warehouses and buildings and can load a car to good advantage to you. You can include other items in the same car, such as **Pipe, Plumbing Material, Roofing, Wire, Fencing, Furniture, Machinery and Merchandise of all kinds**.

50,000,000 Feet of Lumber For Sale
We recently bought at **Manufacturers' Sale** over **50,000,000 Feet** of all kinds of **Lumber and Finishing Material**. We are making special concession to those who will buy at once. Even if you have no use for this lumber at once, it will pay you to buy now. We cheerfully invite inspection of our **Lumber Stock** and will be glad to have you come direct to our warehouse and yards at Chicago, see the lumber we are offering, and you will recognize that it is all what we say of it; make your own selection and see it loaded. It is not necessary to come to Chicago; we will sell you by mail very easily and will have no trouble to convince you of the desirability of placing an order with us. Just send us your lumber bill and we will easily "Show You." On application we will send copies of letters from customers who have bought. They saved money, why can't you. Write us today.

WE BUILT OUR ENORMOUS BUSINESS BY GIVING OUR CUSTOMERS ABSOLUTE SATISFACTION

DOORS 40c WINDOWS 29c
10,000 good doors in various sizes, secured by us in connection with our dismantling operations. Most of them with hardware. Prices range from **40c up**.
10,000 Windows.....29c up.
Sash from St. Louis Exposition
50 Carloads of factory glazed sash from the St. Louis Exposition, suitable for use on large buildings. Glazed with 1/8-in. thick ribbed glass, giving a clear fine light. We can furnish the following sizes:

Quantity	Opening	Price each
2500	30 in. x 5 feet	\$1.00
1200	4 ft. 5 in. x 7 ft. 8 in.	3.40
1000	29 in. x 42 in.	1.00
300	10 ft. x 14 ft.	2.60
300	2 ft. 8 in. x 2 ft. 10 in.	1.20
500	2 ft. 5 in. x 19 ft. 5 in.	4.70

WE PURCHASED EVERY EXPOSITION
This includes the World's Fairs of Chicago and St. Louis; the Expositions of Buffalo and Omaha, built at a cost of \$90,000,000. We are the foremost dismantlers and purchasers of large institutions in the world. By this means alone millions of dollars worth of the world's best products have passed into our possession and have been rebuilt and sold at 50 per cent below their original value.

The World's Bargain Center
Thousands of satisfied customers everywhere have learned to recognize the virtue of our business. We stand between you and high prices. The greater part of our stock consists of brand new, first-class merchandise from **SHERIFFS' and RECEIVERS' SALES**. Our enormous warehouses are overflowing with Merchandise secured from such sources. Our wonderful growth and expansion is the best evidence of our ability to serve you. Merchandise of the highest quality is sold at sacrifice prices. Each day some new addition to our stock compels us to dispose of what we have on hand. The time to buy is when these bargains, shown you in this advertisement, are calling on you for action. Send us your order today and be convinced.

OUR GUARANTEE
We guarantee absolute satisfaction. A satisfied customer means more to us than a large sale. Every article you purchase from us is guaranteed absolutely as represented. If you find it to the contrary, we hold ourselves in readiness to make good our representations.

OUR RESPONSIBILITY
We cheerfully invite investigation as to responsibility. Our capital stock and surplus is over \$1,000,000. We refer you to any commercial institution in Chicago or anywhere else. Look us up in Dun's or Bradstreet's; ask any Express Company; write to the editor of this or any other paper; if you want any more positive proof, write to our depository, the **Drovers' Deposit Nat. Bank, Chicago**.

STRUCTURAL IRON AND STEEL
On account of our extensive wrecking operations we are always in position to supply your needs in iron material of every kind. Our stock consists of:
Wrought Iron Steel Rails "I" Beams
Channels Iron Rails "T" Beams
Iron Rods Angles Steel and Iron Plates
Washers Bolts Iron Cast
Iron Fence Fancy Cast Cast Iron
Deck Beams Iron Posts Columns
Latticed Beams Turnbuckles "U" Iron
In fact, there is nothing in the iron line that we cannot furnish. Our prices are always right. We can save you money. We can give you quick delivery. Send us blue print or diagram of your needs.

Felt Roofing, 60c per 108 sq. ft.
"Eagle" Brand Prepared Roofing
Composed of two and three sheets of carefully saturated felt; between sheets water-proof insoluble cement; compressed together making a solid flexible sheet with layers of composition thoroughly combined. Practically fire-proof against sparks and cinders, 32 in. wide, about 40 feet long. 108 sq. ft. to the roll.
2 ply per square, 60c 3 ply per square, 90c
Roofing cement, caps and nails, additional per sq., 35c.

"RUBBERIZED GALVO" ROOFING
This is highest grade roof covering manufactured. Absolutely nothing finer. No coating necessary. Practically indestructible. **WATER-PROOF, FIRE and LIGHTNING PROOF**. Brand new, its base is the strongest and best wool felt obtainable, closely woven and especially made to meet severe roofing conditions. It is weather-proof, fire resisting. No tar, asphaltum or paper used in its manufacture. It will last from 20 to 50 years, depending upon the ply you purchase and local condition. It is easy to lay. We furnish nails and caps, as well as sufficient to make laps. Our price is per 108 square feet as follows:
1 ply.....\$1.35 2 ply.....\$1.55 3 ply.....\$1.75
A complete stock of Building Papers and supplies of every kind.

MILL WORK
All kinds of mill work, new and used. Save money by buying from us. Windows for elevators, Columns, Masts, Trim Rails, Balusters, Block, Mouldings, Brackets, in fact, everything required for the construction of buildings of every kind.

STEEL ROOFING
PER 100 SQ. FT. \$1.50.
Most economical and durable roof covering known. Easy to put on; requires no tools but a hatchet or a hammer. With ordinary care, will last many years. Suitable for covering buildings of any kind. Also used for ceiling and siding. Fire-proof and water-proof. Cheaper and more lasting than shingles. Will not taint rain-water. Makes your building cooler in summer and warmer in winter. Absolutely perfect, brand new, straight from the factory. **\$1.50** is our price for No. 15 grade of Flat Semi-Hardened steel roofing and siding, each sheet 24 in. wide and 24 in. long. Our price on the corrugated, like illustration, sheets 22 in. wide and 24 in. long, **\$1.75**. At 25 cents per square additional we will furnish sheets 6 and 8 feet long.
Steel Pressed Brick Siding per square,.....**\$2.00**
Fine Steel Beaded Ceiling per square,.....**2.00**
Can also furnish Standing Seam or "V" crimped roofing to all points East of Colorado except Oklahoma, Texas and Indian Territory. Quotations to other points on application. This freight prepaid proposition only refers to the steel roofing offered in this advertisement. Satisfaction guaranteed or money refunded. We will send this roofing to any one answering this advertisement C. O. D., with privilege of examination if you will send 25 per cent. of the amount you order in cash; balance to be paid after material reaches your station. If not found as represented, refuse the shipment and we will refund your deposit.

WE PAY THE FREIGHT
to all points East of Colorado except Oklahoma, Texas and Indian Territory. Quotations to other points on application. This freight prepaid proposition only refers to the steel roofing offered in this advertisement. Satisfaction guaranteed or money refunded. We will send this roofing to any one answering this advertisement C. O. D., with privilege of examination if you will send 25 per cent. of the amount you order in cash; balance to be paid after material reaches your station. If not found as represented, refuse the shipment and we will refund your deposit.

BATH TUBS, \$6
300 "New Style" all metal tubs, finest galvanized steel finished inside with special white Japanese enamel. Nicely finished outside. Heavy wood rim. Length 5 ft. While they last **\$6.00, 5 ft. \$6.40**. Handsome porcelain tubs with 3-in. roll rim. Seamless white enameled on inside finest nickel plated fittings, each **\$14**. Full line of other tubs up to **\$25.00**
BATH ROOM OUTFITS, \$25. With steel enameled tub, vitreous earthen closet bowl, polished hardwood seat and tank, handsome enameled lavatory, all nickel trimmings, complete, ready to install, **\$25**. Other complete combinations at **\$37.50, \$50.00, \$54.75** up to **\$150.00**.

PLUMBING MATERIAL, ALL KINDS
at prices that do not represent original cost of production. We buy at Sheriffs' and Receivers' sales only.
Cast Iron Enameled Sinks.....**\$1.25**
One Piece Enameled Iron Sinks with backs and nickel plated faucets.....**\$11.00**
Granitine, two-part laundry tubs, best manufactured, ten year guarantee. Per set.....**\$7.40**
Solid Porcelain Laundry Tubs, white glazed on inside, buff glazed on outside, complete with nickel plated bibbs, legs, stoppers, traps, etc. Set.....**\$18.00**

STEAM AND HOT WATER HEATING SEND FOR ESTIMATE

OUR NEW 500-PAGE CATALOG NO. 742 FREE
It is a book such as every shrewd buyer must have. **500 pages** with thousands of items of the very best merchandise and supplies bought by us at **Sheriffs' and Receivers' Sales**. Merchandise, machinery and supplies, articles for everyone. You will find it useful in the home, in the field, in the workshop or in the office. **WRITE US TODAY.**
Cut out this "Ad," mark a cross on those items that most interest you and we will send you much valuable information. Also fill in the coupon to your right and our Catalog will be sent you absolutely FREE and prepaid. If you do not want to cut out the Coupon, send us your name and address correctly, **tell us where you have seen this "Ad"** also tell us just what items in our "Ad" interests you most. Address
CHICAGO HOUSE WRECKING CO., 35TH AND IRON STS., CHICAGO

FREE CATALOG COUPON
CHICAGO HOUSE WRECKING CO.
35th and Iron Sts., Chicago, Ill.
I am a reader of Am. Carpenter and Builder. Send me your large 500-page Catalog, Absolutely Free as advertised in this paper.
Name.....
Post-Office Address.....
R. F. D. No..... Post-Office Box No.....
County..... State.....

THE FIVE ORDERS OF ARCHITECTURE

Especially prepared for Architects, Carpenters, Draftsmen, Sheet Metal Workers, and Architectural Stone Workers.

The newest, simplest, and most comprehensive treatise on the Greek and Roman orders yet published; 450 pages of text, 7 x 10 inches in size. Bound in half red morocco; 58 large detail plates 11 x 15 inches in size, in a handsome portfolio—illustrated with over 300 sections and details drawn to scale. Contains many full page photographs of the best examples of Greek and Roman Architecture; also a valuable list of definitions and pronunciations of the various architectural terms, and a list of all the good books on the subject.

The work is an invaluable means for becoming acquainted with the details and the proportions of the Standard styles of Architecture and the "laying out" of columns, cornices, balustrades, and moulding in general in the proper proportions. The work has been five years in preparation and contains many plates that have never before been available except in the most expensive books.

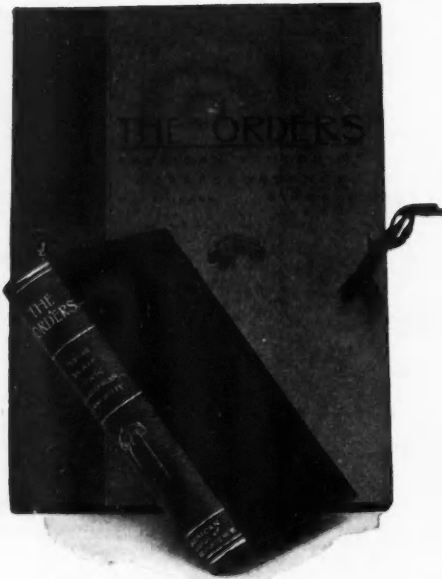
— 40 Per Cent Discount —

This special price is made in order to get as many of these sets as possible before the public early in the season, and thereby introduce the superior character of the home study courses of the American School of Correspondence.

Now \$9.80 - Regularly \$16.00

Sent express prepaid for five days' free examination, if you mention the American Carp. & Bldr., Oct. '07. Study the books carefully. Send us \$2.00 within five days, and \$2.00 a month until the special price has been paid. We shall send for the books at our expense if you do not care to keep them.

**AMERICAN SCHOOL
OF CORRESPONDENCE**
CHICAGO ILLINOIS



Am. Carp. & Bldr., Oct. '07

Rider Agents Wanted

in each town to ride and exhibit sample 1907 model. Write for Special Offer. Finest Guaranteed 1907 Models \$10 to \$27 with Coaster-Brakes and Puncture Proof tires. 1905 & 1906 Models all of best makes \$7 to \$12 500 Second-Hand Wheels All Makes and Models, good as new \$3 to \$8 Great Factory Clearing Sale. We Ship on Approval without a cent deposit, pay the freight and allow TEN DAYS' FREE TRIAL. Tires, coaster-brakes, sundries, etc. half usual prices. Do not buy till you get our catalogs. Write at once. MEAD CYCLE CO., Dept. P122 Chicago



of ornamentation may follow, although recent attempts to enamel and marbleize them have not proven distinctly successful. To set forth the merits of metal ceilings seems almost like praising wheat, yet there are doubtless many of our readers who do not fully understand their nature or appreciate the enormous advantage to be derived from their employment.

A handsome catalogue, "A," showing complete line of metal ceilings and side wall designs, also containing half tones of interiors taken from photographs showing the metal applied, will be sent free on request. Address the manufacturers, the Edwards Manufacturing Co., "The Sheet Metal Folks," main office and works 401 to 417 Eggleston avenue, Cincinnati, Ohio.

A Great Money Saver

The Fox Floor Scraper is built on scientific principles, yet simple in construction. Simplicity is the most important factor to be considered in building a machine. In this respect, as in all others, the Fox Scraper excels. A glance will convince a practical man that it must, of necessity, do the work. It consists of very few parts, yet is complete in every detail.

The machine is so constructed and so perfectly balanced that the weight is exactly where it should be at all times. When in operation, 85 per cent of this weight is resting on the blade, where it should be, making the work of the machine purely automatic and requiring no skill on the part of the operator.

When not in operation the weight is perfectly balanced on the wheels with blade clear of floor, which eliminates all danger of marring or scratching the floor through carelessness, or otherwise. The frame work

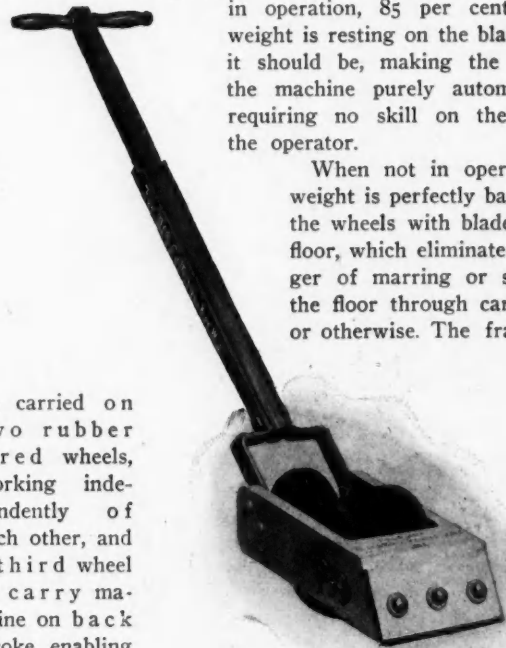
is carried on two rubber tired wheels, working independently of each other, and a third wheel to carry machine on back stroke, enabling the operator to turn the machine in any direction with ease and do perfect work in any position.

Before this machine was placed on the market it was thoroughly tested under the most difficult and trying conditions, and has been improved and developed until brought to its present state of perfection. It is complete and perfect down to the finest detail and is guaranteed by the manufacturer to do rapid and perfect work under all ordinary conditions.

Any man who can use a hand scraper can operate the Fox Floor Scraper and do good work. Bear this fact in mind, that you do not have to keep a trained man or expert in your employ to operate this machine. Simply draw the machine toward you and it will do the work. Any boy of sixteen years can operate it and do rapid and perfect work.

It will pay for itself in two days' work. One man with a Fox Floor Scraper can scrape an average of one thousand to twelve hundred square feet of any kind of hardwood flooring in a day of eight hours.

What will it cost you to scrape twelve hundred feet of





Better and Cheaper Roofing Than Tin or Shingles. Good for any Kind of Roof

Did you ever pay a good price for a new roof and then have to patch it within the first year or two? Enough to make anybody sore, isn't it?

You know just as well as we do that the tin and shingles that you buy nowadays are a long ways from being the good old quality you used to buy. Big difference in price, too, isn't there?

Do you want to put your good money into any kind of roofing material that after it's been on six months will make you incessantly haul out the old ladder and patch up a few leaks after every rain?

For 18 years we've been manufacturing MICA-NOID PREPARED FELT ROOFING. When we first started there were no manufacturers of such roofing, but today a bunch of young ones has broken into the ring and, gee, how they talk! In many cases they even have names similar to

MICA-NOID READY ROOFING

It takes years to test a roofing material and that's why every farmer ought to investigate MICA-NOID before he decides to put on a new roof.

We've thousands of customers who bought MICA-NOID years ago, the first time for only one building. Two or three years after they bought enough for another building, until today they haven't any other kind of roofing on the place. Isn't that pretty good proof that the old stand-by, MICA-NOID, is all right?

MICA-NOID can be applied by any one to any kind of roof. If necessary, can be laid over shingles. Makes a splendid siding for buildings. MICA-NOID is the only roofing that's good for life.

Why wouldn't MICA-NOID be just the thing for that new roof of yours? Write for FREE samples of MICA-NOID and our illustrated booklet.

Mica-Noid Manufacturing Company
114 Mica-Noid Bldg., St. Louis, Mo.

CAUTION: - No MICA-NOID ROOFING has been sold to dealers since January 1, 1903. Any dealers or jobbers offering any roofing under the name of MICA-NOID will be prosecuted.

SOLD ONLY DIRECT FROM THE FACTORY FREIGHT PREPAID



flooring by hand? Figure it out, Mr. Contractor. No builder, no matter how small his business may be, can afford to be without this time and money saving machine. It has gone to the front as the leader of all floor scrapers.

For further particulars, address the Fox Manufacturing Co., 187 Second street, Milwaukee, Wis.

Saving the Dealer's Profit

Of all the outer walls of a house which make what is called its shell, the roof is the most important. Nowadays walls are built only strong enough to resist heat and cold and to support the roof. They do not need, in these peaceful civilized times, to be built to withstand attack as did the strong old colonial houses, many of which are still standing today.

But the roof still needs to be built to withstand the steady persistent attacks of the weather. Mere thickness and weight are not enough for a roof, in fact they are unnecessary. The particular material with which a roof is covered is what

makes it able to resist rain, wind and snow, and this is the vital part.

There's roofing material and there's roofing material—and there's the difference. When you put up a house or barn or other building it is expected to last a good long time, and does, "if the roof holds out." The roof is exposed more than any other part of the building, hence it must be made most durable.

Shingles, tin, slate, galvanized iron and tar and gravel, all have had their day and have all been found wanting in one respect or another. One rots and is susceptible to fire, another rusts or corrodes besides requiring skill to put it on, another cracks, and so on down the line. The only kind devoid of all these features is the prepared felt roofings, of which there are several on the market, and of deserved merit.

As is always the case with articles of merit, there are hordes of imitations, and unfortunately there are many dealers who prefer to sell the imitations and pocket the extra profits,

BUY LUMBER DIRECT FROM MILL

\$60 to \$100 Saved

On Each Car Load of Lumber

DEALING with us direct will save you the middleman's profit. We will quote you the same price that we would quote the largest lumber dealer, whether you are owner, contractor or carpenter. We don't ask you to send us a penny in advance—we ship lumber to you with the privilege of inspection before you pay for it

We cut our own timber from our own forests and saw it in our own mills. **Direct from mill to you is our method.** You know every lumber dealer has to make a profit at your expense, and right here is your chance to save money—deal direct with us. Any kind of lumber shipped, from $\frac{1}{4}$ round to heavy timbers. Quick delivery guaranteed.

We handle lumber, laths, shingles, mill work, sash, doors, hardware, paints, plasterboards, lime, cement and roofing paper.

Tell us what you need and we will quote lowest prices on all builders' supplies laid down in your city.

**Independent
Lumber Company**

Yard 6, - St. Louis, Mo.

rather than sell goods of guaranteed quality and satisfaction to their customers.

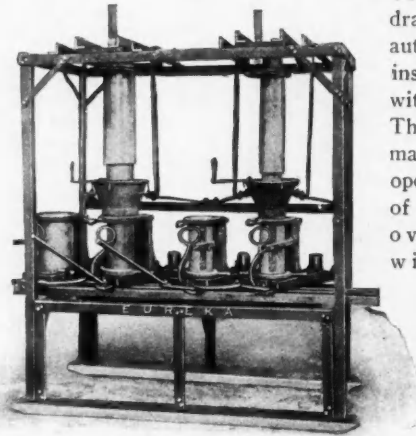
The substitution evil has become so strong in some lines that some manufacturers have ceased to sell the dealer at all, preferring to deal direct with the consumer and thus being assured that their guarantee is far more valuable to the purchaser than the average small dealer's promises.

Prepared roofing is now being sold direct to the consumer, contractor or carpenter; they are sold as cheap as the dealer sold them, in many cases cheaper, and every roll has the guarantee of a financially responsible manufacturer.

To those who have had the experience of paying three profits and taking chances on what they are buying, the new way of buying roofing direct from the manufacturer seems commendable.

Two Practical Machines

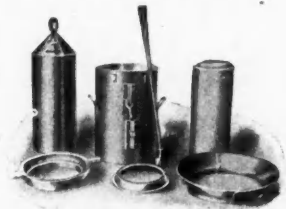
It is always conceded by experts that a face down machine with the cores withdrawn vertically is vastly superior to any other type. The Eureka No. 2 Face Down Machine, which is shown in this article, is the only machine on which the



cores are withdrawn vertically by automatic control, instead of being withdrawn by hand. The machine is remarkably simple in operation. One pull of the lever turns over the machine, withdraws the cores and unlocks the core box, pushes the lever in place and turns up the mold box; puts back the

cores into place, thus leaving the machine ready for the next block. It is not opened or unlocked until it is turned over, consequently one single core can be used in making 16-inch blocks. These cores being withdrawn vertically permits of the use of a much wetter mixture without the blocks sagging. There are no broken blocks, because the cores are not withdrawn until after the block is turned over, and therefore the walls of the block have perfect support until the time the block is delivered from the machine. If the block is turned over after the cores are withdrawn, all the walls are very apt to sag and break the block. The walls of a block made on the Eureka machine cannot sag or crack, consequently there are no spoiled or broken blocks. The automatic features of course make it much more rapid than any other machine on the market.

Probably the most remarkable concrete machine in a great many ways on the market is the Automatic Tamper Drain Tile Machine, which is made by the same company, the Besser Manufacturing Co., of Alpena, Mich., cut of which we show here. This machine produces drain tiles of superior quality at a very low price. The tamping is entirely automatic and so fast that a tile can be thoroughly tamped in ten seconds. The machine makes a perfect tile and there is practically no loss of any kind in breakage. Each tamper has two tiles. These swing back and forth under the hopper, so the operator is always making another tile before the first one is received. The act of swinging out this



tile from its casing cuts off the tile and also brings in the empty casing on which is a core. When the finished tile is swung out from under the tamper a short lever releases it from the core and it is carried away and another casing put on its place before the first goes back to the machine. The machine is fitted with a feeding device which, with an improved arrangement, will deliver just as needed. Everything works automatically without any friction and there is nothing to get out of order. This machine is remarkable for being the only low priced drain tile machine that is rapid and can be operated entirely by hand without any effort.

Reinforced Concrete Pipe Company

We desire to call attention to the advertisement in this issue of The Reinforced Concrete Pipe Company, of Jackson, Mich. Although this company is comparatively young, it having been in existence a little more than two years, it has ceased to be regarded in the nature of an experiment, its product having been unqualifiedly endorsed by building engineers and contractors throughout the country. During the past year the company furnished its pipe to many of the larger cities and railway companies of the United States, and at the present time has a number of large contracts in course of construction, among which are Atlantic City, N. J.; Michigan City, Ind.; Grand Rapids, Mich.; Lancaster, Ohio; Dowagiac, Mich.; Elkhart, Ind., Belgium, Wis. (suburb of Milwaukee); Ford City, Mich. (a suburb of Detroit); Waukegan, Ill.; Green Bay, Wis.; Denver, Col.; the Lake Shore & Michigan Southern Railway at Coldwater, Mich., and Baltimore, Md., this being a portion of the immense sewer system recently begun in that city, the cost of which is estimated at \$13,000,000.

It has also secured an exclusive contract for furnishing pipe for the Transcontinental Railway of Canada, financed by the government and extending from ocean to ocean.

The Reinforced Concrete Pipe Company has heretofore devoted its energies to pipe designed for sewerage purposes, but has recently applied for a patent and is about to begin the manufacture of a concrete and steel cylinder high pressure water pipe with electrically welded joints.

Owing to the great demand for its product the company has found it necessary to establish a branch factory at Los Angeles, Cal., which is now prepared to handle the territory west of the Rocky mountains.

We congratulate the company on its remarkably rapid growth and predict for it a still more successful business career in the future.

Bedford Stone

World wide in fame and use, the demand for Bedford stone for building purposes, both as to residences, stores and large structures, is constantly growing. The buff and blue colors of Bedford

stone are beautiful. Geo. W. Bollenbacher, of Bloomington, Ind., one of the best known brokers in stone in the country, has an ad. in this number and is in a position to furnish valuable information and very low estimates about and for any shape of Bedford stone desired. Every stone cutter likes fine stone, but many don't know just where to get it. Mr. Bollenbacher has issued an interesting folder showing a grand list of residences and other buildings located all over the country and constructed of the particular kind of Bedford stone supplied by him.

Money Made Making Cement Brick

The cement construction industry is growing with such leaps and bounds that the opportunities to make money in

In Your Grasp



Lack of Education is no longer an excuse for failure. You have the chance in your grasp to get a specialized training without losing time from your regular work. The study of drawing will fit you for a career whose opportunities are unlimited.

- † The Architect, the Draftsman, **the man who plans** big undertakings has the advantage of working in the very heart of the World's enterprises. He is the center about which great projects grow. The "boom" that transforms the village into a city with such startling rapidity is often the development of an idea that springs from his brain.
- † **If you are a young man** with no well-defined idea about the future, **an older man** whose present prospects are not alluring, would you like to occupy such a niche in the world's work? **The study of drawing** is the first step toward preparing yourself for such a career.
- † The American School of Correspondence teaches all branches of Engineering and Drawing. **We employ no agents**, believing our books offer the best chance to demonstrate the superiority of our **regular** courses of instruction. The

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- † Compiled from representative instruction papers of the School. It is thoroughly practical for **home study work**—every chapter is complete in itself—every subject is thoroughly analyzed, dissected and discussed by well-known authorities. It is entirely free from purely technical descriptive matter so easily misunderstood by the layman. It is also a complete reference library for the Technical Man who wishes to use it for consulting purposes or to "brush up" on his weak points.
- † In order to advertise the superior methods of instruction of the **American School of Correspondence** a limited number of sets will be sold at nearly **one-third regular price**.

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Brief List of Contents

Architectural and Perspective Drawing—Mechanical Drawing—Architectural Lettering—Pen and Ink Rendering—Rendering in Water Color—Making of Blue Printing—Shades and Shadows—Roman Orders of Architecture—Working Drawing—Machine Drawing—Shop Drawings—Machine Design—Tinsmithing—Sheet Metal Work—Skylights—Roofing—Cornice Work, etc.

American School of Correspondence
CHICAGO

Am. Carp. & Bld. 10-07
Handbook describing over 60 of our regular Architectural and Engineering Courses **FREE** on request.

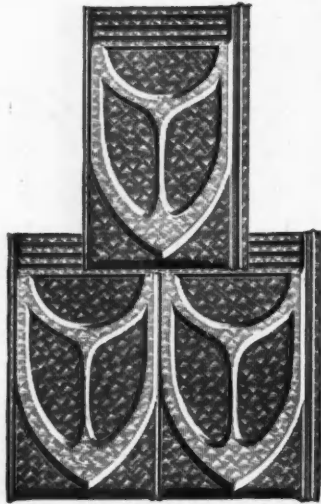
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Name.....
Address.....

some one of its numerous branches seem endless. From the indications the manufacture of cement brick offers the best opportunity for a permanent business, providing the right machine is purchased. The Peerless Brick Machine, manufactured by the Peerless Brick Machine Co., 11 N. Sixth street, Minneapolis, Minn., has attained a very high reputation. In an advertisement in another column the manufacturers state that more of their machines are now in use producing a profit to owners than all others combined. If interested, write them.

Champion Lock Joint Metal Shingles

The Eller Manufacturing Company, of Canton, Ohio, has just issued a small catalogue illustrating their Champion



Lock Joint Metal Shingles, and all those interested in metal shingles can have a copy for the asking. This new lock joint is one of the most ingenious devices that has yet been patented, and buyers of metal shingles will do well to get this book and investigate.

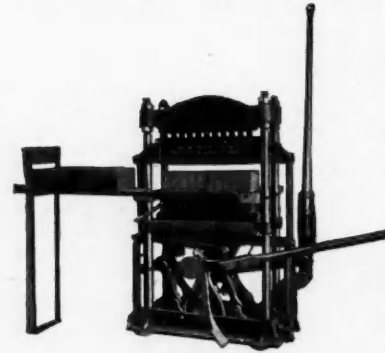
Shingles made of metal are the roof covering of the future. They are light, easy to apply, and produce an artistic appearance that cannot be produced by any other material. They are fireproof and do not get out of order, as wind has no effect on them. They are unexcelled in lightness, durability and artistic appearance by any of our modern roof coverings. The first cost may be a

trifle more than wood shingles, but this is offset by the fact that there are no subsequent repairs to be made, and when applied properly they last a life time. The Eller Company's Champion shingles are made in tin and galvanized, and are painted by hand, giving them a coat of paint that will last at least five years.

trifle more than wood shingles, but this is offset by the fact that there are no subsequent repairs to be made, and when applied properly they last a life time. The Eller Company's Champion shingles are made in tin and galvanized, and are painted by hand, giving them a coat of paint that will last at least five years.

Improvements in Concrete Machinery

The accompanying cut illustrates the Helm Press, manufactured by the Queen City Brick Machine Co., Traverse



City, Mich., which has borne a high reputation as a cement brick machine ever since it was placed on the market four years ago. This machine has proven so successful and satisfactory as a brick machine that its manufacturers have foreseen the advisability of greatly widening its adaptability so as to make blocks,

consisting of two-piece blocks, veneer blocks and paving blocks, the latter being utilized not only for pavements but in making sidewalks and as a general building material. Complete attachments have been provided for making these blocks, giving the machine a capacity of 1,000 blocks daily. It saves equally as much labor in pressing blocks as it does in pressing brick instead of tamping. The blocks produced on this machine combine the advantages of the two-piece block and the down face hollow block, since they can be faced equally as economically as the latter.

The two piece block appeals to the home builder since it saves the cost of furring and lathing and makes a wall that

Amatite ROOFING

Amatite is a ready roofing of superior durability with a mineral surface requiring no paint or coating.

There is the whole story of Amatite in a nutshell.

Its low price, combined with the fact that it requires no paint, makes Amatite the *most economical ready roofing on the market*. Other roofings require constant attention and care. Failure to paint regularly means a leaky roof. If you count the cost of this periodical painting and add it to the first

cost of these roofings, the total makes Amatite seem cheap indeed.

The first cost of Amatite is the only cost. The first cost of the "paint-me-quick-or-I'll-leak" roofings is only the beginning.

There is nothing flimsy about Amatite. It is made to last. There is twice as much material in it as there is in most roofings—the weight of a roll tells that. It is easy to lay, requiring no skilled labor or special tools. Investigate the facts. They are in our new, free booklet. We send it free with sample of Amatite. Write at once.

Barrett Manufacturing Co.

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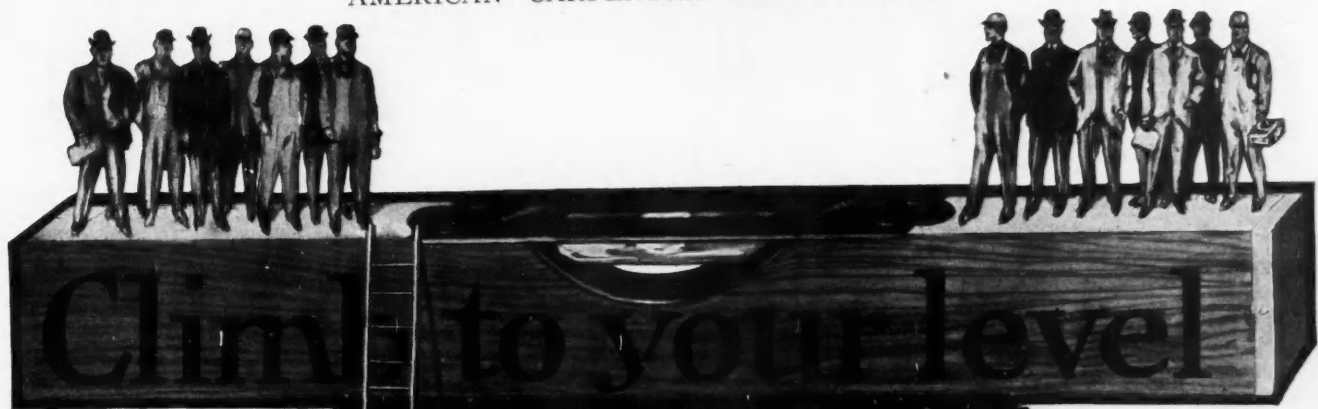
MINNEAPOLIS

PHILADELPHIA

NEW ORLEANS

CINCINNATI

LONDON, ENG.



It's ambition that distinguishes MAN from the lower animal. MAN'S natural tendency is to *climb*—to seek **HIGHER LEVELS**. If you are not advancing it is your own fault. Here is an opportunity for **YOU NOW**. If you are a Carpenter, Contractor, Builder, Architect, Draftsman or Mechanic, it offers you an exceptional chance to advance in your present occupation.

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Ten Massive Volumes, each nearly one foot high, handsomely bound in red half morocco. Over 4,000 pages; 3,000 illustrations, full page plates, plans, sections, etc. Printed on highest grade paper: entirely new type—DE LUXE books in every particular.

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Only a few sets remain to be sold at this price. Orders will be filled in order received. Sent prepaid by express. Pay \$2.00 within 5 days and \$2.00 a month if satisfactory; otherwise notify us to send for the books. **In any case you lose nothing.**

There are over 200 complete plans of artistic moderate priced houses, chosen by a staff of architects as typical of the best work of the best architects of the entire country—invaluable to anyone contemplating building. Also over 40 practical problems in construction based on the Rotch Scholarship Examinations of Boston, compiled and solved by S. T. Strickland, Ecole des Beaux Arts, Paris, with Charles H. Rutan, of Shepley, Rutan & Coolidge, the well known firm of architects, as collaborator.

The chapters on Reinforced Concrete—Steel Construction—Superintendency—Carpentry—Masonry—Contracts and Specifications—Estimating—The Laws of Building Contracts—Plumbing—Heating—Ventilating—are very complete, thoroughly practical and illustrate the most modern and up-to-date ideas of the building industry. There are chapters on Architectural Drawing—Perspective Drawing—the study of the Orders—Rendering in Pen and Ink and Wash as well as on hundreds of other vitally important subjects, and each topic is handled carefully and exhaustively by the best known practical authorities in this line of work.

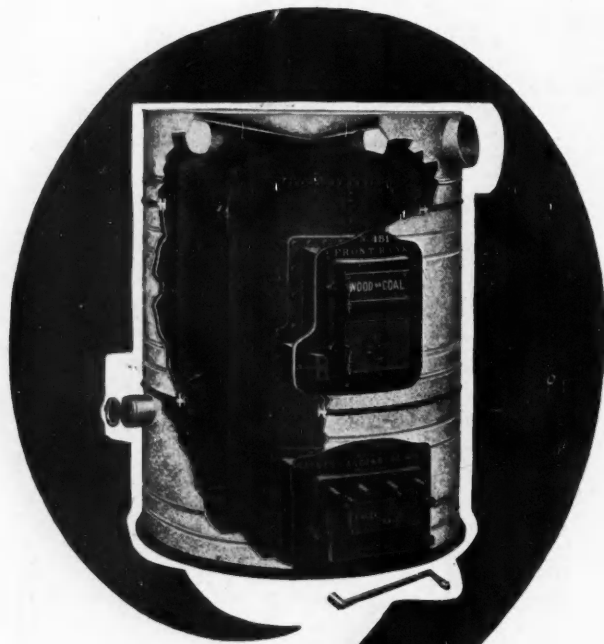
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CHICAGO**

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Please send set Cyclopedic Architecture, Carpentry, and Building for 5 day's free examination I will send \$2 within 5 days and \$2 a month until \$19.80 is paid; otherwise I will notify you to send for books.

What do you KNOW about Furnaces?



ISN'T it just as important to you to know all about the means by which you intend to heat your home or building, as it is to know about the other details?

There are all kinds of furnaces, of course, but it costs no more to get the best. The first cost does not always determine the actual cost—perhaps you've had experience already in repair bills and large coal bills. What you thought you were saving has really been an overcharge—the furnace you thought an investment proved an expense.

Do you know the advantage Steel has over Cast-iron?

Do you know the advantage a furnace built on straight lines has over the zig-zag furnace?

Do you know the advantage of having a furnace built of non-warping parts combined with heat-enduring features?

Do you know the advantage of having a furnace that will burn any kind of fuel—and heat the house from cellar to garret?

All these and many more are the things we tell you in our latest FRONT RANK Catalogue, and that catalogue is yours if you'll write for it. Do it NOW—you may forget it later, and tell us, please, when you write, the name of your local furnace dealer.

**Haynes & Langenberg Mfg.
Co. :: FRONT RANK Steel Furnaces
4057 Forest Park Boulevard, St. Louis, Mo.**

is waterproof. No moisture can pass through to the inner surface on account of the continuous air space.

The addition of these attachments to the Helm Press completes it for the production of the various concrete products which are produced and used in large quantities.

The above firm is also placing on the market a face down block machine, called the Automatic, from the fact that it is so nearly automatic in its operations, thereby giving the greatest possible capacity in a face down block machine for hand tamping.

Printed matter illustrating and describing these lines of machinery, also mixers and various equipment for saving labor in working concrete, will be mailed free upon request to the above address.

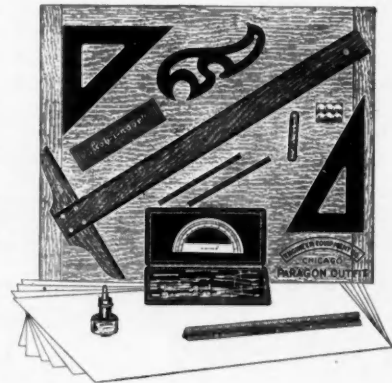
Practical Education in Drawing

To attain the highest plane of efficiency it is required to be best trained for such in the best practical manner.

It is acknowledged by the most experienced educators and fully realized as a plain fact by the best business men in this country that the training in most schools is too largely literary and too little practical. A good deal of time is spent in theoretical instruction that could be far more profitably employed, at least for the pupil, in teaching him how to do something practical for which there is a demand.

Through such need of practical trained draftsmen, Mr. F. V. Dobe, M. E., and chief draftsman of the Engineers' Equipment Company (Inc.), 97 Washington street, Chicago, has inaugurated his system of home instruction (not correspondence school instruction), which being modeled exactly after the greatest and leading practical schools of this character in Germany (Berlin), has reached such remarkable success in producing results.

Mr. Dobe furnishes free to his students next month as a premium for best drawings and to make the best drawings with, one of the finest complete drawing outfits as illustrated here, with a full set of German silver instruments worth \$13.85.



His "Successful Draftmanship" book, size 6x9, is sent free with full particulars to anyone interested, for four cents in stamps to cover the cost of mailing.

Put Your Money in a Good Roof

The manufacturer that makes a good product knows it and therefore has confidence in spending his money to tell the public about his product. The Patent Vulcanite Roofing Co., 629 South Campbell avenue, Chicago, do not hesitate to spend money for broadcast advertising because they have a product that has sixty years of tested quality behind it. "Vulcanite" roofing has many imitations, but the owner, builder or contractor can be sure of securing Vulcanite when they

look on each roll for the trade mark shown above. If your dealer does not have Vulcanite write the Patent Vulcanite Roofing Co., at either address shown in their ad. on page 143. The principal advantages about "Vulcanite" ready roofing are: Extreme durability; not affected by heat or cold;



Specify and Use

No-Tar Roofing

This Tells You How to Make Extra Dollars

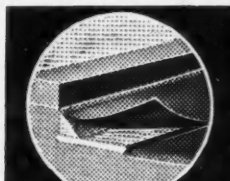
WRITE for our **Free Roof Book** and let us tell you how to make a Specialty of putting on No-Tar Roofing and build up a good side line to your business as Carpenter and Builder. We'll tell you facts and figures—low prices for the finest kind of roofing—that will interest and pay you to know.

Investigate—find out about **No-Tar Roofing**.

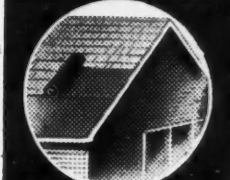
"No-Tar" Roofing has a surface as hard as flint—it is flint. Can't catch fire from sparks or cinders. It's as flexible as rubber—and absolutely waterproof. It's tougher than leather. Costs less and lasts longer than shingles, iron or steel. Won't run in the hot sun. The building that has a "No-Tar" Roof protection will last longest.

Accepted by all Fire Insurance Companies, who charge 25 per cent less for insuring buildings protected by "No-Tar" Roofing than for buildings with shingle roofs.

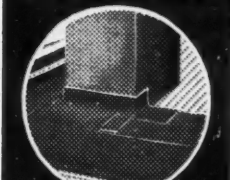
FOR STORE BUILDINGS AND FACTORIES—"No-Tar" Roofing is made in various weights, for all sorts of buildings. Nothing better or cheaper for **siding houses, out-buildings, etc.** All joints



Wall Flashing—Roof B & 13 tells how to make it



Over O. d. Shingles—Roof Book page 5. makes it easy



Chimney Flashing—Roof Book, page 15 tells how

water tight. "No-Tar" Roofing keeps stock and poultry snug, safe and warm in coldest weather. Quick and easy to lay.

FOR HOUSES—"No-Tar" Roofing will add immensely to the appearance of your residence. Use it on your new house, or cover the old, leaky shingle roof with "No-Tar" Roofing and avoid disaster from water or fire. "No-Tar" Roofing is a non-conductor of heat or cold. Keeps your house warm in the winter and cool in the summer. Try it on your porch or kitchen.

FREE SAMPLES TO TEST—When we send you the Free Sample of "No-Tar" Roofing we will tell you ten ways to test it and prove its superiority to any other roofing.

FREE ROOF BOOK—Explains the whole roofing proposition. We send the book **FREE** postpaid, on request. Special nails, metal caps and cement **FREE**.

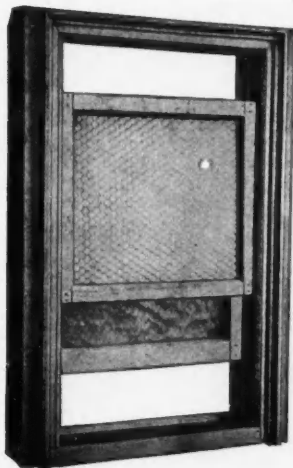
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Fireproof Windows,
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What Will YOU do at 50?



Have you ever thought what will become of you when your earning capacity is waning?

At fifty, will you still be working for a low wage or enjoying a good income?

That all depends upon what you are doing **NOW** to secure the knowledge and training that will steadily advance you in position and earnings during the coming years. It is only by fitting yourself with the qualifications that will enable you to accept every opportunity for advancement that you can enjoy a good income when fifty years old and can secure a happy, self-dependent old age.

The most practical, easiest, cheapest, and surest way in the world to secure this necessary training is through the **INTERNATIONAL CORRESPONDENCE SCHOOLS**—a six-million dollar institution whose sole business for 16 years has been to provide men with the training necessary to qualify them for higher positions. No matter where you live, no matter what your circumstances are, no matter how old or how young you may be, the I. C. S. can adapt its plan to your personal needs and circumstances.

You owe it to yourself and to those dependent on you to investigate this plan. **Do it now** by sending in this coupon—**Read it.**

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Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position before which I have marked X.

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Building Inspector	Surveyor	Textile Expert
Struct'l Engineer	Mechanical Eng.	Bookkeeper
Struct'l Draftsman	Mechanical Drafts.	Stenographer
Plum. & Heat. Con.	Stationary Eng.	Ad Writer
Supt. of Plumbing	Electrical Engineer	Window Trimmer
Form. Steam Fitter	Electrician	Illustrator
Plumbing Inspect'r	Elec.-Light. Supt.	Civ. Ser. Exams.
Heat. & Vent. Eng.	Elec.-Ry. Supt.	Chemist

Name _____

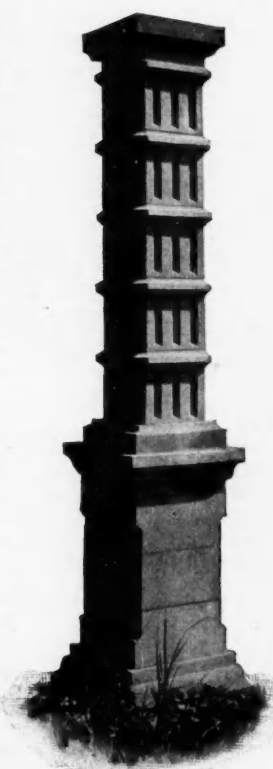
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does not stick together in rolls; does not absorb moisture, and cannot be affected by action of heat or frost; not affected by acids, and is weather, rot and acid-proof and fire-resisting. It costs no more than imitations.

Practical Cement Molds for Contractors

A new line of molds is about to be put on the market by the Simpson Cement Mold Co., which will be of particular interest to contractors. The Simpson molds for porch columns have met with such great favor, not only because of their beautiful and symmetrical designs, but also because of their simplicity of operation, that there has been a growing demand for molds constructed on the same plan for the manufacture of cement blocks for other purposes. The patterns for these new molds have just been completed, and tests of the molds made. A detailed description of them would occupy more space than the **AMERICAN CARPENTER AND BUILDER** can devote to it at this time. In general, the molds are made in two halves (by bolting two iron plates together) and these are held by simple but powerful clamps while the tamping is done. The clamps are taken off and the mold removed from the block in a few seconds. Wood pallets only are used. The molds are so rigid that no "lost motion" is possible, and the blocks are therefore all perfectly true as to size and form. With a comparatively small number of interchangeable side and end plates, rock face and plain face blocks are made of the following sizes:



8x8x 8 in.	8x 8x24 in.	8x12x24 in.
8x8x12 in.	8x12x12 in.	8x16x16 in.
8x8x16 in.	8x12x16 in.	8x16x24 in.

The various size blocks are made with one, two or three (and in some cases four) sides rock face, or all plain face. These blocks will build a large variety of work—foundations, range walls, piers, chimneys, fence walls, retaining walls, etc. They provide the contractor an easy and inexpensive means for making blocks for himself, and they are especially valuable in communities where there are no regular block makers. The Simpson Company will issue a sheet of directions which, if followed by the owners of the molds, will produce absolutely first-class cement blocks.

There is a convenient arrangement of the molds in various sets of different capacities. The prices range from \$12.00 to \$50.00 per set. The whole scheme is greatly to the advantage of any contractor who handles cement blocks.

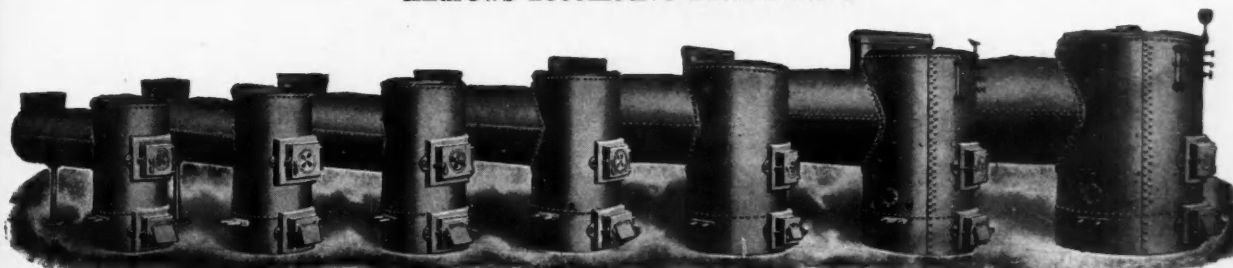
Full particulars may be had on request of the Simpson Cement Mold Co., 498 North High street, Columbus, Ohio.

Make Money by Using Machinery

Knowing that the subscribers to the **AMERICAN CARPENTER AND BUILDER** are busy people, that they are the class which is moving forward and not backward, and that their operations and business are growing, we desire to call their attention to the wisdom and economies presented through the use of power. Many of the **AMERICAN CARPENTER AND BUILDER** subscribers have small but complete woodworking shops in which they produce much of their own millwork. The use of gasoline for generating power gives quick action and is very economi-

ANDREWS HOT-WATER HEATING

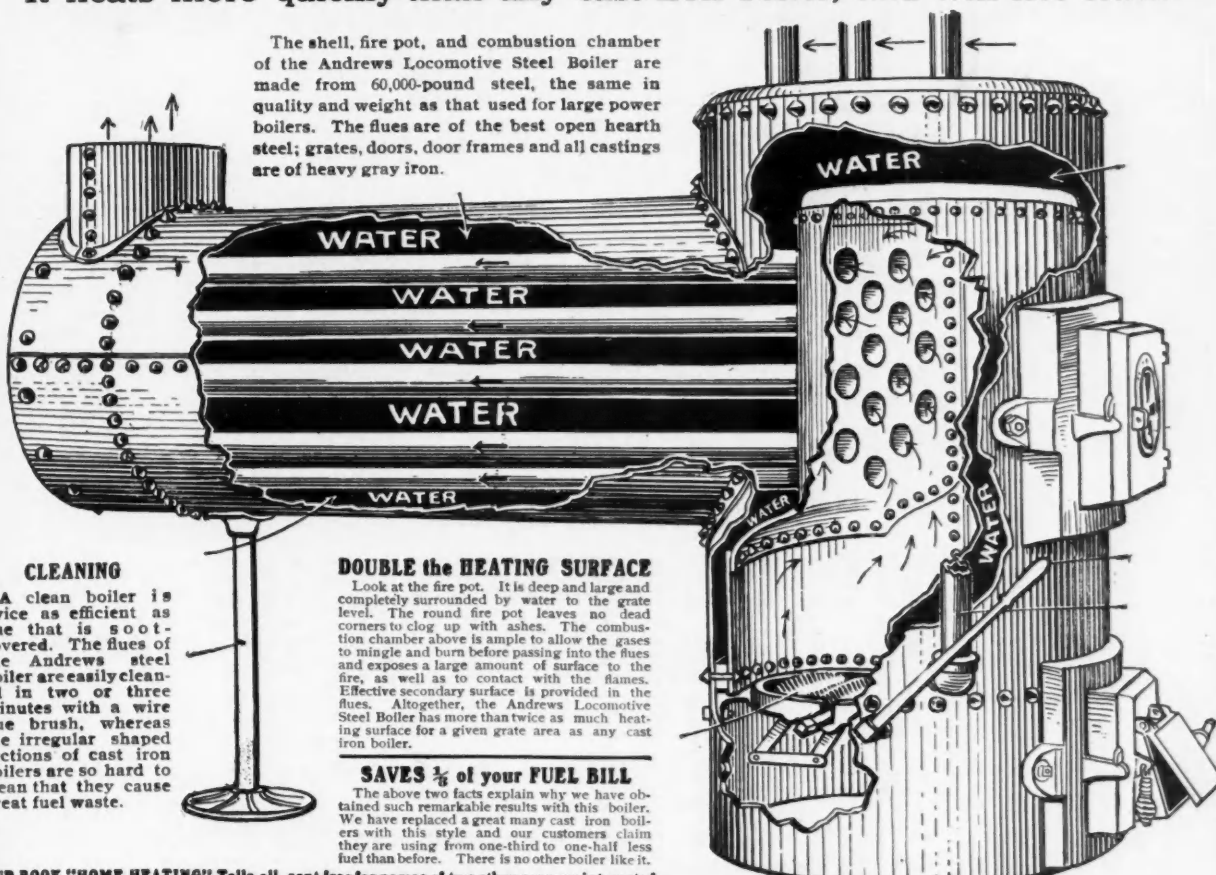
Andrews Locomotive Steel Boilers



No. 20 No. 24 No. 28 No. 30 No. 36 No. 42 No. 48

This is the Best Heating Boiler made
It heats more quickly than any cast iron boiler; and will not crack.

The shell, fire pot, and combustion chamber of the Andrews Locomotive Steel Boiler are made from 60,000-pound steel, the same in quality and weight as that used for large power boilers. The flues are of the best open hearth steel; grates, doors, door frames and all castings are of heavy gray iron.



CLEANING

A clean boiler is twice as efficient as one that is soot-covered. The flues of the Andrews steel boiler are easily cleaned in two or three minutes with a wire flue brush, whereas the irregular shaped sections of cast iron boilers are so hard to clean that they cause great fuel waste.

DOUBLE the HEATING SURFACE

Look at the fire pot. It is deep and large and completely surrounded by water to the grate level. The round fire pot leaves no dead corners to clog up with ashes. The combustion chamber above is ample to allow the gases to mingle and burn before passing into the flues and exposes a large amount of surface to the fire, as well as to contact with the flames. Effective secondary surface is provided in the flues. Altogether, the Andrews Locomotive Steel Boiler has more than twice as much heating surface for a given grate area as any cast iron boiler.

SAVES 1/3 of your FUEL BILL

The above two facts explain why we have obtained such remarkable results with this boiler. We have replaced a great many cast iron boilers with this style and our customers claim they are using from one-third to one-half less fuel than before. There is no other boiler like it.

OUR BOOK "HOME HEATING" Tells all, sent free for names of two other persons interested.

Andrews Vertical Steel Boilers

SOLD UNDER 860 DAYS FREE TRIAL GUARANTY BOND.



No. 16 No. 20 No. 24 No. 28 No. 30 No. 36 No. 42

660 Heating Bldg.
MINNEAPOLIS

ANDREWS HEATING CO.

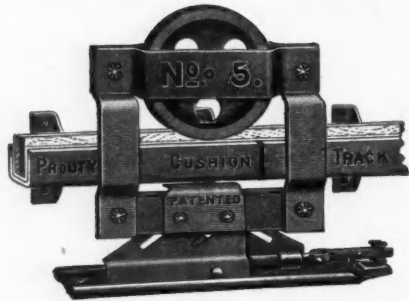
602 LaSalle Bldg.
CHICAGO

cal. By turning to the ad. of the Chicago Machinery Exchange, 9 to 13 North Canal street, Chicago, you will find illustrations of several useful machines for carpenters and contractors that will save them time and money if installed in their shops. This ad. contains a lot of good suggestions, and by writing this firm you will receive much information about shop equipment which you should know. Write them. It will pay.

A Word to the Wise is Sufficient

Parlor door hangers are a very small item in builders' hardware, and are not usually given much consideration by the average man unless he has had previous experience and trouble with them. Any other article in builders' hardware can be changed if not satisfactory, but the door hangers, after once installed, must remain whether satisfactory or not, unless you desire to tear out the entire partition in which they are enclosed.

Under these circumstances, it is suggested that you investigate the merits of the Prouty No. 5 "Cushion Track" hanger,



which was designed to overcome the objectionable features which have heretofore given annoyance in equipment of this kind. You, as a builder, have experienced trouble with the

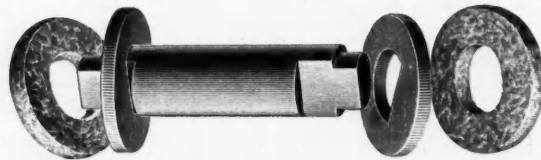
adjusting screws in some other hangers working loose from the vibration of the door, and have you not noticed how annoying it is when operating a sliding door to have it accompanied by a loud rattling and rumbling? These are entirely eliminated in this equipment, as it has a lock adjustment which is absolutely positive, and when once in position, it is there for all time.



This construction also entirely checks all sound vibration, both in hangers and rail, by the use of sound deadening felt and perfect bearings. The illustrations will show where felt is used and the metal casing or support in which wood and felt are mounted is made in 12 inch sections so that any vibration that should get through the felt is confined to the one piece and is not distributed through the entire length of rail.

A parlor door makes one of the best sounding boards imaginable if it has the opportunity.

Knowing the merits of their hangers, the T. C. Prouty Co., Ltd., of Albion, Mich., have sold thousands of sets in the past



few years and will make a sworn statement that they have yet to receive their first complaint from any source. They sell

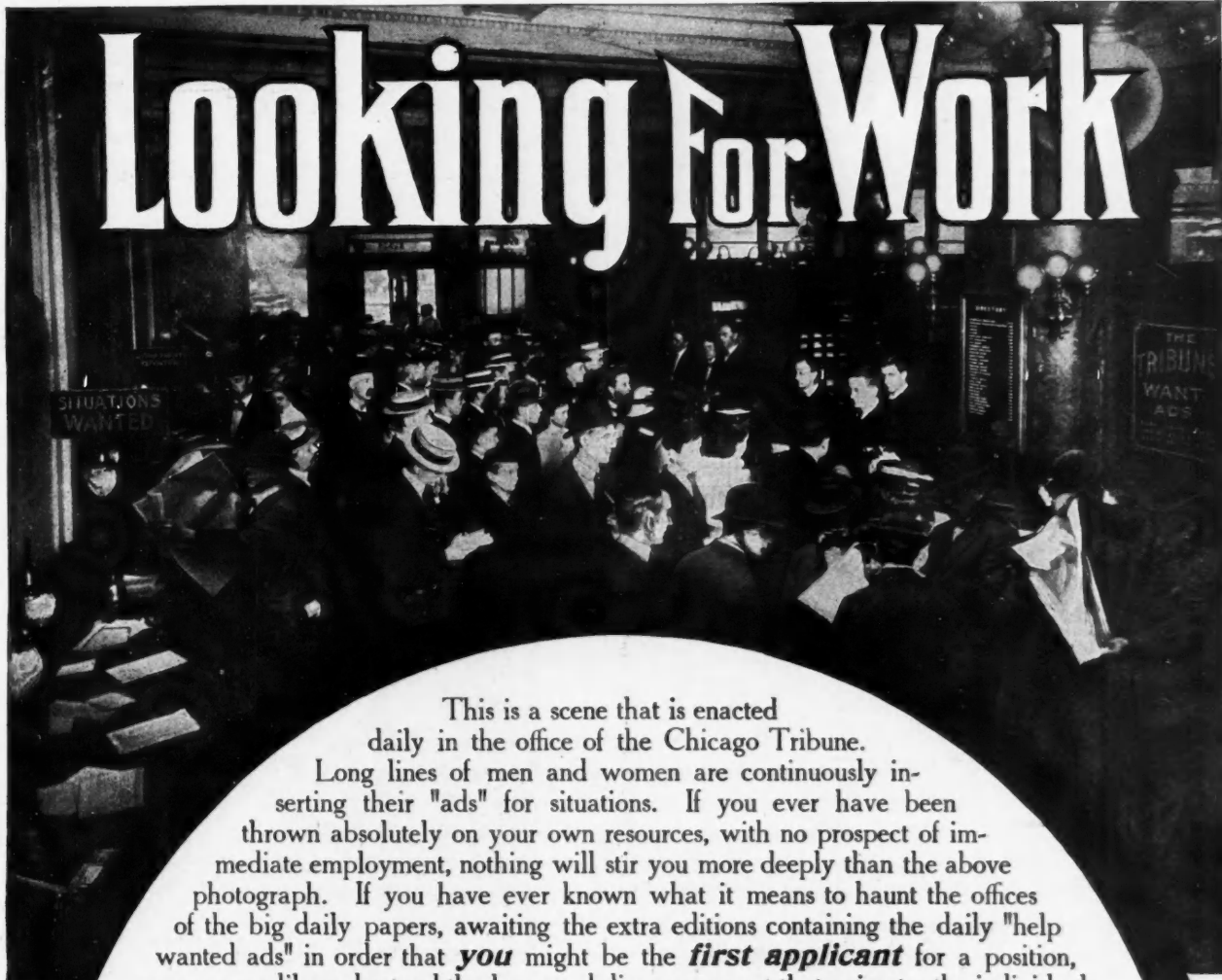
FIRST ANNUAL HOME BEAUTIFUL SHOW Coliseum, Chicago, Feb. 11-22, 1908

This is a great trade exposition for the purpose of introducing the home builder to the home maker. It will be the most beautiful, the most entertaining and the most instructive trade show ever held in the Coliseum, where trade shows have achieved a great and continually growing popularity. All of the things necessary to complete the beauty of HOME may be exhibited at the Home Beautiful Show. All of the things used to furnish the house and contribute to the beauty, comfort, convenience or economy of the HOME may be exhibited at the Home Beautiful Show. The home maker who is going to build, or to rebuild, or to remodel or refurbish, or to furnish or refurnish, will go to the Home Beautiful Show for ideas. It will be the only opportunity many manufacturers and dealers in things for the HOUSE and HOME will have to introduce their goods and materials directly in a large way to people who buy them. You cannot afford to overlook it. It will be a great trade expander. It will teach thousands of people what to buy and where to buy it for the home. It will be the splendidly advertised trade show and it will make new records in the way of attracting crowds. Exhibition space is selling now. For diagrams and other information, address

The Home Beautiful Show Co.

Long Distance Telephone, Harrison 6019

540 Monadnock Block, Chicago



This is a scene that is enacted daily in the office of the Chicago Tribune. Long lines of men and women are continuously inserting their "ads" for situations. If you ever have been thrown absolutely on your own resources, with no prospect of immediate employment, nothing will stir you more deeply than the above photograph. If you have ever known what it means to haunt the offices of the big daily papers, awaiting the extra editions containing the daily "help wanted ads" in order that **you** might be the **first applicant** for a position, you can readily understand the hope and discouragement that animates the individuals in this picture.

How easily any one in this crowd could put himself forever above such a quest for insignificant, poorly paid positions! The only reason that it is necessary to compete with hundreds of others for such a position is that almost any one is qualified to fill it, and the first applicant will doubtless secure it. **It is only positions that require special training, special skill, special knowledge that must and do seek the man.** Hundreds of such positions are advertised day after day and still cannot be satisfactorily filled. Why not put yourself above the **mediocre** and qualify yourself for a position of responsibility and trust where your earnings are gauged **by what you know and not by the time you spend at your daily task?**

The American School of Correspondence is constantly fitting thousands of young men to start life in positions where there is an assured future for a man of ambition and brains. It is taking older men from poorly paid, uncongenial work and placing them where they can secure better pay, better future, better hours and better work for the rest of their working days.

We employ no agents to annoy you with repeated calls at your home or place of business. We talk to you only by mail. The money you pay us is not used to maintain an expensive organization of high priced agents, but is used to give you better instruction at a lower cost.

**AMERICAN SCHOOL OF CORRESPONDENCE
CHICAGO**

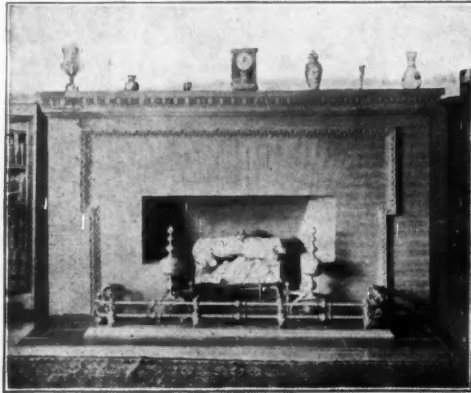
Am. Carp. & Bldr., 10-07
Send me 200-page hand-book describing over 60 courses. I am interested in the course marked X.

- ... Carpenters' Course
- ... Con. & Build. Course
- ... Complete Architecture
- ... Architectural Engineering
- ... Architectural Drawing
- ... Heat., Vent. and Plumbing
- ... Metal Roofing
- ... Cornice Work
- ... Tinsmithing
- ... Structural Engineering
- ... Mechanical Engineering
- ... Tool Maker's Course
- ... Civil Engineering
- ... Electrical Engineering
- ... Col. Prep. Course (fitting for entrance to engineering schools)

Name

Address

We Have a Special Proposition



of interest to
Builders and Contractors
on our
Colonial Brick Fireplaces

WRITE TODAY

A Leading Architect Designed this Non-Smoking Fireplace

We have scores of other fireplace designs—some simple, some elaborate—that will suit if this does not appeal to your artistic sense—all designed by America's leading architects, in conjunction with a practical fireplace builder who has devoted his life to the work of perfecting a fireplace that will not smoke. Our fireplaces leave nothing to be desired in point of true artistic beauty, practicability and honesty of construction. We can refer you to many men of wealth and position throughout the country who find solace and comfort in the warmth and cheer of our fireplaces. Being built of finest specially made brick, they should not be confused with the cheap wooden affairs so often seen in modern homes.

We suggest tints and colors to harmonize with the room decorations. Can be placed in new or old homes.
Our free Book of Designs, sent for the asking, shows a pleasing and suitable variety to meet individual requirements.

Our prices are from \$18.00 to \$250.00

COLONIAL FIREPLACE CO., 2539 W. 12th St., Chicago



"MATCHLESS"

AUTOMATIC
Burglar-Proof Window

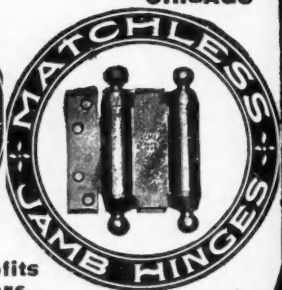
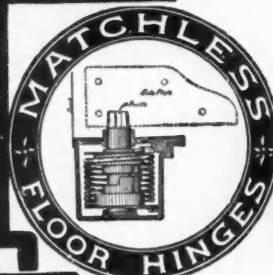
VENTILATING LOCK

Is absolutely burglar-proof
Easily adjusted to windows

Builders, Carpenters and Contractors can make good money applying these locks for their customers

Remit 25 cents for sample

LAWSON MFG. CO.
38 Dearborn St.
CHICAGO



Good Profits
To Dealers


on their merits exclusively and are highly recommended and specified by the most conservative architects of the country.

If your hardware dealer does not carry them in stock, they will be pleased to send your requirements to him, subject to your inspection and approval, and will guarantee them to give entire satisfaction if direction sheets are complied with.

Handsome New Catalogue

Catalogue No. 18, a handsome new book, has just been issued by the L. S. Starrett Co., Athol, Mass. It contains 232 pages descriptive of all that is latest and best in fine mechanical tools, with over 300 illustrations. Many new and unique tools are shown, some additions to sizes of former tools have been made, a number of improvements in design

STARRETT TOOLS



**CATALOG
No 18**

THE L. S. STARRETT CO.
ATHOL, MASS.
U. S. A.

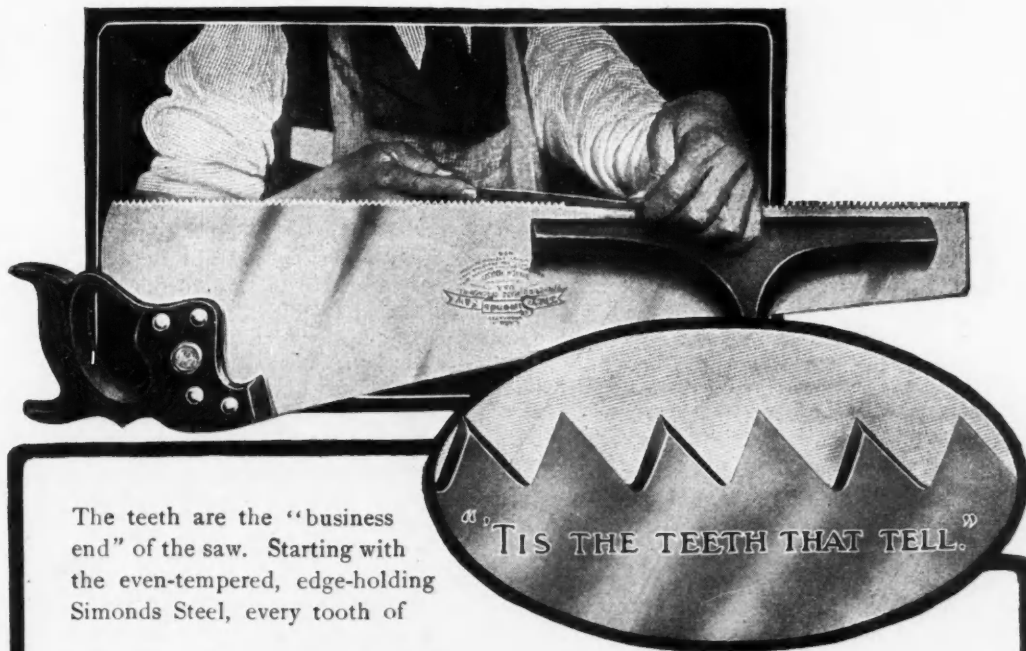
NEW YORK, CHICAGO, LONDON

will be noticed, and several more pages of useful tables are given than before. The arrangement has been carefully revised, every tool indexed both by name and number, and no pains have been spared to make this the newsiest, most complete, handiest and most attractive tool catalogue ever issued. A reproduction of the cover is shown herewith. The company will be pleased to send a copy of this attractive and valuable book to those who are interested.

New Hollow Wall Method

Reinforced concrete in its several forms has already passed the experimental stage. The adoption of monolithic walls by contractors and builders is being demanded by those using concrete, as they have won for themselves an important position, as being economical, practical, durable, frost, moisture and fireproof. The invention is claimed to be one of the best of recent contributions to the industry.

In the method used by the Hollow Wall Machine Company, of Petoskey, Mich., of which company Mr. W. J. Rachow is secretary and treasurer, the stone is molded upon the wall, the molds traveling on a track which is attached to an elevated scaffold. The molds are twelve inches in height, and as rapidly as each course is completed the scaffold is simply raised twelve inches, which operation also raises the tracks and molds, and a new course is started. The same movement is repeated until the whole story is erected, when the joists



The teeth are the "business end" of the saw. Starting with the even-tempered, edge-holding Simonds Steel, every tooth of

"TIS THE TEETH THAT TELL."

THE SIMONDS SAW

and of every other make of saw, does all of its cutting at the point and *only* at the point, therefore the saw which holds the tooth point the longest is the saw which does the business best—cuts clean and fast. Simonds Saws are

Made of Simonds Steel

made in a Simonds Steel Mill exclusively for Simonds Saws—the best saw steel in the world—steel that gives the point the right degree of toughness and makes refiling seldom necessary. That is where quality tells, and the sum of all these excellences is

Simonds Saws are the Best— and They ARE the Best

Every Simonds Saw is *absolutely guaranteed* perfect in material and workmanship, whether it be a Hand Saw, Circular, Cross-cut, Buck or Band Saw.

Insist on having "a Simonds." Your hardware dealer should promptly supply you with a Simonds Saw of any style, point or size. If your dealer does not keep the Simonds, let us know and we will see that you are supplied.

"Simonds Carpenter Guide" Mailed Free

This booklet will tell you about Simonds Saws and give other information of real interest and value.

SIMONDS MFG. CO.
Fitchburg,
Mass.



Look for this trade mark etched on every saw.

Saws carried in stock at the following places

- | | | |
|---------------|---------------|-------------|
| CHICAGO | NEW YORK CITY | NEW ORLEANS |
| SAN FRANCISCO | PORTLAND ORE. | SEATTLE |

are placed and the entire apparatus is raised to that floor and a new story added, consequently the same apparatus is sufficient to build any number of stories in height.

Between each twelve inch course the walls are tied together with steel ties which reinforce and strengthen the walls, lengthwise and crosswise, thus making the entire walls one complete net of steel reinforcement.

There is no limit to the different designs that can be made, and inasmuch as the natural concrete is more beautiful and lasting than any imitation, it is plain to be seen that the new method has the greatest advantages. See their advertisement in this issue.

A card mentioning the AMERICAN CARPENTER AND BUILDER will bring to you full details of the method.

A New Hall or Bathroom Hook

The Atlas Manufacturing Co., of New Haven, Conn., have just put on the market a new hall or bathroom hook, which



is illustrated here-with. This hook embodies the principal features of their regular coat and hat hook, having the same metal clasp in the corner, which adds great strength and, results in a much more open and roomy hook, and also the

swell at the bottom of the lower hook, which keeps it from turning on the screw. This latter feature is a very popular one. In fact, the only difference between this hook and the regular hook is in its length, being four inches long, and in

the upper hook being lengthened and turned upwards so as to give a secure support for hats of all shapes and sizes. The hook was made originally to sell in the far east, but is proving to be a good seller in this country. It is used exclusively in the nickel plated finish.

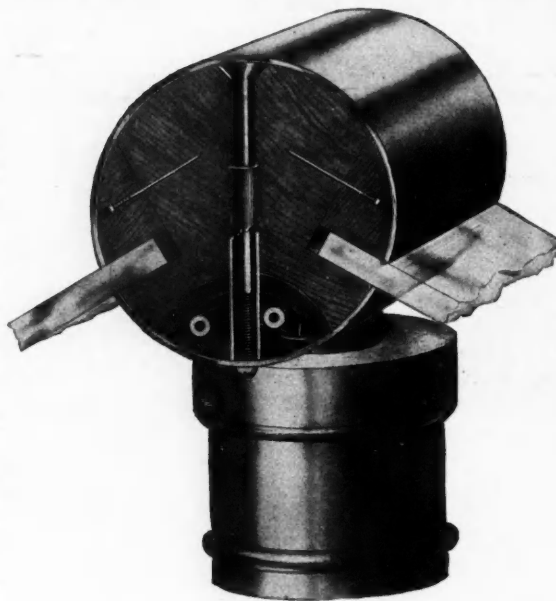
A Useful Window Device

In the advertisement of the Lawson Mfg. Co., 38 Dearborn street, which appears on another page, is the illustration of a very useful device known as the the "Matchless" burglar proof window ventilating lock, that should be on windows of every home. Its merits are many and it should prove a business getter for carpenters to introduce in their localities. It consists of a highly polished strip of steel which fastens on the inside of the upper sash and contains a groove into which slides automatically, as the lower sash is raised, a steel device containing a knob. This device is fastened to the top of the lower sash. Through this knob runs a bolt that releases itself automatically and slides into the groove section and locks firmly when the lower sash has been raised a sufficient amount of space to allow proper ventilation and yet not sufficient to admit entrance through the window, as it is not possible for anyone to reach through the opening and release the bolt because of the manner in which the latter operates. This makes the window burglar proof and safer in fact than if it were closed and only protected by the usual form of sash lock found in the center of most windows. While the Matchless window lock cannot be released from the outside, it is easily operated by a person on the inside and does not interfere in the least in raising the lower sash to its full length if so desired, as it can be operated with one hand without any delay or trouble. It is the best protection for windows against sneak thieves and porch climbers that has come to our notice. It is made of steel but finished in about twenty colors, from dead black to brass antique. The Lawson Mfg. Co. also

National Store Front

— The —
**Most Brilliant,
 Beautiful and
 Graceful Front
 in the World**

*Minimum Light Space
 taken up. Maximum of
 Strength. No Unsightly
 Screws on Face of Metal.
 The same Contour and
 Finish inside and out.
 All Glass sets from Out-
 side. Low rate of In-
 surance.*



Patented 1907

— Absolutely Dust
 Proof Construc-
 tion with Elec-
 tric Light Fix-
 ture Combined

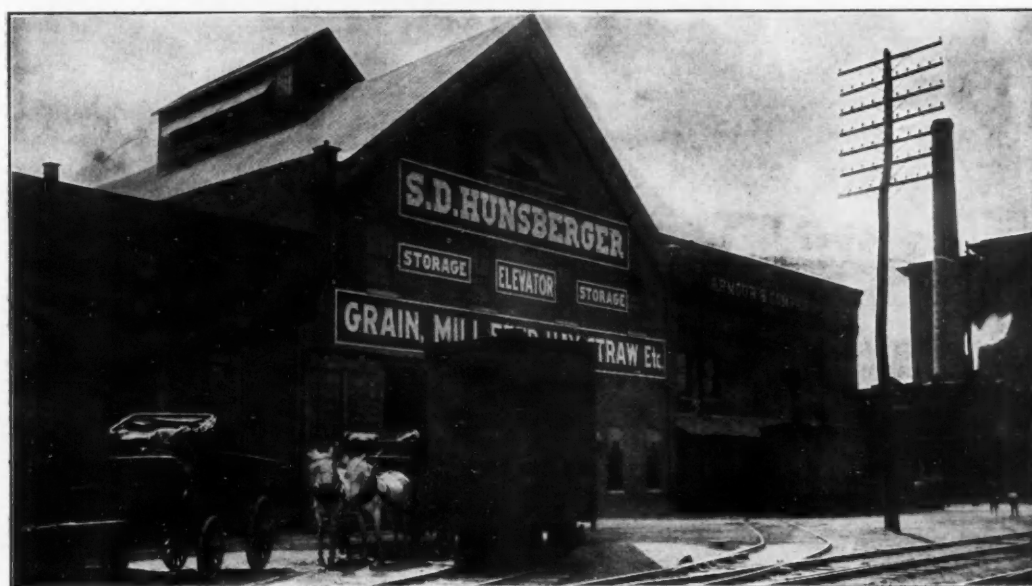
Every Glass Jobber in the
 United States handles it.

Write for
 Catalog and Prices

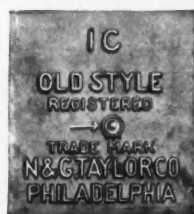
National Store Front Co., - Pittsburg, Pa.

A Target & Arrow Old Style Tin Roof

twice saved this building from destruction by fire



THIS WAREHOUSE affords a convincing illustration of the fire-proof qualities of "Target-and-Arrow Old Style" roofing tin. It is located in Philadelphia and owned by S. D. Hunsberger. In the spring of last year the building adjoining was destroyed by fire, rebuilt and again destroyed by fire in the fall. At the time of both fires the wind carried the flames and sparks directly across the roof of the warehouse, but without damage to the building and the tin itself required only a re-soldering of some of the seams and a new coat of paint.



Reg. U. S. Pat. Office.
This trade-mark stamped
on each sheet of the genuine
original "old style" tin

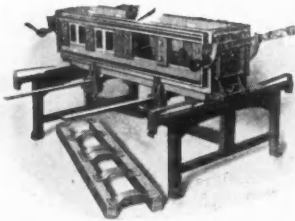
No roofing material manufactured offers the fire-resisting qualities of tin. No tin manufactured offers the weather-resisting qualities of "Target-and-Arrow Old Style." It makes the safest, most sanitary and most serviceable roof for any building. The roof of any structure is of sufficient importance to warrant a study of the subject before building. Our booklets, "A Guide to Good Roofs" and the "Tin Roofer's Hand Book," both sent free on request, will be found to be informing and authoritative text-books.

N. & G. TAYLOR COMPANY (Established 1810) **PHILADELPHIA**

manufacture the well known Matchless floor hinges and the Matchless door. Read their ad. for more information as to how to obtain a sample of the "Matchless" burglar proof window ventilating lock.

Francisco Block Machine

The Francisco Adjustable Concrete Block Machine makes blocks from coarse, wet material, consisting of crushed stone or gravel, a stone as large as a hen's egg not interfering in the least with the operation of the machine. The material is used in the machine with enough water added to make it into



a stiff mortar. The blocks are made out of doors as wet as it is possible to make them, as the sun does not affect them. This means a big saving in the cost of equipping a plant, as cars and buildings are not required. Double

the strength is secured with half the amount of cement that would be necessary if using sand and the dry process for the construction of the block. They use a mixture of 8 to 1 for the concrete part of the block, and a mixture of 2 to 1 for the face, this mixture of 8 to 1 of coarse material, as test proves, being equal in strength to 3 to 1 of sand and cement.

One of the principal advantages of this wet material is the fact that a block made wet will crystalize so that it will not take any moisture. This crystalization is not possible without adding the water when mixing the material, as water gives

density and density gives strength. With this style of construction, plaster may be applied direct on the wall, as the moisture cannot penetrate.

With this coarse and wet material, the Francisco machine is able to produce a block for one-third less money than can be produced from sand and the dry process, and the block has double the strength.

Write the Francisco Adjustable Concrete Block Machine Co., Columbus, Ohio, for further particulars.

Large Increased Capacity

The National Manufacturing Co., Sterling, Ill., manufacturers of builders' hardware and hardware specialties, are just completing a three-story addition to their factory, 100 feet by 100 feet in dimension. The building is constructed of brick and concrete and will be supplied with the best of modern equipment. All presses, punches and other heavy machinery will stand on concrete bases. The building is equipped with elevators and traveling cranes, reducing to a minimum the labor necessary in handling the steel and finished product. With their largely increased capacity the company is in a position to fill all orders with more than their usual promptness.

The Brandell Block Machine

A great factor in the production of concrete blocks on a profitable basis is the time required in operating the machine. The machine with the fewest operations and which can be made ready the quickest for the next mold, after the previous block has been discharged, is sure to win out for the purchaser, providing it is built on principles that produce the



Solid Comfort

Is enjoyed by the man
whose home is heated

with

Klymax

Boilers

and

KEWANEE

Radiators

Kellogg Mackay Cameron Co.

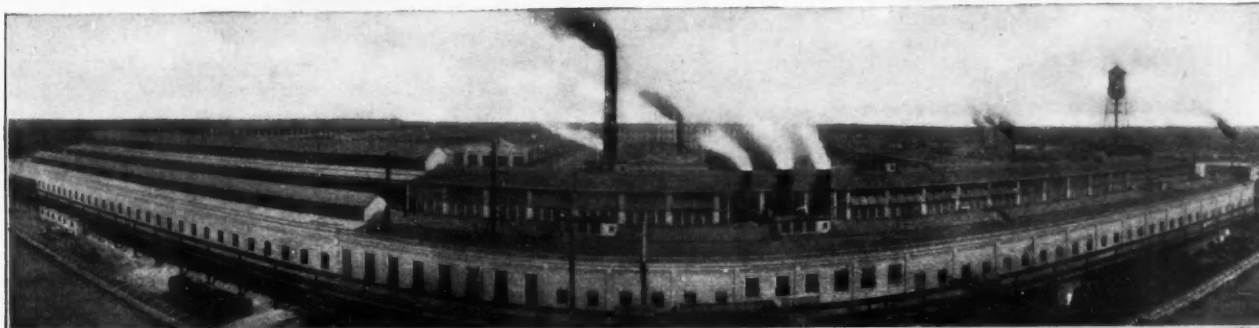
K.-M.-C. Building,
Michigan Boul. and 12th St.
CHICAGO

MINNEAPOLIS, MINN.
100-106 2nd St. South

SEATTLE, WASHINGTON
639 New York Block

KANSAS CITY, MO.
2nd and Main Sts.

Barrett Specification Roofs



Allis-Chalmers Plant, showing 300,000 square feet of Barrett Specification Roofs.

FOR ALL PERMANENT BUILDINGS

It is significant that **Barrett Specification Roofs** are almost invariably adopted for buildings with large roof areas such as factories, railroad buildings, etc. where the cost and durability of materials must be carefully considered. An example of this is the well known Allis-Chalmers plant, illustrated herewith. All the recently erected buildings carry **Barrett Specification Roofs**, amounting in all to about 300,000 square feet.

A **Barrett Specification Roof** in a typical instance (King Phillip Mill, Fall River, Mass.) was recently renewed after it had seen thirty years of service.

Its original cost was less than any style of metal roofing would have been. Tin or sheet iron would have required continual painting and even then would have been liable to rust and corrode, causing loss by leaks. A ready roofing,

with its narrow laps and exposed nailing would have been entirely unadapted for use on a building of this type, where the roof is of moderate pitch.

The cost per square foot per year of service in the case of **Barrett Specification Roofs** is remarkably low; First, because the original cost is always moderate, and second, because the maintenance cost as a rule is nothing, (as the roof requires no painting or protection of any kind). In the case of the King Phillip Mill, for instance, the total roofing cost was only about one-fifth of a cent per square foot per year of service.

Low cost and satisfactory service have made **Barrett Specification Roofs** more largely used than any other kind.

The Barrett Specifications in pocket edition form will be mailed free on request to anyone interested.

Barrett Manufacturing Co.

New York Philadelphia Cleveland Cincinnati Minneapolis Boston Chicago
St. Louis Allegheny Kansas City New Orleans London, Eng.

best block that can be made. Such a machine is combined in the new Brandell concrete block machine, manufactured by the Brandell Concrete Block Machine Company, corner Dearborn and Madison streets, Chicago. This machine has a self-locking mold that does away entirely with the handling of plates, gates, pins, clamps and other devices and saves thirty per cent in the labor required to produce each block. A handsome new catalogue which tells all about the Brandell has just been issued and will be sent free to any address for the asking.

The Holdfast Casement Sash Adjustment

During the past few years there has been a great and rapid increase in the popularity of casement windows for residences. About two years ago a prominent architect, who has always used casement windows exclusively in his residence work because of their splendid ventilating qualities and superior appearance, invented the "Hold-Fast" adjuster, which entirely overcomes all former difficulties. It swings the sash easily and locks it solidly at any angle from inside the screen and storm sash. Although the "Hold-Fast" is the first device of its kind on the market it still remains the simplest, the neatest in appearance, and easiest to operate—so easy that a child can operate it in the dark.

The "Hold-Fast" consists of an outer arm about 13 inches in length, slidably constructed and connected by means of a knuckle joint to the sash and to a heavy pivot which passes through a bushing plate set into the window stool between sash and screen. This outer arm is easily swung to and fro by means of an operating lever which passes through a slot in the window stool covered with a locking plate in which are a series of holes or scallops. This operating lever consists of a brass sleeve with a neat ball handle sliding over a short steel arm which is screwed through the lower end of the pivot below the window stool. As the window is swung open the upper arm, which is attached to the sash and consists of

a heavy brass tube and a solid brass rod sliding in same, is extended, giving a powerful leverage. This device will open the ordinary sash to nearly 90 degrees, at which point the solid rod extends about 4 inches into the tubular arm to give ample strength and avoid friction.


When locked in position, the sleeve of the operating lever is pushed in one of the scallops of the locking plate and projects very little, if any, beyond the edge of the ordinary window stool. When extended and unlocked it gives a powerful leverage—a very strong point. The sash is operated simply by pulling out the operating arm and swinging it to the desired position and pushing the arm into the locking plate at the desired point, open or closed. The steel pivot consists of a heavy solid brass head and a steel extension secured to same by means of a heavy set screw, making the angle between the upper and lower arms adjustable to suit the various distances between screen and sash in different jobs.

An illustration of the "Hold-Fast" Casement Sash Adjuster will be found in the ad. of the Casement Hardware Co. on page 130. They manufacture this device, furnish it in all finishes, and make changes to order in the length of pivots and arm where required to fit special cases.

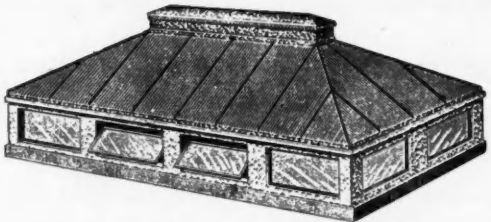
Practicability of Parquet Floors

For all classes of homes and in all rooms hardwood and parquet floors are practical. In point of cost they are an inexpensive luxury. In points of economy, sanitation and utility they are virtually a necessity. The parquet floor is a robust elegance in the sense that it combines the delicacy of great natural beauty with the wearing qualities of iron. One of the leading manufacturers of these floors and the pioneer in the business in the west is J. Dunfee & Co., of Chicago. They have a large factory at 98 to 200 Union street, with salesrooms at 100 Franklin street, corner of Washington, and are the only Chicago firm in this line that manufactures their own product. Their business is exclusively floors, they being

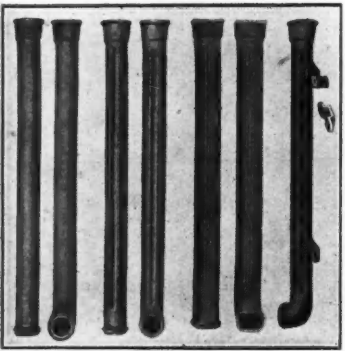
The Canton Manufacturing Company




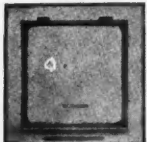
**GALVANIZED AND COPPER
CORNICE
CRESTING, FINIALS, ETC.**




**SKYLIGHTS AND
VENTILATORS**




Cast
Iron
Boots
and
Sewer
Connec-
tions



**COAL HOLE AND VAULT
DOORS, RINGS,
FRAMES AND COVERS**



METAL CEILINGS, ETC.

CANTON 1210 E. SECOND STREET OHIO

LORENZEN

\$2.50

to

\$250

MANTELS

YOUR HOME—Everybody's home should have a mantel. A mantel is useful as well as artistic and decorative. It saves you furnace heat on chill Spring and Autumn days, and diffuses cheer and comfort more than does any other piece of furniture in the house.



No. 468.—Modern Mission Style, 5 feet 11 inches high and 5 feet wide; heavy plain shelves, recessed leather panels; the brackets supporting main shelf are carved with Spanish insigina. Forian-Vitre tile hearth and facing. Hand-wrought Andirons of Romanesque design.

CHARACTER and QUALITY

Lorenzen Mantels have a distinct character and quality both in design and workmanship, not possessed by others. This has made for them world-wide reputation and enormous sales. The great volume of our output is what enables us to sell Lorenzen Mantels at such low prices. We have more than 100 designs and styles selling at from \$2.50 to \$250.00.

STYLES

Lorenzen Mantels embrace Colonial, Craftsman, Modern Mission and numerous other styles, and all woods and finishes. Our modern factory, large stock of air-seasoned lumber, and expert, skilled workmen all mean beautiful mantels, far above the ordinary. We are at all times prepared to furnish designs of mantels and fireplaces in the historic periods of architecture, such as Louis XIV, Louis XV, Louis XVI, Renaissance, Gothic, Rococo, Empire, Early English, Colonial, Chippendale, Sheraton, Adam, etc.

FREE CATALOGUE—The largest and finest catalogue of wood mantels ever issued, with photographic reproductions. Each copy costs us nearly a dollar to issue, but we send it **free** to all Carpenters and Builders. If you write for it now, you won't forget.

CHAS. F. LORENZEN & CO., Inc.
296 N. ASHLAND AVE., CHICAGO

LORENZEN
 PAYS THE
 FREIGHT

specialists in this one particular line, and are pioneers in the business, having been established since 1893. They have a very handsome catalogue showing hundreds of designs illustrated in the natural colors of the finished product. This catalogue, together with a neat and valuable little booklet called "Pointers," on the care of parquet and hardwood floors, is sent free to all who write and ask for the same. They give the exclusive representation of their line to reliable men in each community. Read their ad. on page 118.

An Interesting State Fair Booth

The W. J. Burton Co., of Detroit, Mich., had an interesting booth at the recent Michigan State Fair. The base, columns, brackets and upper section was made of their Natural Asphalt Gravel Surface Roofing and Siding, the finish around the edges being galvanized covering, as shown in the photograph. The lettering was of metal. The ceiling of the booth was covered with their Ornamental Pressed Metal Ceiling, and the



side walls with Neponset Sheathing. The border effect was made by connecting three-inch round corrugated galvanized elbows together. An assortment of their different brands of roofings and siding was also placed around the inside of the booth. In the right hand corner between the two columns will be noticed a section of their Eastlake Metal Shingles, the leader among their roofing materials. This shingle created an unlimited amount of attention. The outside of the booth was also very interesting, and at a short distance one could hardly distinguish the difference between this and granite stone finish.

Mantel Creations

No small part of the comfort and cheerfulness of the home is contributed by the mantel. A mantel in the home is always useful as well as artistic and decorative. Very few homes are built today without provision for a mantel or fireplace. Mantel manufacturers have spared no expense or study in the production of types and designs that cover every known style of architecture. One of the leading firms of high repute, devoting their exclusive attention to the production and sale of mantels, is the Chas. F. Lorenzen Co., of Chicago. They have recently issued a very elaborate catalogue showing over one hundred designs of wood mantels. This catalogue cost them nearly one dollar per copy to issue, but is sent free to

all carpenters and builders, and will certainly prove a great help in enabling them to sell their customers any desirable style of mantel. It contains mantels costing from \$2.50 to \$250. Write for it.

Artistic Wood Grilles

The name of Bertelsen means much when it comes to quality and design in artistic wood grilles. The Bertelsen Adjustable Grille Co., who for years have been constant advertisers in the AMERICAN CARPENTER AND BUILDER, have recently doubled the capacity for manufacturing their line of grilles, among which are the patent adjustable grilles, which possess features not contained in any other make of grilles, as they can be adjusted to fit any opening. The Bertelsen company makes a feature of made-to-order grilles of special designs from architects' detail drawings. Where rough sketches with size of opening are sent to them they will elaborate and promptly submit design and prices for grilles. They are prepared to furnish this class of work in any kind of wood or style of finish. Their ad. on another page shows a very good grille design. Write them when wanting grilles and for catalogue.

A Heating System of Merit

In building a new home too much consideration cannot be given the subject of heating it. This matter should be given detail attention before construction work begins. Much has been said and written on home heating, but the new booklet, under the title "Advanced Methods of Warm Air Heating," recently issued by the United States Register Co., of Battle Creek, Mich., and Minneapolis, Minn., is probably about the clearest and most easily understood explanation of the real essential elements of home heating and ventilating that is to be found today. This booklet is sent free to those who write and mention the AMERICAN CARPENTER AND BUILDER. You will obtain many good suggestions and much practical infor-

We Sell Direct

INTERIOR FINISH, MILLWORK, STAIRWORK

Windows, Doors, Blinds, Interior and Exterior,
Window and Door Frames, Composition Caps,
Porch Material. Builders Hardware.

GLASS for BUILDING PURPOSES

Send us your plans for delivered prices

We Make Quick Shipments

416 Page Catalogue Mailed Free

BAYER BROS. SASH & DOOR CO.
Dept. C. ST. LOUIS

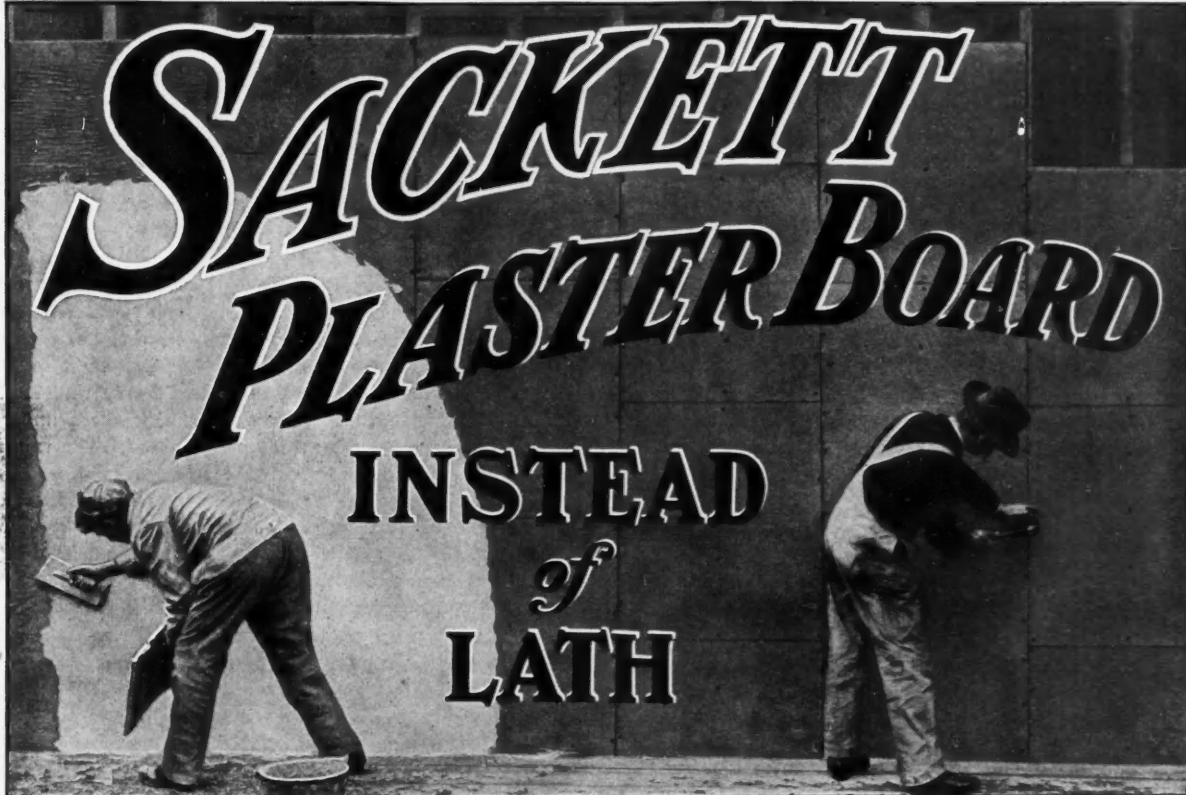
BUY ART GLASS OF THE MAKERS



25% DISCOUNT
To Contractors and Builders

We manufacture Art Leaded Glass in all the new styles—COPPER and BRASS settings. Colored glass of all kinds for making lamp shades. Estimates and designs furnished promptly.

McCULLY & MILES CO.
76 Wabash Avenue, Chicago



FIREPROOF AND ECONOMICAL

Sackett Plaster Boards have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches, and theatres.

Walls and ceilings of Sackett Plaster Boards will be **dry and ready in half the time** required when lath is used, as less than half the quantity of water is needed.

Less moisture means less damage from warped and twisted trim and woodwork.

Their superior insulating qualities make warmer houses with less fuel. The first cost is no more than good work on wood lath, and less than on metal lath.

Sackett Plaster Board is an efficient and economical

fireproofing, not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses, and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

Sackett Plaster Board comes in sheets or slabs 32 x 36 inches, ready to be nailed direct to the studding, furring, or beams.

For all kinds of buildings its use is ideal. It speeds construction; it lessens building cost; it reduces fixed charges for insurance; it makes fire-resisting walls and ceilings; and gives absolute satisfaction.

Carried in stock by *up-to-date building-material dealers* everywhere.

Booklet showing buildings all over the country where these Boards have been successfully used with **Samples** and name of nearest dealer, furnished on application to any of the following General Distributors

UNITED STATES GYPSUM CO.
CHICAGO CLEVELAND MINNEAPOLIS

SACKETT PLASTER BOARD CO.
17 Battery Place, NEW YORK CITY

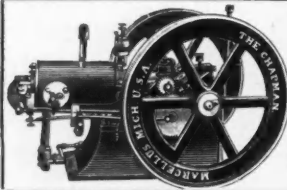
GRAND RAPIDS PLASTER CO.
GRAND RAPIDS, MICH.

HOTEL GRISWOLD, NEW LONDON
14½ Acres of Sackett Plaster Board used in its construction
R. W. Gibson, Architect



Grinnell's Estimator and Builder's Pocket Companion

A handbook for Contractors, Masons, Carpenters and Painters. The young mechanic can estimate as accurately by this book as the experienced builder. Send money order for \$1.00 to the Grinnell Publishing Co., Medina, N. Y., and if you don't like it return it and we will return your money.



THE ECONOMIZER

1 to 2 H.P., larger ones later. That name means something. Four years sales, doubling each year, without a single dissatisfied customer, means something. It's all in the engine, no shoddy goods, no expert needed. Do you wish to know more? Write us. **ENGINE WORKS, Lock Box 695 Marcellus, Mich.**

FOR GERMANY Well Known Important Firm in the Building Trade having high connections and bank references, also branches and agencies, and since many years successfully introduced all over Germany amongst imperial government and city (building) offices and leading architects, is open for general agencies for Germany (on commission or own account) of first-class (patented) novelties of any description concerning directly or indirectly the building trade. Address with full particulars the Managing Director, **MR. BOLDT, 48 Hansaring, Cologne, Germany.**

HOUSE SEWAGE
SCIENTIFICALLY AND COMPLETELY DISPOSED OF on your own premises, **without sewers**, by means of *Natural Processes*. No chemicals. No attention. Send for **FREE Booklets** containing particulars. **HOUSE-SEWAGE DISPOSAL CO. ROOM 21, 6515 NORMAL AVE. CHICAGO**

"Creole"
"Etowah"
"Cherokee"
"Kennesaw" } **Georgia Marble**
The Georgia Marble Co., TATE, GA.

Buff and Blue Bedford Stone
in any shape desired
GEO. W. BOLLENBACHER
The Stone Broker **BLOOMINGTON, IND.**

WHO WANTS SLATE?
Roofing Slate for Houses, Barns, etc. Always clean, beautiful and fireproof.
Blackboards for Schools, Colleges, etc. Needs no commendation; universally used all over this and other countries.
Structural Slate. Electrical Stock, Sinks, Troughs, Washtubs, etc. Superior to all stone for such purposes.
Slaters' Supplies. Handmade Slating Tools, Felt, Cement, Nails, Snowguards, Punching Machines, etc.
Write for prices and I will tell you all about Slate.
DAVID McKENNA, Slatington, Pa., U. S. A.

SLATE WE HAVE WHAT YOU WANT
*In Roofing Slate, Slate Blackboards
Structural and Plumbers' Slate*
SATISFACTION GUARANTEED IN QUALITY AND PRICE
ASK FOR DELIVERED PRICES
J. K. HOWER, Station C., Slatington, Pa.
H. J. KICHLIN, Sales Agent

mation from it about heating. An ad. of The United States Register Co. appears on page 13 of this Home Builders' Number.

Brown's Roofing Experience

To Sam, the Roofer:

No doubt you would like to hear something about the town you left some years ago, so I will tell you some. You remember old man Brown, and the house you covered for him with that felt and gravel roofing because he would not hear to slate. Would have nothing else than felt; the price appealed to him stronger than quality.

The year following the one you left town was one to be remembered by Brown. It was now three years that this roof was on, but one April morning was one that got old Brown into a fomentation, because he was always tight on money matters. During the night there was a heavy thunderstorm; this felt roof was a sight. The wind had gotten under it at places. Now you can imagine how it looked. The rain found these places and went through the ceilings.

A change came over Mr. Brown. He now condemned this sort of roofing material and would have a tin roof, consequently a tin roof was put on, using good material, but there is where Brown again made a mistake. He was told he must keep this roof in paint—that really it should be painted every year. He did this one year, then figured the cost and came to the conclusion that this made too expensive a roof, so no more paint was put on. Four years later he found his roof was leaking in patches like a sieve, so he employed a roof mender who went on the roof with muslin and hot pitch, putting the pitch on the part that had holes, put on the muslin and painted hot pitch over it again. This process was repeated several years until finally the whole roof was covered. Here the fire insurance agents came in and told Brown they must cancel the insurance because the policy called for a tin roof, and now he had an inflammable one.

Brown was now astir, and for several days he pondered over the situation. The roof did not leak, still he had a poor roof. He learned that the insurance people reduced the rates on slate roofs over those of other kinds, so now he sent for your humble servant and asked for an estimate for the best slate roof. I was surprised, as I thought he wanted the cheapest again, but figured on the best and gave him the price. As soon as he had the figures he yelled, "I accept—how soon can you put it on—get it on tomorrow." The following week I finished the roof, using for the main part 8 by 16 Hower's Special Slate, bought from J. K. Hower, Slatington, Pa., underlaid with the best slaters' felt, and each slate fastened with two galvanized 3d cut nails. The bell shape tower and the lookout are covered with 8 by 10 Franklin slate, because there were no small size of Hower's Special on hand. This was five years ago and the roof has still a uniform, even, beautiful color. Brown is pleased, says he did

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.
IVES' PATENT Window Stop Adjuster.
HEAVY BED
PATENTED.
The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)

THE FOX



Built on Scientific Principles, Yet Simple in Construction

Simplicity is the most important factor to be considered in building a machine. In this respect, as in all others, the FOX SCRAPER EXCELS. A glance will convince a practical man that it *must*, of necessity, *do the work*. It consists of very few parts, yet is complete in every detail.

Easy to Operate

Any man who can use a hand scraper can operate the Fox Floor Scraper and do good work. Bear this fact in mind that you do not have to keep a trained man or expert in your employ to operate this machine. Simply draw the machine toward you and it will do the work. Any boy of sixteen years can operate this machine and do rapid and perfect work.

Will pay for itself in two days' work

Fox Mfg. Co.

187 Second St.
MILWAUKEE, WIS.

The Floor Scraper THAT HAS Taken the Lead



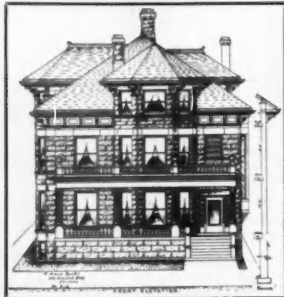
The difference between the FOX FLOOR SCRAPER and other floor scrapers is the difference between a practical and an impractical machine.

It looks like a floor scraper, doesn't it?

What Are These Men Doing?



PLANS FOR BUILDINGS



Why Pay More?

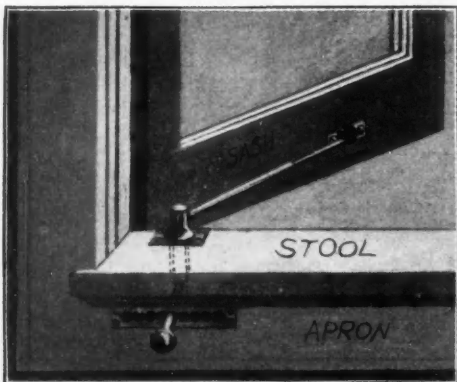
Five Sets of Stock Plans.....	\$ 5.00
Single Copies " "	3.00
Five Sets, Cottages, to order	10.00
Five Sets, Residences " " "	10.00
Five Sets, 2-Flats " " "	10.00
Five Sets, 3-Flats " " "	15.00
Five Sets, 6-Flats " " "	25.00
Five Sets, 12-Flats " " "	45.00

MAIL ORDERS
SOLICITED

P. HALE, LICENSED ARCHITECT
603 Atwood Bldg., CHICAGO

CASEMENT SASH ARE THE BEST

FOR RESIDENCES



They are
Tight
and
Warm
in
Winter
and
Great
House
Coolers
in
Summer

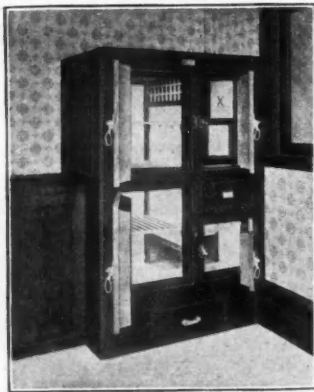
ALWAYS HANDY TO WORK WITH OUR
HOLDFAST ADJUSTER AND LOCK

It works entirely from **INSIDE** the screen
Simple, Durable, Adjustable,
Easy to put on New or Old Work

Send for our Illustrated Booklet

THE CASEMENT HARDWARE CO.
Herald Building CHICAGO

TROTTER
Refrigerators
pay because
they
save their
expense
in the saving
of ice
Outside doors
if desired
Family
coolers made
to fit any
required
space



DON'T
buy a cheap
cooler
It never pays
Ours are
Sanitary and
Durable
Special
Designs
submitted for
approval
Send
for
catalog

C. W. TROTTER & SONS
7 EAST AVENUE ROCHESTER, N. Y.

not need to clean the cistern twice a year, got a reduction on the insurance rate, and has a roof that makes the property more valuable.

My paper is full, so must close; will write you about others later.
RUBE, THE SLATE ROOFER.

Metal Shingles in Great Demand

The passing of the wooden shingle, made necessary by the scarcity and expense of suitable timber, is bringing into use more every year the metal shingle, and with the use of improved machinery these are now as cheap as the wooden variety and far superior. Even the first cost is no more than that of first-class wooden shingles, while the metal roof is more easily laid, and is practically indestructible.

One of the most prominent firms manufacturing metal shingles is the W. J. Burton Co., of Detroit, Mich. This firm makes the well-known "Eastlake" brand, with which many of the finest buildings are roofed. The firm has been manufacturing this brand for more than 20 years, and several roofs covered in 1887, when the patent was issued, are in as good condition today as when first laid. The W. J. Burton Co. includes in its list of customers, in addition to the largest contractors in the city and state, the United States government.

In the "Eastlake" brand the firm has overcome one of the great drawbacks to metal roofs. The shingles are so made that no solder is required in laying the roof. Solder cannot be made strong enough to withstand the effects of contraction and expansion. A system of joints takes the place of solder in the "Eastlake" shingle, and this joint is guaranteed water-tight, is easily applied and no nails are left uncovered.

The W. J. Burton Co. has a long list of testimonials, which came unsolicited from builders all over the country. These recommendations come from nearly every town in Michigan, and from as far west as California. Write them for full particulars concerning their special "Eastlake" brand.

Wood Grilles, Columns and Consols

Prospective buyers of wood grilles, columns or consols will be interested in the handsome new catalogue issued by the Northwestern Grille Works, 1452 Milwaukee avenue, of which Christenson Bros. are proprietors. The members of this firm are practical shop and bench men and very particular about the quality of their entire output. They personally oversee all details as each piece of work passes through the shop. In their new ad. in this issue appears the illustration of a consol of popular design. There are several different patterns of these shown in their catalog as well as many handsome designs of grilles and columns. You will make no mistake in writing for their catalogue, which is sent free.

Cater Specially to Dealers

The International Wire Works, of 857 Superior street, Detroit, Mich., is one of the few concerns that cater specially to builders in the manufacture of wire and iron work of every description. Any subscriber of the AMERICAN CARPENTER AND BUILDER, having at any time a building to figure on which requires any wire or iron work for exterior or interior, will do well to remember that the above company stands ready to assist in estimates and advice on a basis that will save builders money. All work is done under the personal supervision of H. J. Gahlan, a man of long experience and high reputation in this line. They have a display ad. in another column.

The Deissler Ventilators

The use of stained glass has become so general in every kind of structure, residence, store and public building, a demand has been created for some reliable method of safely ventilating sash windows. It has remained for P. Deissler & Bro., 249 South Sixth street, Philadelphia, Pa., to patent,



-the Mantel for You

The Mantel for you is the Mantel you buy from the manufacturer himself, straight from factory to fireside, and at a net price.

The ROYAL MANTEL is the one Mantel sold exclusively by catalogue on your mail order; prices in plain figures and every ROYAL an art Mantel every selection a distinct and original creation.

You can't afford not to know the ROYAL line; don't fail to send for our wonderful little "SUGGESTION BOOK"—superbly illustrated—done in gold and colors—which tells you just how to decorate and finish house interiors properly, how to attain proper contrasts, color harmony and beautiful artistic effects. This book is yours, FREE.

The ROYAL MANTEL Catalogue, largest published, sent free on receipt of 12 cents to cover postage. Read up on the ROYAL—the Mantel for you,

WHITE MANTEL & TILE CO., 507 White Bldg. KNOXVILLE, TENN.

KING MANTELS

are the graceful, artistic and high-grade product of a house, expert in its line, using perfected, up-to-date machinery, located in the hardwood belt and favored by excellent labor conditions.

If You Are Going to Build

don't you think it is worth while to investigate our claim that KING MANTELS are the best high-grade dependable mantels for the money in the country? FREE: our 64-page proof book called "Evidence." Shows 37 leaders in KING MANTELS and tells what others say.

A handsome 72-page (11 x 14 in.) catalogue sent for 12c. to help pay postage (which costs us 50c to deliver) including our book "Colonial Beauties." If you write, state number of mantels required.

Do it now!

KING
MANTEL
CO.

551-553 West Jackson Av.
Knoxville, Tenn.



GRILLES



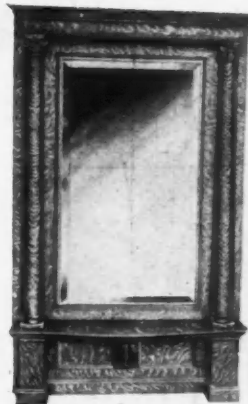
COLUMNS AND CONSOLS

In quality and price our work is not surpassed.

You will make no mistake in writing us before ordering elsewhere.

Send for
Catalog No. 14

It contains many fine designs of modern Grilles, Columns and Consols.



Consol Design No. 1

Northwestern Grille Works
CHRISTENSON BROS., Props. 1452 Milwaukee Ave., Chicago



"NICE" LIQUID WOOD FILLER THE RECOGNIZED STANDARD SURFACER

It dries flat, works freely, does not show laps and requires little, if any, sandpapering. Light shade is perfectly transparent and will not mar the color of the lightest woods. It enables the finisher every time to make a high-class job with two coats, one of "Nice" Filler and one of Varnish or Hard Oil. It makes the very best flat stain by simply adding color in oil to suit. It has remarkable covering capacity (800 square feet to gallon) and is the most durable coating known for natural woods.

Will you let us send you our booklet "Natural Wood Finishing," just off the press? It's worth having and will only cost you a postal.

EUGENE E. NICE, Manufacturer of everything in Paints, Fillers and Varnishes for interior and exterior painting and finishing **272-274 S. 2d St., Philadelphia**

NO
MONEY
DOWN

MEN'S SUITS

ON CREDIT

\$1.00
A
WEEK



Buy Men's Suits, Overcoats, Topcoats and Raincoats direct from our factory by mail

For \$15 & \$18

We require no security or reference and we trust any honest person anywhere in the United States.

We send garments on approval—you don't pay a penny 'till you get the clothes and find them satisfactory—then pay \$1.00 a week.

We are the pioneers and twice over the largest Credit Clothiers in the world. We operate 73 stores in the principal cities of the United States and have over 500,000 customers on our books.

FREE Send today for our fine line of Fall and Winter samples. Self measurement blank, tape and full particulars of our convenient payment plan—all free to you.

Commercial rating \$1,000,000.

Menter & Rosenbloom Co.
285 St. Paul Street Rochester, N. Y.



\$8.98 DRESSES

ANY MAN

With an All-Wool Cheviot Melton, or Thibet Made-to-Measure Suit.

EXTRA TROUSERS AND FREE SUIT CASE


No offer ever made like this to obtain new customers.

We cut and make to measure our new English Sack Suit in the latest fall and winter fashion, well made and durable lined, for **only \$8.98**. Equal to your local tailor's \$15.00 Suit. As the coat and vest will **outwear one pair of Trousers**, we give you an extra pair of the same cloth as the suit and a handsome Gents' Suit Case absolutely **FREE** and nothing to pay until you are well satisfied.

Send no money, but write today for Samples of cloth, fashion plate, tape measure and measurement blanks.

FREE

THE GENTS' OUTFITTING CO., 161 Market St., Chicago, Ill.
Dept. 103. Reference: Royal Trust Co. Bank: Cap. \$1,000,000.




DEISSLER VENTILATORS

FOR STAINED GLASS WINDOWS

Descriptive Calendar Free

P. DEISSLER & BRO.

249 South Sixth St., Philadelphia, Pa.



No. 2 Double Glass
pat. Sept. 22, 1891.

No. 1 Single Glass
pat. Apr. 23, 1901

PAINT POINTERS

Reduce the Cost of Material One-Half
Price \$1.00. Write for Particulars.

F. C. BENJAMIN,

102-104-106 Wayne St.
DETROIT, MICH.

manufacture and market for this purpose, the reliable ventilators which bear their name and have been in successful use since 1891. They make two styles, one for single and one for double glass. They will send a descriptive calendar free to all who ask for it. Their ad. appears elsewhere in this issue.

"Bradford Reds"

To architects and builders generally, the term "Bradford Reds" is so familiar that the two words, wherever seen, convey instantaneously to the mind the impression of superiority and quality. In other words, the term "Bradford Reds" means brick that are different. The term typifies and is the trademark of the product of the Bradford Pressed Brick Co., of Bradford, Pa. These brick are positively unequalled for richness of color, perfection of shading and uniformity of size, which are the three essential elements required for every fine job requiring pressed brick. The "Bradford Reds" are in great demand for mantels and fireplaces, and are unequalled by any others for this purpose, being produced in standard Roman, molded and ornamental forms, all specially selected for mantels. Look up the illustrated ad. describing these brick and write the company at the above address for additional information.

New Book of Practical Plans

In another place in this issue will be found the announcement of G. L. Adams, architect, of Collingswood, N. J., which shows the illustration of an attractive house already built, for which he will sell a complete set of plans for \$10.00. Mr. Adams also offers to send a new book of actual photographs of low-cost suburban houses, already built, all well planned, practical and artistic, for the small sum of 25 cents in silver. The only stipulation he makes is that you mention the AMERICAN CARPENTER AND BUILDER when you write for his book of photographs.

Genuine Bangor Slate

Slate roofs have stood the tests of time, wind and fire on all kinds of buildings. Slate is one of the oldest, yet most popular materials for roofing purposes. The very best slate roofing for structural purposes and blackboards comes from Bangor, Pa., which is the home of the East Bangor Consolidated Slate Co., which has an ad. in this issue on page 143. This company will be pleased to furnish valuable advice and information about slate in general and slate roofs in particular to all who write.

The Use of Georgia Marble

The history of building in this country is replete with the evidence of the beautiful effects produced by the use of Georgia marble, both for interior and exterior purposes. No more durable or beautiful grades of Georgia marble are to be found than are those known as "Creole," "Etouah," "Cherokee" and "Kenesaw," all of which come from Tate, Ga. The Georgia Marble Co., of the above place, are the exclusive shippers of these grades of marble. Their ad. appears in another column.

Disposal of House Sewage

The sewage from residences having no sewers can be readily purified and disposed of in your own door yard by natural processes. The House-Sewage Disposal Co., 6515 Normal avenue, Chicago, are experts in this line. Their advertisement, which will be found on page 128 of this issue, is interesting, and by writing them much additional information will be obtained.

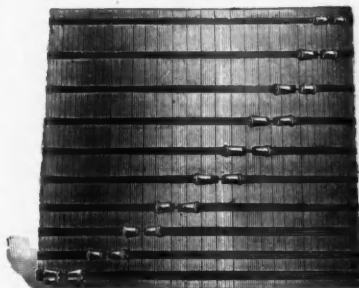
Building Plans at Small Cost

P. Hale, who is a licensed architect, with offices at 603 Atwood building, Chicago, has an announcement in another column in this issue offering plans for buildings at prices far below the usual cost. He makes a specialty of selling stock

ALWAYS SAFE AND RELIABLE :: ASK YOUR FRIENDS

NO GUESSWORK IN A

CALDWELL TANK



One reason why our tanks do not leak, give no trouble, and need no watching, is, because every part is made

by experts who have had years of experience in this work.

WRITE FOR ILLUSTRATED CATALOGUE AND PRICE LIST.

W. E. CALDWELL CO.,

Tanks STEEL - WOOD **Towers**
GALVANIZED

WINDMILLS--GAS ENGINES--PUMPS

LOUISVILLE :: :: KENTUCKY

YOU CAN GET \$5 A DAY

1907 October 1907						
SUN	MON	TUE	WED	THU	FRI	SAT
			\$5	\$5	\$5	\$5
6	\$5	\$5	\$5	\$5	\$5	\$5
13	\$5	\$5	\$5	\$5	\$5	\$5
20	\$5	\$5	\$5	\$5	\$5	\$5
27	\$5	\$5	\$5	\$5	\$5	\$5

After a 2 to 3 months' course in the
**PLUMBING, BRICKLAYING
PLASTERING
OR ELECTRICAL TRADES**

We teach by Practical and Individual instruction given under actual working conditions, Trades That Pay and enable you to earn \$5 a day and over upon graduation.

Tools take the place of Books.

If you cannot attend school, we teach by mail giving Practical Instruction at your own home.

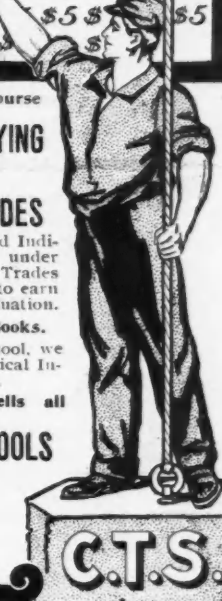
Our free catalogue tells all about it.

COYNE TRADE SCHOOLS

511 West 24th St.
NEW YORK

850 N Ashland Ave.
CHICAGO

240 Eighth St.
SAN FRANCISCO



STORE FRONTS

can be made more attractive—window displays more effective, and broken glass replaced without disturbing window trim by means of the



Patz Patent Store Front Construction

"Made in Detroit"

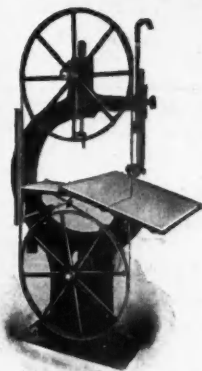


Write for our new book on "Metal Store Fronts." Gives practical hints on how to make window space valuable and shows full size illustrations of the Petz construction. **Sent Free.**

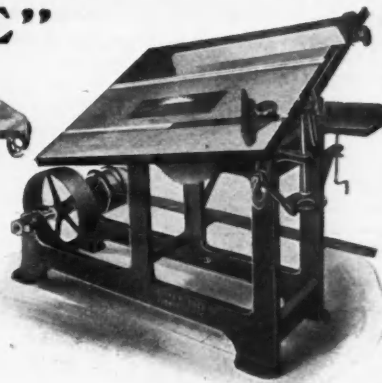
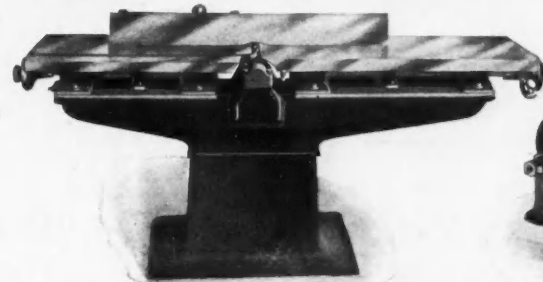
Detroit Show Case Co., 491 West Fort Street, Detroit, Mich.

Band Saws and Swing Saws Turning Lathes, Saw Tables and Jointers

THE "DEFIANCE"



Write us for our 1907 catalogue



THE SIDNEY TOOL COMPANY SIDNEY, OHIO U. S. A.

Classified Advertisements.

Advertisements under this heading will be inserted at the following rates.
 One month.....\$0.45 per line
 Three months.....1.25 per line
 Six months.....2.25 per line
 One year.....4.25 per line
 Count 10 words to the line. Situations wanted one-half above rates.
 Replies may be addressed in our care and will be promptly forwarded.

Help Wanted.

WANTED—Carpenters to read our ad. on page 6. Gage Tool Co.
 AGENTS WANTED for the O-K. Weatherstrip. Made of Aluminum Coated metal, it possesses the rigidity of steel and is guaranteed absolutely rust proof. Best door and window bottom strip on the market. Price is right. Satisfaction and money in handling it. Carpenters and contractors supplied. For full particulars, write The Introstile & Novelty Co., Marietta, Ohio.

Instruction.

LEARN CEMENT CONSTRUCTION in all its branches for \$1.50. Building Blocks Water Proof, white or any color. Bridges, Roof, Floors, etc. Write for descriptive circular No. 30. Cement Institute, St. Louis, Mo.

Furnaces

FURNACES \$5 NOW, \$10 more before shipment. Bal. AFTER approval Tools 50c. Save \$50. Book free. Century Furnace Co., box E., Youngstown, O.

House Plans.

IF INTENDING TO BUILD send 25c for catalog of inexpensive houses. Plans and Photos, with cost—\$900 to \$5,500. LATEST AND BEST IDEAS. Plans, \$1.00 up. The C. A. Eastman Co., Architects, Des Moines, Iowa.

Real Estate

SOUTHERN FARMS AND REAL ESTATE; mild winters; healthy climate; land \$2.00 per acre and upwards. J. C. Edwards & Son, Clarkesville, Ga.

Wood Working Machinery.

WOOD WORKING MACHINERY—Band Saws, Jig Saws, Planers Molders, Shapers, Wood Lathes, Rip and Cut-Off Saws, Engines, Bollers, Gas Engines. Above in both New and Second-Hand Rebuilt Machines. Send for Stock Sheet and Catalog. Hanna-Brackenridge Company, Box 463, Fort Wayne, Ind.

Patents.

C. L. PARKER, Solicitor of Patents, 20 Dietz Bldg. Washington, D. C. Handbook for inventors send free upon request.

A Fine Business Opportunity

FOR SALE In the best town in Southern California A PLANING MILL AND LUMBER YARD together or separate, with or without land. For cash or can arrange with responsible parties for two-thirds cash and balance on time. The mill is situated in an excellent location for all purposes, on one of the best adapted $\frac{1}{4}$ blocks in the town. Is well equipped with 20 or 30 new machines purchased 18 months ago. Also new 40 horse power electric motor. All well arranged by a practical man (the owner). The mill is full of work and has been since started. (Shavings and blocks find a ready sale at good prices.) An excellent opportunity for two or three practical mill men with little money. There are many mills, but this is one in a hundred and is your opportunity.

Reasons for selling—The owner has been compelled to be away nine months in the year to look after other business interests, and he finds it impossible to give any of his time to the business.

We will carry the business along in fine shape until purchaser takes possession.

ADDRESS: MILL, BOX 396, CINCINNATI, O.

Editor Wanted

An all round experienced man to act as editor for a new Construction Journal in Canada. Must be conversant with every branch of Building and Construction. An excellent position for a competent man. Address:

"Construction" H. Gagnier, Ltd., Publishers
 TORONTO, CANADA

plans in sets of five or more to builders and contractors and is meeting with great success. If at all interested in plans of any kind you will do well to note his ad. and the prices and either write now or file for future reference. His ad. appears on page 130.

A Flint-Coat Roofing Result

The good qualities of Flint-Coat Roofing, which is the product of the Rock Asphalt Roofing Co., 617 Y. M. C. A. building, Chicago, whose ad. appears on another page, is evidenced by the following letter sent the company by Marion M. Taylor, of Lake Andes, S. D., who says:

"I bought some of your Rock Asphalt Roofing last fall. I had one building covered with the best ——— roofing and others with various kinds of roofing. We had a very severe hail storm this summer which utterly destroyed all the roofing but yours, which came out as good as new without even one hole or crack. Such a test is a real test and speaks well for what stands the test. Yours truly,

"MARION M. TAYLOR."

Gasoline Engines Best Power

Thousands of contractors, carpenters and builders are using gasoline engines for power, either in their shops or for running hoists, mixers and cement machinery at various jobs they undertake. There is a big demand for engines of the smaller horse power. In this connection we desire to call our readers' attention to the advertisement of the Chapman Engine Works, Marcellus, Mich., on page 128. Their record as manufacturers of gasoline engines speaks for itself.

The Perry Lumber Reckoner

In another column will be found an advertisement of the Perry Lumber Reckoner, a very practical book which should be in the hands of every contractor and builder. The price is but \$1.00 and will save its cost every month. The book has been found so valuable that already four editions have been completely exhausted. Orders should be sent to Benjamin L. Jenks, 308 Euclid avenue, Cleveland, O.

Clothing Sent on Approval

Menter & Rosenbloom Co. are advertising men's suits and overcoats on the part payment plan in this paper. This firm is thoroughly reliable, being one of the largest clothing firms in the world. Their offer is a very liberal one, and they have such faith in the excellence of their clothing that they will send you a suit on approval and you don't have to pay a penny till you receive it and find it satisfactory; then all you are asked to pay is \$1.00 a week.

"The Miles" on the Pacific Coast

The P. B. Miles Company have made arrangements with Henshaw, Bulkeley & Co., of San Francisco, Cal., to handle the Miles Concrete Block Machine and look after their trade on the coast. They will carry in stock a number of machines at all times so as to be able to demonstrate to prospective buyers and also be in position to furnish machines on short notice.

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 DRAFTSMEN qualified; Architectural, Art Mechanical.
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ORNAMENTAL PRODUCTS CO., 552 West Fort Street, Detroit, Michigan.



All fastenings to brick, stone and masonry should be made with

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Pure Lead Paint

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Save 25 per cent by buying direct. We guarantee every gallon for a period of six years.

A Color Card of Forty Beautiful Shades Sent on Application. Also sole manufacturers of the celebrated **Egyptia Roof Paint**. Unexcelled for roofs, bridges, stacks, boiler fronts and metal of every description. A positive guarantee to protect metal for ten years.

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GROFF BROS., Props.

Established in 1876

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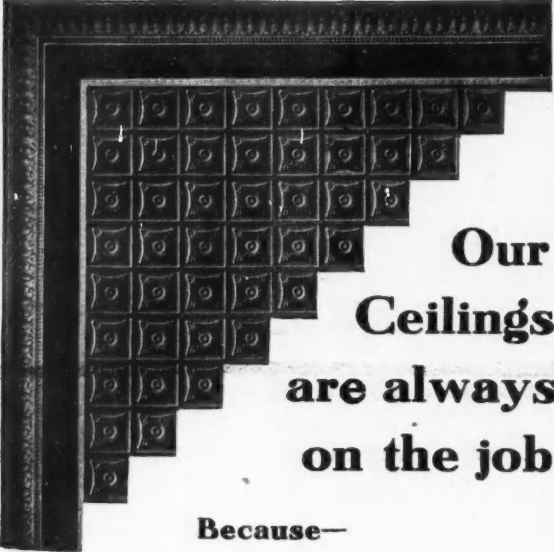
WE WISH to announce that the Fifth edition of *The Lightning Estimator* is now ready for delivery. The phenomenal sale and general endorsement of the preceding editions has spurred the author on to producing even a better book than the fourth edition, which many of our patrons have declared to be the standard work of its kind on the market. This new edition is one fourth larger, contains more illustrations, explanations and data on special work than the previous edition.

Estimating the cost safely and correctly is of the most vital importance toward the builder's success. No up-to-date builder can afford to be without a copy of this text book. The book teaches an easy, simple, rapid method of accurate and practical estimating, showing the actual cost of labor and material for each separate part of residence work, thus being easily adjusted to fit prices in any locality. Combines parts of the work, making fewer figures to handle, which of course lessens the risk of errors and omissions and saves an enormous amount of time usually spent in the ordinary course of estimating.

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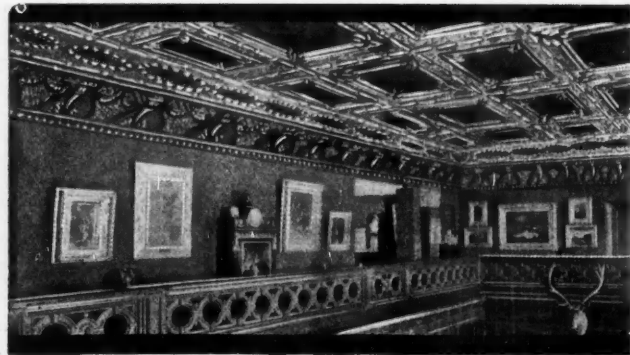


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Because—

They have the style and quality, and best of all, they will fit, and fit perfectly.
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 Send us plans with all measurements and we will prepare drawings of appropriate ceiling, without charge, and name you lump price on all material, F. O. B. your station. Get our catalogue right away.

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THE NEW CEILING AND SIDE WALL ON THAT ROOM

What shall it be? Steel, of course—because it is the most modern, sanitary and inexpensive, practically lasts forever.

Write to-day, giving dimensions and particulars. We will go into the matter with you thoroughly.



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Let us send you our catalogue "Metal Ceilings"

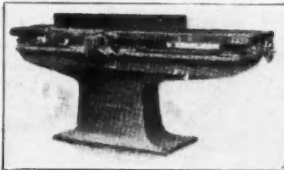
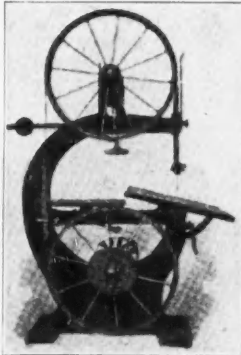
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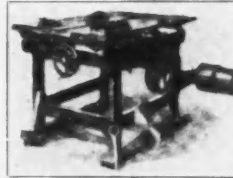


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For **CARPENTERS** and **CONTRACTORS**

These Four Machines with a Gasoline Engine or Motor make a Model Shop

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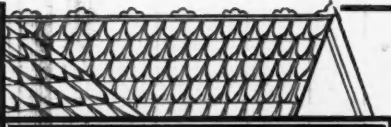
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What is more, it's the coming roofing. The public is just waking up to its advantages, and the carpenter is getting the benefit, for the laying of it requires someone handy with hammer and nail. Don't wait until it is too late, get in touch with us before someone else is given your territory.

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of a metal ceiling that makes it cheap. The cost of a ceiling is not complete until the work is accepted by the architect or owner. If the plates do not fit, your expense may be enormous. Better be

on the safe side and get "Canton" Metal Ceilings. We have a reputation for good work.

Our book "Art in Metal Ceilings" free.

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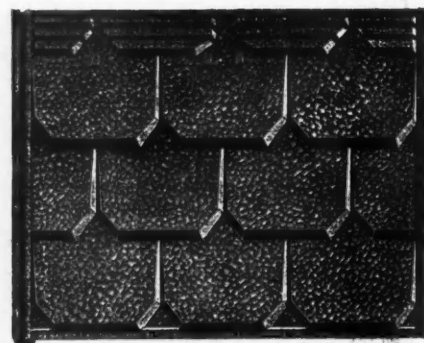


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For roofing all buildings with one-quarter pitch or more.

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They reduce the fire risk, and cost of insurance. Superior and cheaper than wood shingles. Any good carpenter or mechanic can lay our shingles.

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The roofing with a reputation has been used for more than 20 years, and still in good condition. Will last a life time.

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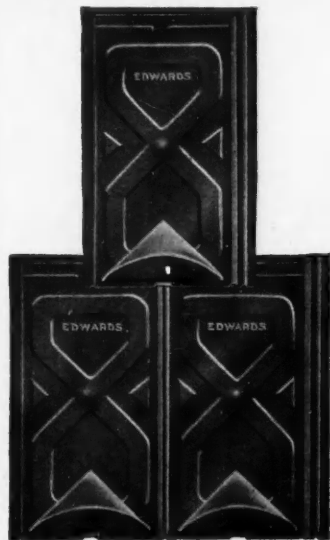


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Rain proof Durable **WALTER'S SHINGLES** Jersey City N.J. **WALTER'S TILES** Rust proof Ornamental
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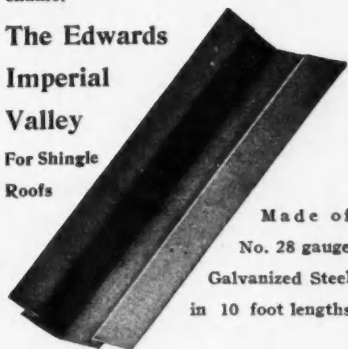
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Made in sizes 7x10, 10x14, 14x20 inches

The Edwards Metal Shingles and Metal Slate are made of the best quality Worcester Grade Terne Plate furnished either painted or galvanized (galvanized after being formed). They can be applied without soldering, the use of special tools and by an ordinary mechanic.

The Edwards Imperial Valley

For Shingle Roofs



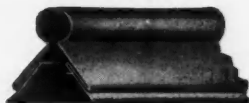
Made of No. 28 gauge Galvanized Steel in 10 foot lengths



Illustration showing application of

The Edwards Metal Slate, The Edwards Perfect Hip Shingles, The Edwards Imperial Valley, The Edwards Queen Anne Comb Cresting, The Edwards Hercules Deck Cresting

THE EDWARDS "IMPERIAL" RIDGE ROLL



The Edwards "Imperial" Ridge Roll For Shingle Roofs

Made of Best Quality Galvanized Steel in 10 Foot Lengths only. Makes a Neat Waterproof Cap for the Ridge of Roofs.

Made from one piece of Metal, folded as shown, the shingles being inserted into the folds over the nailing flanges, thus protecting the nail heads from the weather.

CORRUGATED IRON and STEEL ROOFING.

GALVANIZED OR PAINTED.

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Made in Tin, Galvanized Iron and Copper.

Size 4 x 9 inches

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Packed 100 in a box ready for shipping.

Acknowledged the very best hip covering that can be used—far superior to the ordinary wood or metal rolls and the work of laying considerably less.

Can be applied to Metal Shingle, Wood Shingle or Slate Roofs.

THE EDWARDS ROOF GUTTERS

Made of best quality Galvanized Steel. In 10 foot lengths only. NO WOOD SUPPORTS NEEDED



Style A

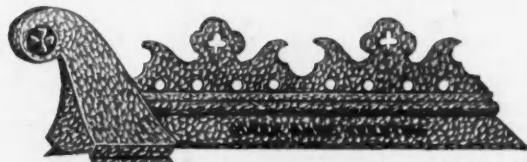
Made in 14, 20, 24 inch Girt, 1/2 inch Bead.

Illustration shows style A as applied to roof in connection with the Edwards Metal Slate.

The Perfect Roof Covering

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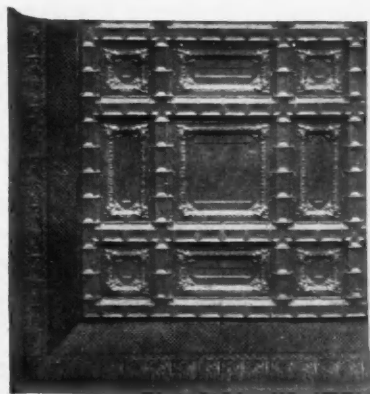


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¶ By using Stewart's Iron Fence you can make more money for yourself, and please your customer.

¶ Send for Catalog No. 120-F to-day.

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LET IN THE DAYLIGHT
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 HANDSOMEST
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ANYONE
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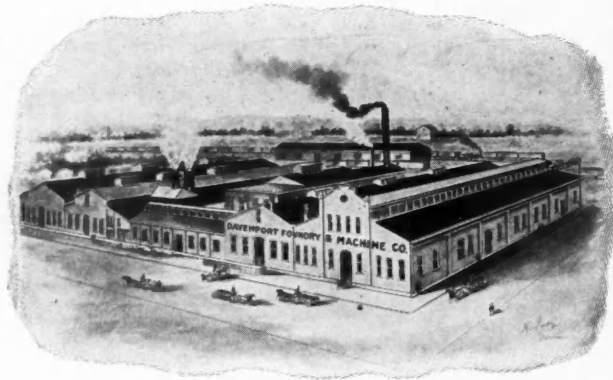
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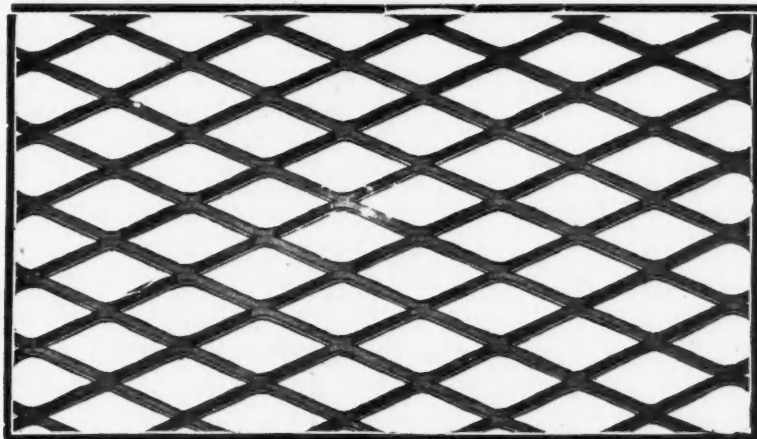
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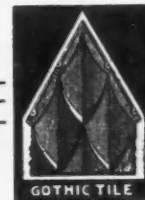
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Beautify
Your Home

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Polygon Pipe
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all conductors in

Beauty, Strength and
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"Apollo Best Bloom" Galvanized Sheets

last anywhere. They're made to give protection, not to seek it. Every metal worker knows what the red "APOLLO" stands for, and if he has his way, no other brand will be used.

Don't give first cost too much thought, for Apollo Sheets are reasonable in price, and when trueness to gauge, superiority of material, easy working qualities and long life are considered, they are the only ones which should be used.

Send for our Apollo Weight Card. Every metal worker has use for it.

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COMPANY,**

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to take up Slate Roofing
in unoccupied territory
everywhere. Only a few,
inexpensive tools needed.
Slating easy to learn.

SEA GREEN AND PURPLE SLATE ROOFS

outlast any building. They won't wear out, rust or decay. Are fire-proof. Afford clean cistern water and don't require constant repairs and attention. A profitable, growing Slate Roofing business can be established anywhere. Besides new work, there are hundreds of wornout tin, shingle, metal and composition roofs to be replaced. Your neighbors are tired of paying out good money for short-lived roofings. Furnish them with handsome, sanitary, fire proof "Never-wear-out" Slate Roofs.

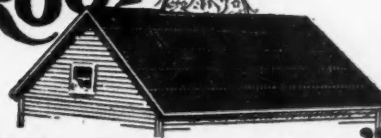
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This proposition only applies to territories not now covered by a Slate Roofer.

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MONEY IN
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ROOF**



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long ago won for itself the
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Realizing the value of this reputation, we have always endeavored to maintain it, not only by keeping strictly up to the original high standard, but by constantly striving to improve it in every possible way

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**YOU WILL
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**Every Roll
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This roofing has a heavy burlap insertion

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But the only material which keeps them out entirely is LINOFEELT.

LINOFEELT is a scientific non-conductor of heat, cold and sound, a blanket of flax fibres (unbleached linen threads) applied inside or outside the building.

We have in use today over half a billion square feet—we can not make it fast enough.

Every builder can learn about it from our booklet, sent on request, and he needs to learn, for he may have to put it up any day.

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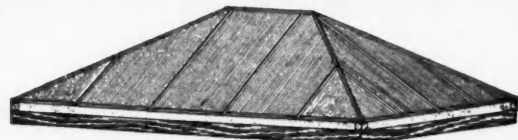
KNOCKED DOWN SKYLIGHTS

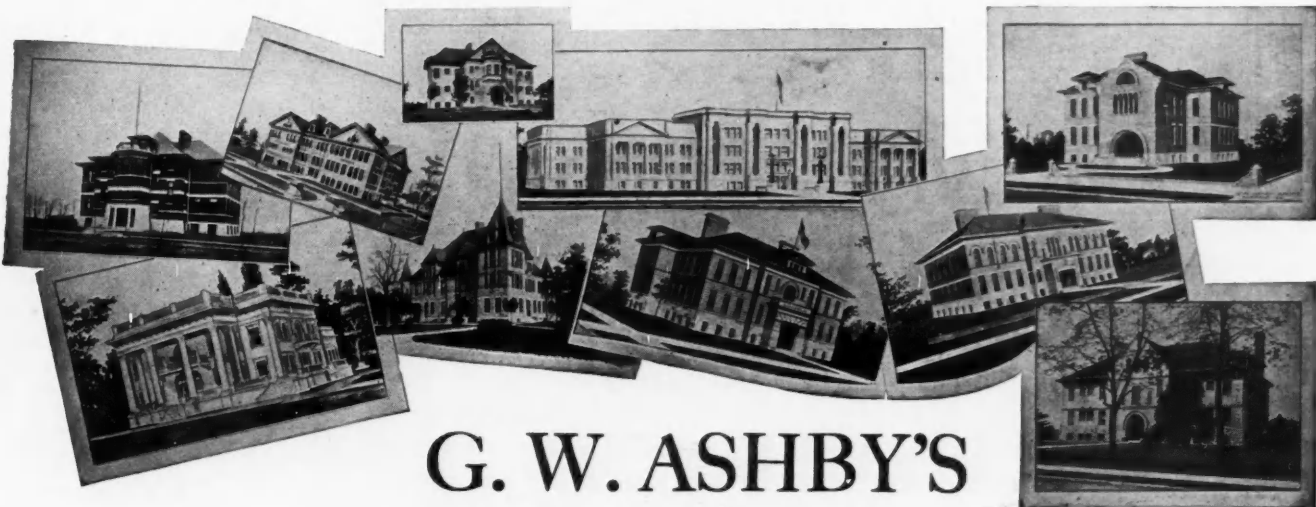
Can be shipped anywhere safely at a low freight rate. Can be set up by any handy man, no soldering, no putty and no leaks. CATALOG FOR THE ASKING.

GALESBURG CORNICE WORKS,

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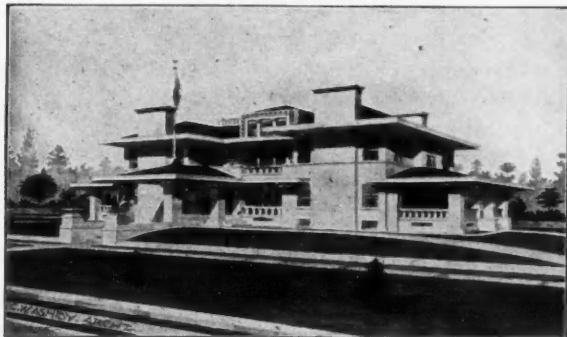
G. W. ASHBY'S

Plans and Specifications

are up-to-date, practical and include all small details that are necessary for the entire construction and all the finishing touches that complete the building

WRITE US FOR PRICES
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IDEAS AND REQUIREMENTS

The special attention given to the designing of school houses and the satisfaction given to all *School Boards* we have done work for has made us the largest *School House Architects* in the country and enables us to furnish plans and specifications for all kinds of school buildings at a very low price.

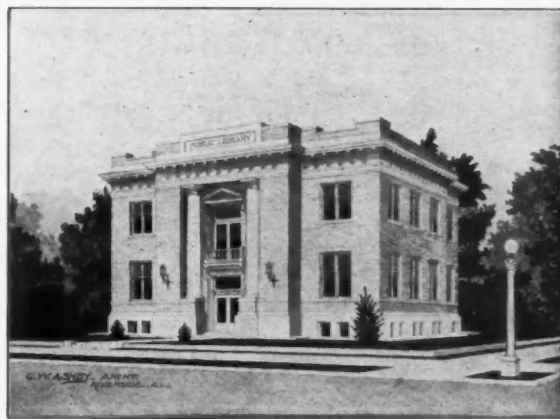


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Will be sent **FREE OF COST** to members of school boards and parties interested in the erection of a school or public building for which plans have not yet been procured.

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We design all classes of residences from the large city mansion to the smallest cottage and with our up-to-date system of handling this class of work by none but expert designers, we can not only give you the best of service but also quote prices that you will find extremely low.

We develop your own ideas into a practical set of plans and specifications with which they can be executed to the smallest details into a home that can be built within your means and to your entire satisfaction.

G. W. ASHBY ... ARCHITECT
Eleventh Floor, Medinah Building, CHICAGO

IF YOU BUILD HOUSES

GET POSTED ON CEMENT, THE MARVELOUS TWENTIETH CENTURY BUILDING MATERIAL. BE ABLE TO FIGURE ON CONCRETE BLOCK OR CEMENT BRICK STRUCTURES. READ THE



Best, Largest and Most Practical Cement Paper

Carpenters and Builders Should Know All About Cement.

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Residences, School Houses, Churches, Stores,
Public Buildings, Factories or Farm Buildings.

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Gentlemen:

Enclosed find \$1.00 for one year's subscription to CEMENT WORLD, beginning with the number.

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Reinforced Concrete Pipe

For Sewers, Conduits, Railroad Culverts and Water
Pipe It Has No Equal

ENDORSED BY ALL LEADING ENGINEERS

Write for Illustrated Catalogue



Forty-eight inch Reinforced Concrete Pipe used in the Baltimore Sewerage System, now in course of construction at Baltimore, Maryland.

W. C. CROZER, City Engineer
Knoxville, Tenn.

Knoxville, Tenn., July 15, 1907.

The Reinforced Concrete Pipe Co.,
Jackson, Mich.

Gentlemen:—In reply to your letter asking my opinion of the 36-inch Reinforced Concrete Pipe laid in sewers of Knoxville last summer, I will say it has proven a perfect success in every way and I regard it the best pipe I have ever seen for such work, and shall continue to use it in any future work. I take pleasure in giving this testimonial as to its merits. Respectfully, W. C. Crozer, City Engineer.

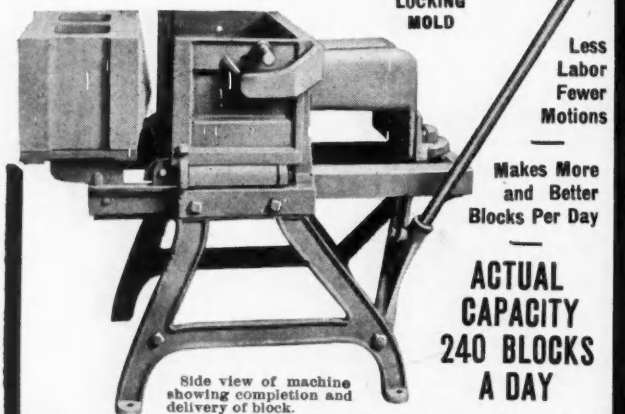
MANUFACTURED ONLY BY

Reinforced Concrete Pipe Co., Jackson, Mich.

For All Territory West of the Rocky Mountains, Address the
REINFORCED CONCRETE PIPE CO., 625 Citizens' National Bank Building, LOS ANGELES, CALIFORNIA

THE Brandell CONCRETE BLOCK MACHINE

The Machine with the SELF LOCKING MOLD



Less Labor Fewer Motions

Makes More and Better Blocks Per Day

ACTUAL CAPACITY 240 BLOCKS A DAY

Side view of machine showing completion and delivery of block.

On account of its Self-Locking Mold which is patented and not found in any other machine, the BRANDELL is the fastest operating and most labor saving concrete block machine on the market. After filling and tamping a saving of 20 to 30 per cent is made in the labor required to discharge the block and prepare the machine ready to mold the next block. The Self-Locking Mold accomplishes this. This saving will make a Brandell pay for itself in a short time. All blocks are made face down on the Brandell, by which a clear sharp impression of the face is obtained and a natural looking stone free from defects is produced. Let us tell you about all the other good points of the Brandell. Send for free catalog.

BRANDELL CONCRETE BLOCK MACHINE CO.
Dearborn & Madison Sts. CHICAGO, ILL., U. S. A.

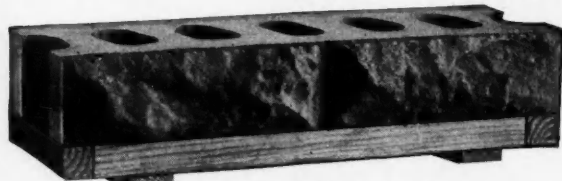
The U. S. Standard CEMENT BLOCK MACHINE

and the U. S. STANDARD CONCRETE MIXER



A pile of sand, some cement, and a little common sense. This is all that is needed to produce the most artistic, the most durable and the least expensive material with which to build the finest residence on the avenue, or the best warehouse, factory or barn. If interested, don't fail to write for our descriptive Catalogue "A."

Latest Model with Veneer Attachment



4" X 8" X 24" ROCK FACE IN 12" & 12" SECTIONS

Manufactured by **The Ashland Steel Range & Mfg. Co.**
Ashland, Ohio

ATTENTION! CONCRETE BLOCK MAKERS!

"The Miles" Improved Concrete Block Machine

The original face down machine

Makes Friends and Keeps Them

Uncle Sam specifies it. The Best and Cheapest Machine on the market. Get full particulars from

The P. B. Miles Mfg. Co.

109 W. Cortland St. Jackson, Michigan



Thunder and Lightning

Get out of the rain and buy Lightning Block Machine that defies all competition. Has wonderful capacity.

Write and Do It Now

D. F. DETRICK
No. 8 S. Canal St. DAYTON, OHIO



Cement Machinery Mfg. Co.

COLUMBUS, OHIO



Manufacturers under the original and fundamental patents of H. S. Palmer Winget Sanderson, McDowell and a number of others.

The best of everything in the Cement Moulding and Mixing Machinery and Tools.

WE HAVE THE LARGEST WAREHOUSES AND DEMONSTRATING PLANT IN THE WORLD. We have 40 different kinds of Cement Working Machines ready to show in practical operation.

In our large assortment we have the best Block Machines in both Face-down and Side-face that can be bought. Our Continuous Mixers and Batch Mixers cannot be equaled in results and price. OUR OFFER—We pay railroad fares that you may see any or all of these machines in operation before deciding what you want. If we cannot satisfy you we have the best, we still pay your fares.

DO NOT FAIL TO SEND FOR OUR DESCRIPTIVE CATALOG.

Front and Maple Streets

COLUMBUS, OHIO, U. S. A.

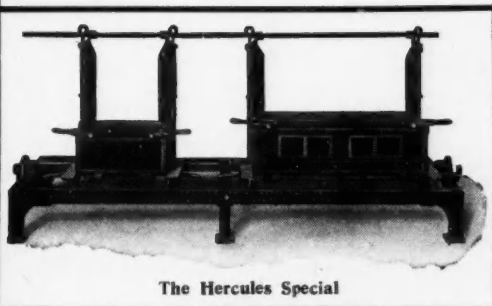
Concrete Buildings

WE MAKE THE
Hercules Concrete Block Machine
 IN TWO SIZES

The Hercules Regular will make blocks from two inches up to six feet. It will make water tables, steps, window sills, lintels, etc., and make them as they should be made—as solid as the rock of Gibraltar.



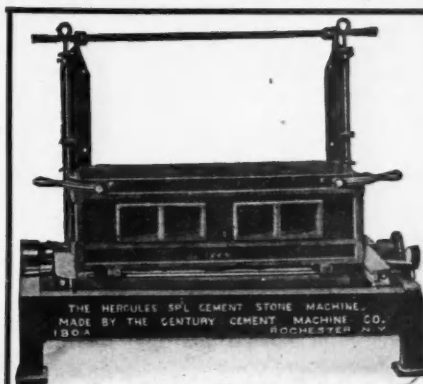
Made on Hercules



The Hercules Special

The Hercules Special is a smaller machine than the Hercules Regular, but it is built on exactly the same lines and its mechanical action is identical with the large machine. The Hercules Special will make just as good blocks—as the Hercules Regular, but it will not make as large a block. That's the only difference.

The Hercules Special with complete outfit for building houses, manufacturing establishments or any buildings, costs only \$120.00.



Hercules Special

The Hercules Machines are making the blocks that are going into the finest concrete buildings in the world. We will be glad to send our Catalogue to any reader of this paper upon request.

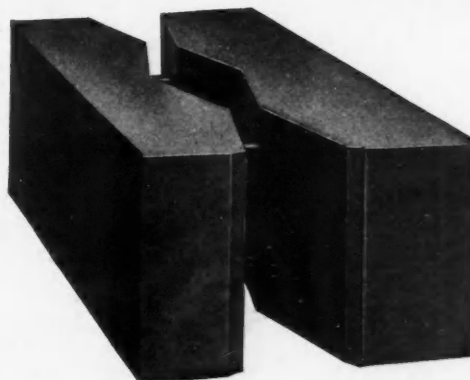
Century Cement Machine Co., 273 West Main Street, ROCHESTER, N. Y.

THE CELEBRATED "National" Block Machine IS A WONDER

- DO YOU WANT the greatest value for your money?
 - DO YOU WANT the block machine that will give you a pride in your work—and bring you more work?
 - DO YOU WANT the simplest face down block machine on Earth made on scientific principles?
 - DO YOU WANT the block machine with the fewest parts with nothing that can get out of order?
 - DO YOU WANT the block machine that can make all sizes of blocks on the one pallet board?
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 - DO YOU WANT the block machine that produces the best work, that is a constant advertisement for your business?
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 - DO YOU WANT the block machine that will last a life time?
 - DO YOU WANT the only block machine that, judged by its product, is the best?
- If you want all these you must have a 'NATIONAL.'

National Cement Machine Company,
 BAY CITY, MICHIGAN
 Woodruff Bros., Old Forge, N. Y., Agents for New York State.

ANCHOR CONCRETE STONE MACHINES Make This Continuous Air-Space Block



TWO SLABS OF CONCRETE TIED TOGETHER with four one-quarter inch galvanised iron rods firmly imbedded in the block in its construction. Blocks lay in the wall 8 in. high, 24 in. long, 8 to 16 in. wide.

Easy to Make Easy to Lay Look Fine
 Very Strong Frost Proof Moisture Proof

Capacity of Machine:
300 PERFECT BLOCKS PER DAY

Write for Special Low Prices and Catalog of Machines

ANCHOR CONCRETE STONE COMPANY
 ROCK RAPIDS : : : : IOWA

Wet Process Concrete Blocks

By the Pettyjohn System

The manufacturing of Concrete Blocks is rapidly nearing perfection, but the up-to-date manufacturer must use modern machinery and employ improved methods. Three features are important in perfect block making:

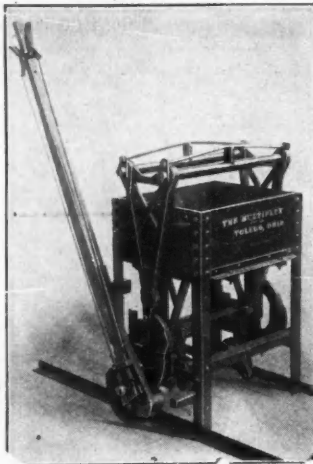
WET PROCESS FACE DOWN DAMP CURING

These splendid features are combined in the new Pettyjohn Invincible Machine, and no other. Made in three lengths, 16-inch, 24-inch and 40-inch. Tandem Invincible makes two blocks at once. Price \$65 and up. Single Invincibles, \$35 and up. Sold on trial always, guaranteed to give satisfaction or money refunded.

With our **TRIPLE TIER RACKING SYSTEM** green blocks can be stacked three high direct from machine with inexpensive home-made rigging. This economizes space, reduces off-bearing distance, and above all insures slow, even, damp, perfect curing and bleaching. Plans and blue prints free to customers.

Send for our latest edition of "Stone Making" (just published), a book of valuable data for the block maker—FREE.

THE PETTYJOHN COMPANY, - - - - 634 No. Sixth St., Terre Haute, Ind.



The Most Rapid Block Making Machine in the World

THE "MULTIPLEX"

Hand Lever Press

Making 2,000 Blocks, 8" x 20" per day under a pressure of over 10,000 pounds. Makes both kinds of the Two Piece Walls.

The Two Solid Walls with continuous Air Space between and the Two Piece Header Bond System. Both systems—**Absolutely Damp Proof**—with the material mixed **One Man** has made 128 blocks 4" x 8" x 20" in **One Hour** and placed them on rack 20 feet from the machine, and he can do it again. Makes 4", 6" and 8" face blocks, all lengths up to 20 inches.

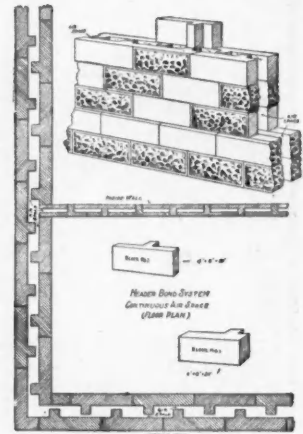
USES DRY, WET, or SEMI-WET MATERIAL

Any design or shape of block made at operator's will. Makes the only ventilating **Flue Block** on the market.

Send for catalog describing Our Steel Cement Block Machines, which are creating a Revolution in Block Making.

The Multiplex Concrete Machine Co.

DEPT. E Toledo, Ohio, U. S. A.



DUNN'S MASONS' and BLOCK MACHINE
BUILDERS'

In use in all parts of the world. Satisfaction universal.

Blocks made face down and side face. Every block perfect with true sharp corners.

PRICE \$40.00

Makes blocks in widths of 8, 10 and 12 inches, and in lengths up to 20 inches, and in a variety of designs. No expensive iron pallets required. A practical, rapid and economical machine. No machine at any price will give you better satisfaction.

Write for catalog today

W. E. DUNN & CO., 339 Grand Avenue, CHICAGO, ILL.

The Beavers Fast Building Machine

The outfit includes twenty-four different molds, each ranging in length from 10 to 24 inches and 8 inches wide. We have 30 other molds in stock. We have the facilities or casting any design you desire. Write us your wants. We will gladly give you any information about our machine or the concrete business in general.

This machine has a capacity of 900 blocks per day.

Olson & Richardson
Stoughton, Wis., U. S. A.

THE HAYDEN AUTOMATIC BLOCK MACHINE CO.

Manufacturers of High Grade 112 W. Broad St., Columbus, Ohio

CONCRETE BLOCK MACHINES, MIXERS, STONE CRUSHERS, ETC.

The Most Simple and Effective Mechanical Principles Embodied in this Mixer

POINTS OF SUPERIORITY IN THE HAYDEN MACHINE

Great Strength ... Limitless Range ... Rapidity
Ease of Operation ... Simplicity of Construction

The only Block Machine on the market strong enough to withstand the heavy strain of pneumatic tamping

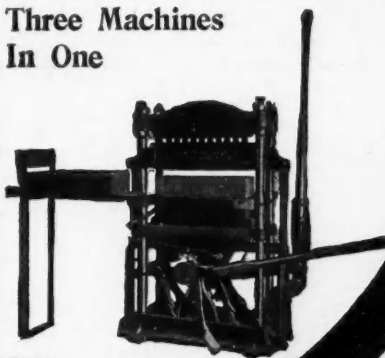
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The Hayden Down Face Machine.

The Hayden Improved Mixer.
Eastern and Foreign Sales Agent
H. W. Remington
19 South St., New York City

Three Machines
In One



THE
HELM
PRESS

3 Profitable Products

from one machine with a market place in every locality and they overcome every point or prejudice that might be raised against other forms of concrete.

PRESSED CEMENT BRICK

Cheaper made than the tamped, bring better prices and more business and compete with lowest to highest grades of repressed clay. Nothing finer produced for business fronts, residences and churches than this face brick, plain, colored or ornamental.

TWO PIECE BLOCKS

made on this machine overcome the disadvantages of other blocks while retaining that valuable feature of the face down block, viz., using a richer or finer facing. A guaranteed dry wall, disposing of furring and lathing, consequently specified by the architect and desired by the home builder. A reproduction of cut stone faces, distinctive and pleasing in appearance.

VENEER BLOCKS

A form of construction fast coming into large demand not only for new buildings but repairing and improving old structures, which appear like new cement buildings. Often used as sidewalk and floor tile, for partitions and numerous other purposes, taking any face from plain to a pebble dash.

A HIGH SPEED PRESSURE MACHINE

Producing these products with the lowest labor cost and requiring the least cement. It means something to save half a barrel of cement and half the labor usually required in 1,000 brick or 100 blocks. Ask for catalog "A-6."

FACE DOWN BLOCK MACHINES AND MIXERS

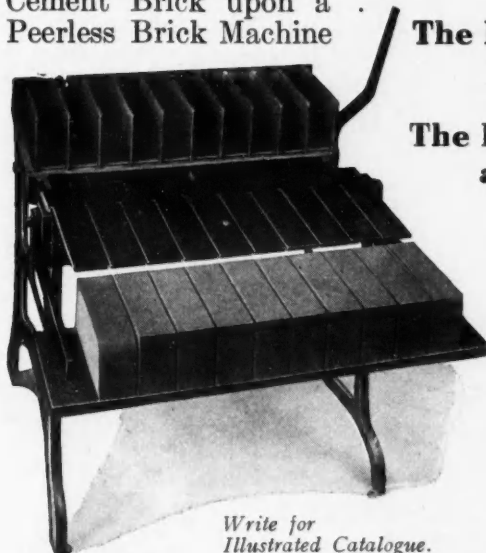
Our "Automatic" Face Down Machine sells for \$80.00 and up. Our Continuous Mixers for \$150.00 and up. They settle the speed and quality question.

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CONCRETE
MACHINERY
FOR
BRICK
AND
BLOCK
PLANTS

Make Money

As others have already done it, by making Cement Brick upon a Peerless Brick Machine



Write for
Illustrated Catalogue.

The Price
is Right

The Brick
are Right

Peerless Brick
Machine
1907 Model
Pat'd No. 8115181

The people who use the "Peerless" know its profit making qualities.

We will send you a list of the concerns who have already made money by doing business with us, if you wish.

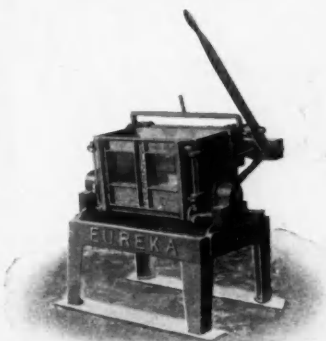
More Peerless Machines now in use producing a profit to the owners than all others combined

Peerless Brick Machine Co.,

11 N. 6th Street,

MINNEAPOLIS, MINN.

If You Want Big Profits



You must investigate the **Eureka Face Down Cement Block Machine** the only face down machine—that withdraws the cores vertically and automatically by one pull of the lever, permitting of use of one core in

16 inch blocks—the use of a very wet mixture—and absolutely prevents sagging and breaking of blocks.

A Perfect Block—since none sag or break.

A Stronger Block—made of wetter mixture.

A Cheaper Block—water costs less than cement and the automatic features of the Eureka No. 2 give a greater capacity than on any other face-down machine.

We make any kind of a machine—any article that the concrete worker can possibly need.

The Automatic Tamper Tile Machine and the **Eureka Sewer Tile Molds** make perfect cement drain and sewer tile very rapidly at a very low cost.

Send for free catalogs. Our big instruction book and catalog gives complete instructions for making any kind of cement products—and lists the most complete line of cement machinery ever put upon the market. Price 25 cents, worth many times its price to the cement worker.

BESSER MFG. CO.

Makers of the most complete labor-saving line of concrete machinery upon the market.

312 Second St.

ALPENA, MICH.

"WE WISH TO STATE THIS IS THE FIRST OF ALL MACHINERY WE HAVE INSTALLED THAT HAS COME UP TO ITS ADVERTISING"



THE KNICKERBOCKER CO.
Jackson, Michigan,

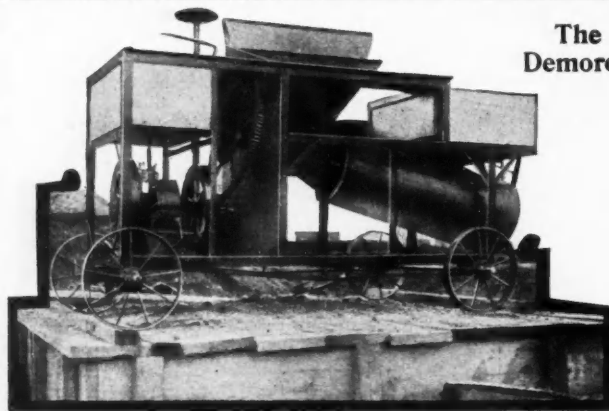
CORPUS CHRISTI, TEXAS, Sept. 5, 1907.

Gentlemen:

The No. 6 Mixer was unloaded from the car last Tuesday at 11 o'clock, at 1 o'clock of the same day we started same without difficulty and it perfectly mixed material as fast as two good men could shovel it. We have given the machine almost constant use since its arrival, and on different material and different proportions, ranging from finest sand to the coarsest gravel, and in every case we have been more than pleased with the results.

We wish to state that this is the first of all machinery we have installed that has come up to its advertising.

Yours truly,
RING AND POWELL.



The Demorest **Little Giant Mixer**

automatically proportions—mixes dry, then wets. Product approved by engineers. Capacity greater than any Mixer costing twice its price. Easily portable. One customer claims \$15.00 per day saving over one of the best known Batch Mixers.

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BALLOU MANUFACTURING Co.,
50 High Street : : BELDING, MICH.

Koll's Patent Lock Joint Columns

Are quick and ready sellers in all parts of the country because they are

Mechanically Perfect

Architecturally Perfect

Weatherproof and very durable

Perfectly satisfactory in every way

Made in all sizes and for every conceivable use. Our pilasters, pedestals, railings, balusters, cornices and general porch work represent the very highest grade of workmanship and materials. We have an illustrated catalog that will tell you all about our products. Write for it to-day. It's free.

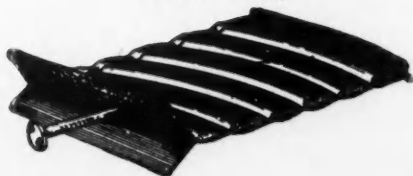
HENRY SANDERS CO.
940-1040 Elston Avenue, : CHICAGO
Eastern Office, 1123 Broadway, N. Y.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

CONCRETE CONSTRUCTION IS INCOMPLETE

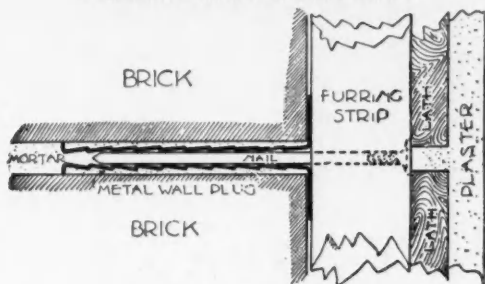
WITHOUT OUR



RUTTY METAL WALL PLUGS

They are laid instantly, are indestructible, yet cost less than any other method. Previous difficulties of securing interior finish are entirely overcome by the use of the Ruddy Plug.

WE MAKE ALSO MORSE STEEL WALL TIES AND PRESCOTT STEEL CORNER BEADS



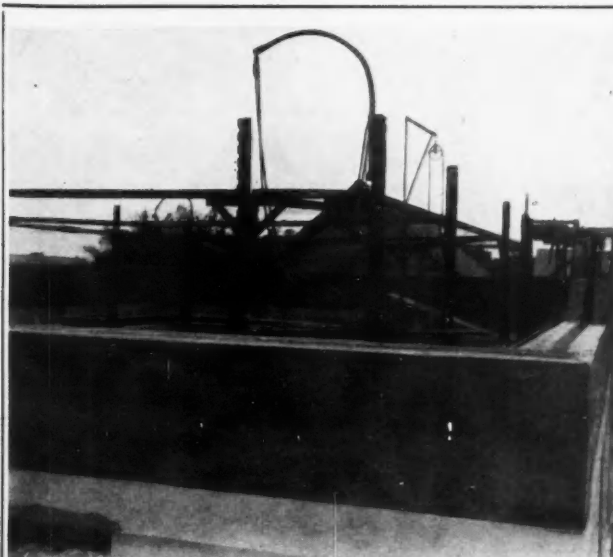
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J. B. PRESCOTT & SON

Foundry Ave.

Webster, Mass.



Have you found it expensive?

to erect and take down wooden scaffolds? Are you tired of wooden forms? In moving Cement Blocks to where you build how many have been spoiled by chipping and breaking? Where the ends come together or bonds connect it is a solid wall the same as the ordinary Form Methods, and were you ever troubled with frost and dampness?

Solve the problem. Secure our Moulding Apparatus and build a Monolithic reinforced hollow wall. You then eliminate all useless expense, waste of material and climatic changes have no effect upon your work.

Machines and Territory for sale. Secure it now.

HOLLOW WALL MACHINE COMPANY
PETOSKEY, MICHIGAN

ACME CEMENT BLOCK MACHINE

Just the machine for any contractor or builder. Equals Any Machine Made. Makes the block Face Down. Any size block from 8" x 8" x 16" to 12" x 12" x 24" can be made on the same machine with the substitution of plates. Has a capacity of 200 blocks per day and over. Simple in construction and operation, constructed throughout of the best cast iron. Price for size 8" x 8" x 16".

\$35.00 Complete Outfit

5% discount allowed when cash accompanies order. Larger sizes five and ten dollars additional.

The machine is strong, durable and guaranteed, sent on 10 days trial. Write today for circular.

F. J. COLGAN, Haverstraw, N.Y.

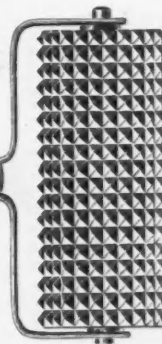
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W. H. ANDERSON TOOL & SUPPLY COMPANY

14 and 16 Macomb Street
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Contractors Make Their Own Cement Blocks

-for-

FOUNDATIONS, RANGE WALLS, RETAINING WALLS, CHIMNEYS

and all other ordinary purposes, at low cost for equipment and at small cost of manufacture, by using a new line of

THE SIMPSON MOLDS

Write for Full Particulars, Prices, etc., to

THE SIMPSON CEMENT MOLD CO.
498 N. High Street, COLUMBUS, OHIO

"WE WISH TO STATE THIS IS THE FIRST OF ALL MACHINERY WE HAVE INSTALLED THAT HAS COME UP TO ITS ADVERTISING"



THE KNICKERBOCKER CO.
Jackson, Michigan.

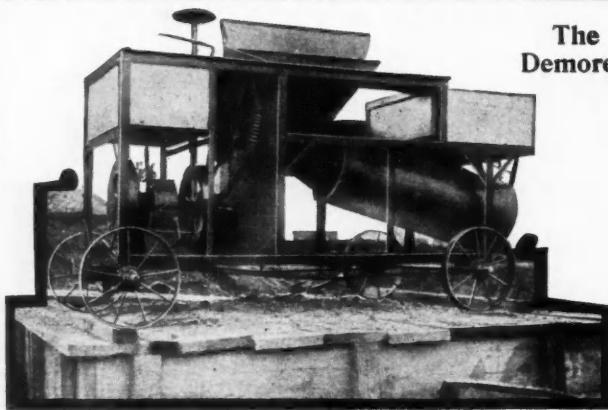
CORPUS CHRISTI, TEXAS, Sept. 5, 1907.

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Yours truly,
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The
Demorest

Little Giant Mixer

automatically proportions—mixes dry, then wets. Product approved by engineers. Capacity greater than any Mixer costing twice its price. Easily portable. One customer claims \$15.00 per day saving over one of the best known Batch Mixers.

Send for Booklet "a"

BALLOU MANUFACTURING Co.,
50 High Street : : BELDING, MICH.

Koll's Patent Lock Joint Columns

Are quick and ready sellers in all parts of the country because they are

Mechanically Perfect

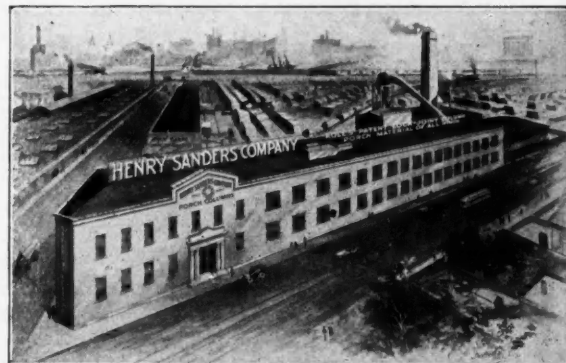
Architecturally Perfect

Weatherproof and very durable

Perfectly satisfactory in every way

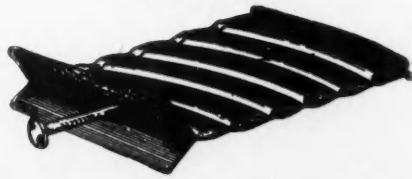
Made in all sizes and for every conceivable use. Our pilasters, pedestals, railings, balusters, cornices and general porch work represent the very highest grade of workmanship and materials. We have an illustrated catalog that will tell you all about our products. Write for it to-day. It's free.

HENRY SANDERS CO.
940-1040 Elston Avenue, : CHICAGO
Eastern Office, 1123 Broadway, N. Y.



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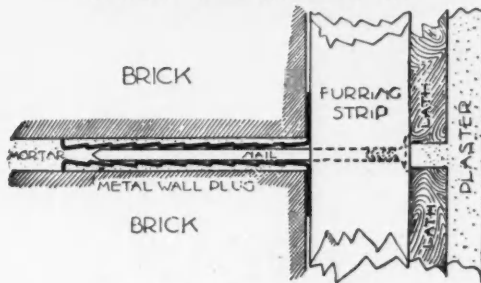
WITHOUT OUR



RUTTY METAL WALL PLUGS

They are laid instantly, are indestructible, yet cost less than any other method. Previous difficulties of securing interior finish are entirely overcome by the use of the RUTTY Plug.

WE MAKE ALSO MORSE STEEL WALL TIES AND PRESCOTT STEEL CORNER BEADS



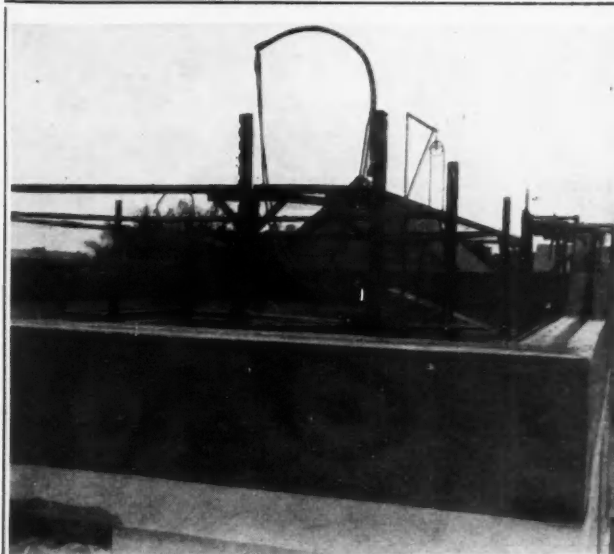
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SEND FOR SAMPLES AND CATALOG

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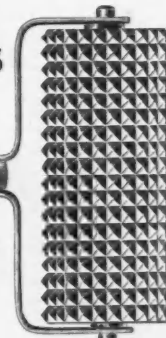
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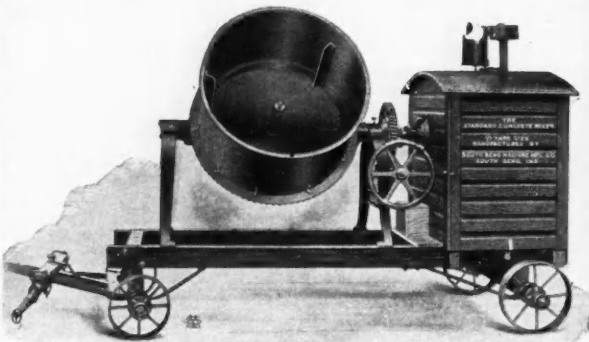
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"STANDARD" Portable Mixer and Engine

No. 1 Mixer for hand or power. Batch capacity 2 cubic feet; daily capacity 15 to 20 cubic yards; weight, 500 pounds.

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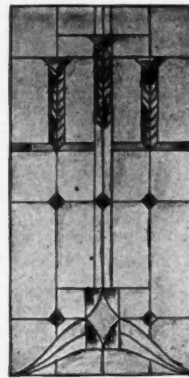
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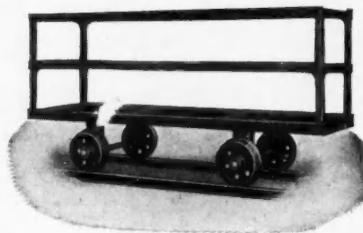
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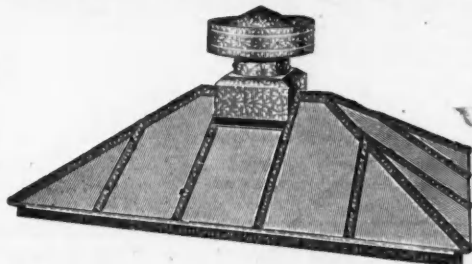
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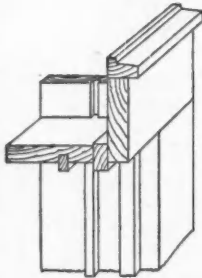
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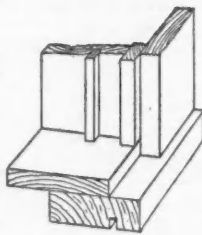


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Pulley Stile,	$\frac{7}{8} \times 4 \frac{7}{8}$	} Poplar, Yellow Pine or Cypress
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Opening 2 feet 5 inch wide,
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smaller, each, \$1.45



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With $\frac{1}{4}$ inch Outside Casing 10
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Size $2 \frac{3}{4} \times 4 \times 8 \frac{1}{4}$ "

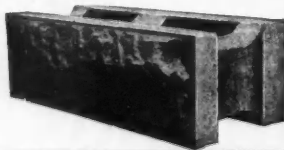
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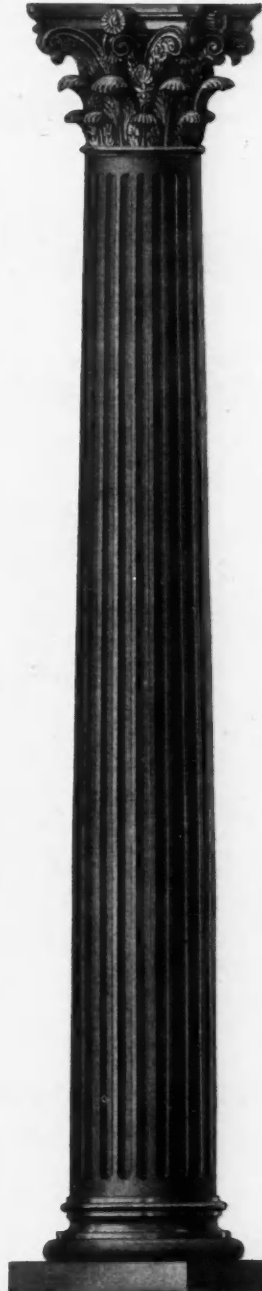
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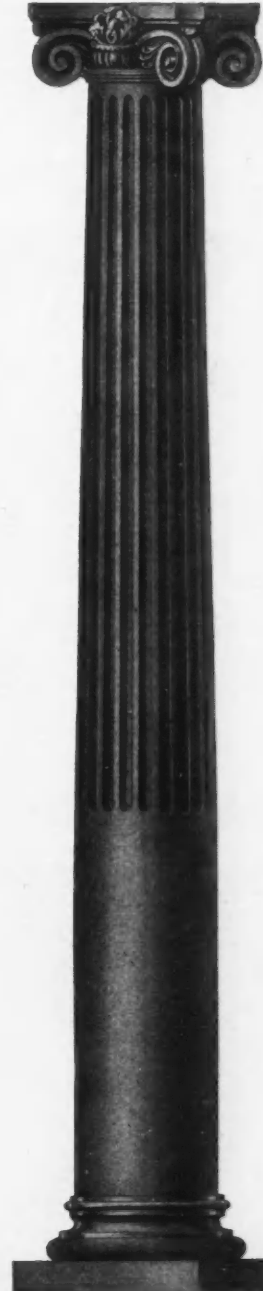
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F.-M. 1906
Sublime

IMPERIAL

Clear White Pine, 1 1/4 in. stave lock-joint, heavy base, tempered compo cap, one-half fluted shaft.

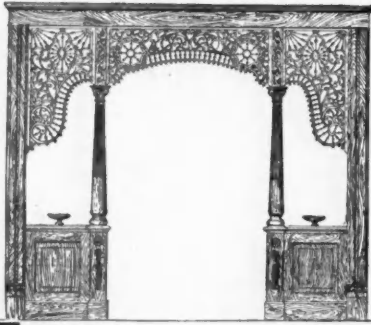


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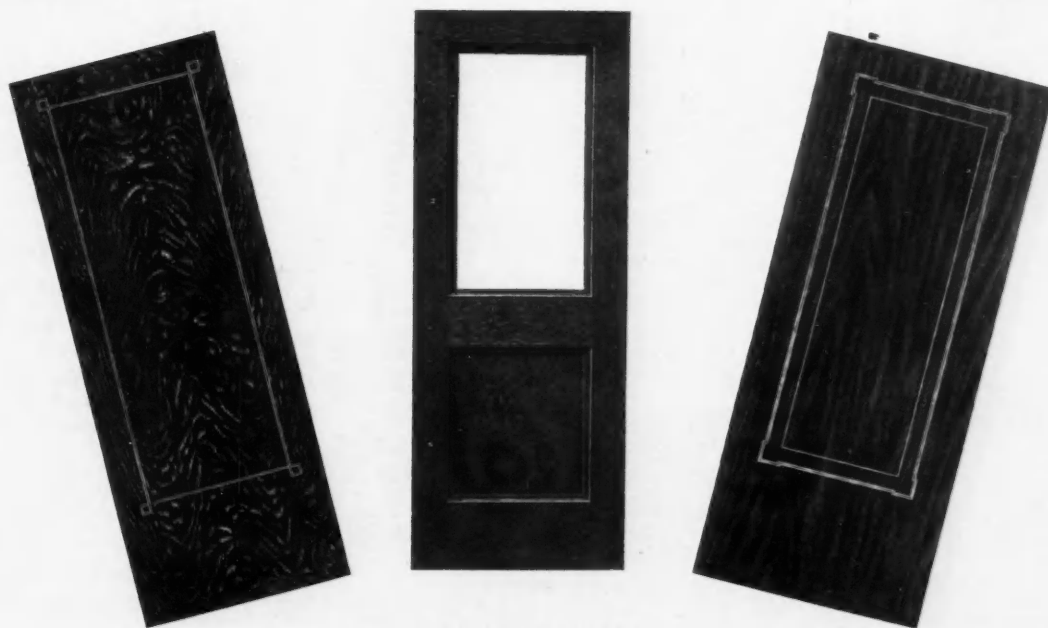
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**BECAUSE
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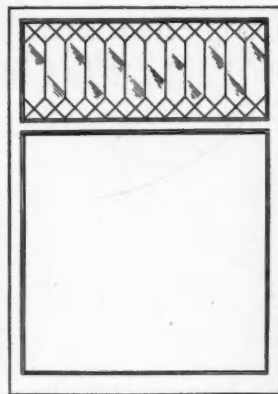
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No. 1967
Size Glazed D.S. Price
2-8x6-8-1 1/2 in. \$3.70
2-8x7-0-1 1/2 in. 4.40
3-0x7-0-1 1/2 in. 4.65



COTTAGE FRONT C. R. WINDOW
No. 530
Opening B.L.Glazed T.L.Glazed Price
D.S. Ld'd
3-8 x 5-2 40 x 42 40 x 14 \$4.85
4-0 x 5-2 44 x 40 44 x 16 5.90
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4-0 x 6-2 40 x 52 44 x 16 7.30



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The ladder is cheap in price only. Weight about 2 1/2 lbs. per foot. Price 8c per foot. Bucket shelves 12c ea. extra.

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Mr. Contractor**

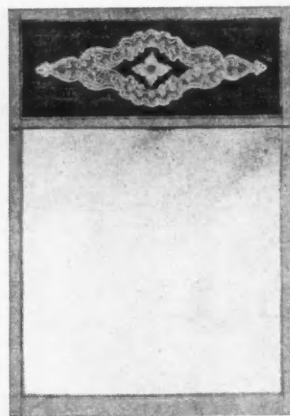
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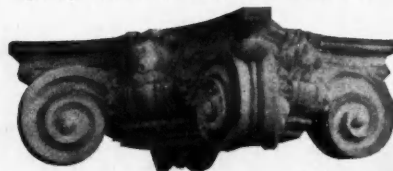
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Size Glazed D.S. Price
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Opening B.L.Glazed T.L.Glazed Price
D.S. Lace
3-8 x 5-2 40 x 42 40 x 14 \$4.70
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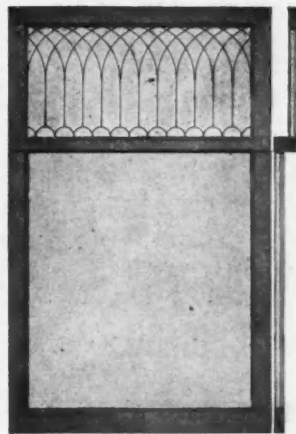


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 Glazed D. S.
 Net \$2.00
 This Door has
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 Made of Pop-
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Cottage Front Window C 80
 Top, Glazed Leaded Crystal
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C 525
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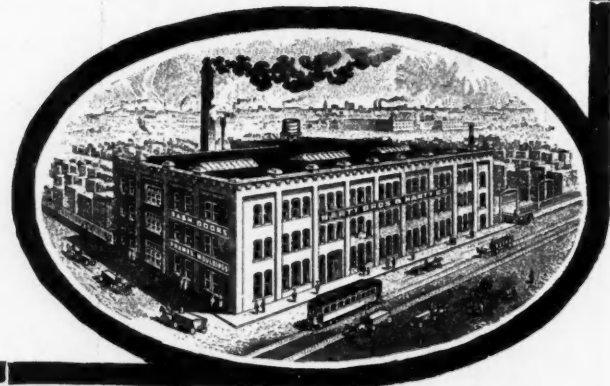
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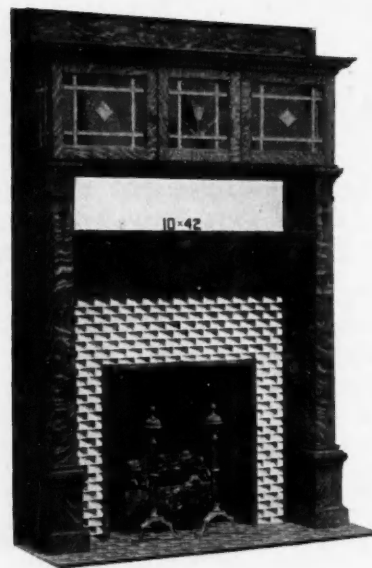
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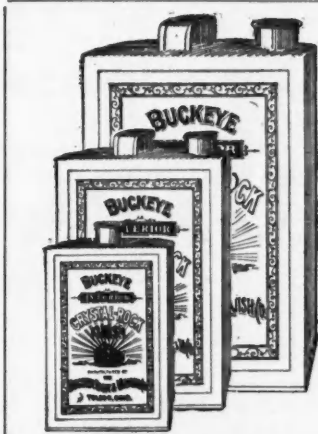
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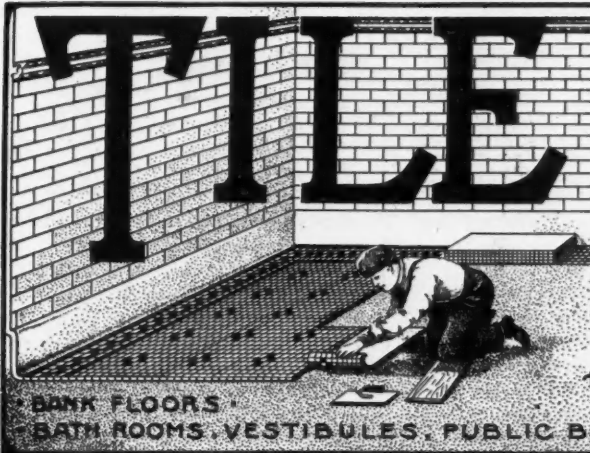
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The Noble Cement Mill

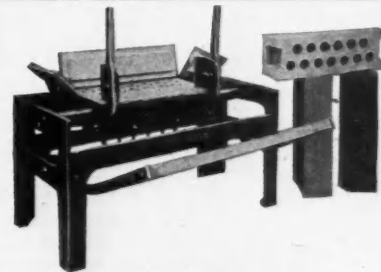
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Brass and Iron Railings, Wire Guards for Schools and Basement Windows, Fire Escapes and Area Gratings

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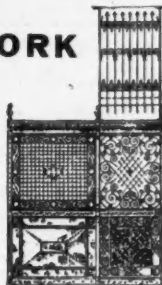
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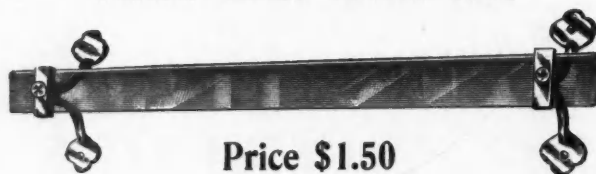
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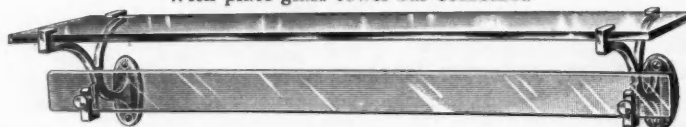


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With plate glass towel bar combined



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All prices include nickel plated bronze brackets and screws. Order by number and be sure to state size wanted.

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No. 120 75c No. 123 \$1.00

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No. 120 3 x 12 inches. $\frac{1}{2}$ inch bevel.

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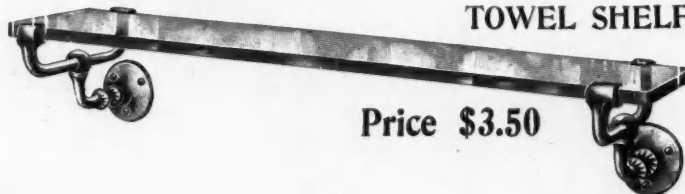


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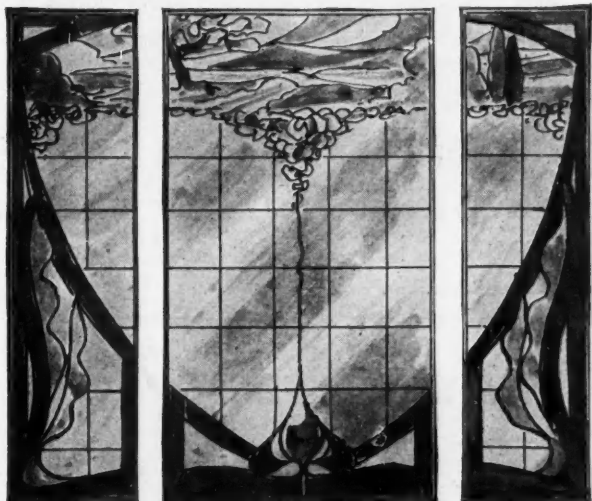
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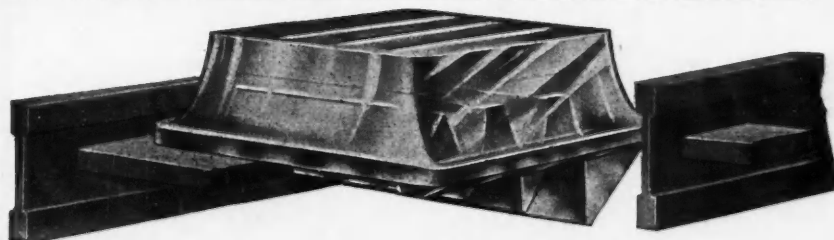
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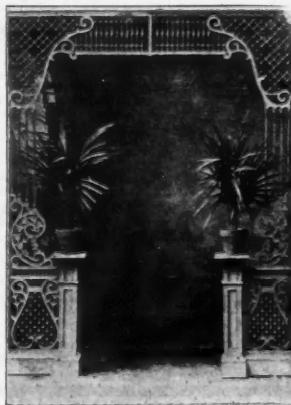
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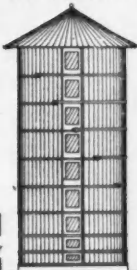


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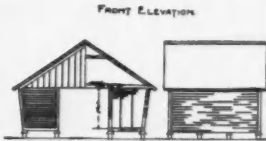
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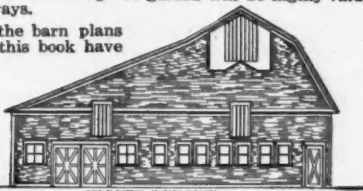


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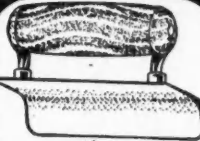

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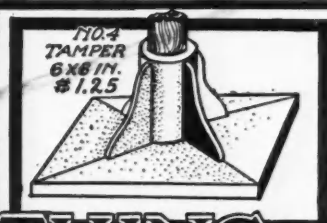
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NOTICE TO ADVERTISERS.

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than October 20 in order to insure insertion in the November number.

- NO. XI JOINTER

\$.42
- NO. X5 DRIVEWAY GROOVER

\$.85
- NO. X5 STRAIGHT END JOINTER

\$.54
- NO. X2-3/4 INCH EDGER

\$.42
- NO. X4-3/4 INCH EDGER

\$.48
- NO. X17 SQUARE EDGER

\$.60
- NO. X18 BEVEL EDGER

\$.48
- NO. X100 CURBING EDGER

\$.85
- NO. X8 GUTTER TOOL

\$.85
- NO. X6 CORNER TOOL

\$.48



EVERYTHING IN CEMENT MACHINERY

TO be in the concrete making business in the Miracle way is to be in it in the most profitable way—and the most satisfactory all round. For example, in tile and sewerpipe making—With

MIRACLE SEWERPIPE AND TILE MOLDS

you can start upon a small and inexpensive scale—say \$57.50 for a complete outfit for making 24-inch pipe. You can make 110 feet of this pipe per day, and when you consider that the first 68 feet you sell pays for the entire equipment you can judge how quickly you will be making clear profit on your outfit. And you will make Tile that will sell at the same price as burnt clay at about 150 per cent profit.



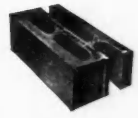
MIRACLE ONE-MAN BRICK MACHINE



When a sensible man wants a brick machine he is not going to be satisfied with anything short of a perfect stand-up-and-give-service kind. That's the Miracle Machine all over. It's made to wear and give satisfaction. And it will turn out from 3,000 to 4,000 brick every day without trouble. There's nothing in which false economy is falsier than in buying a cheap brick machine. Remember the tremendous saving in repair expense. Price \$150.00 f. o. b. Minneapolis.

MIRACLE DOUBLE STAGGERED AIR SPACE BLOCK

When you are thinking of building block machines, you must clear the space all around the Miracle in your mind, for it's to be considered by itself alone. Its staggered, double air space arrangement is fully patented and protected—and cannot be imitated. The Miracle is endorsed by two governments—United States and England.



Our price for complete equipment for making 69 different sizes and styles is \$250.00—and a go-ahead man never invested \$250.00 better. We create the demand by liberal, national advertising.





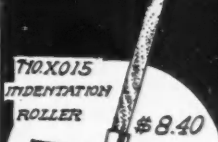

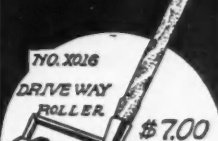
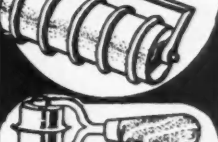

OUR NEW CATALOG

We have just received our new catalog which is more complete and attractive than ever before, has over 500 illustrations, pages 9 x 12. We want to place this catalog in the hands of all our cement working friends and while the regular price is 25 cents, if you will tell us what line you are interested in and ask for Catalog K we will be glad to mail it free.

ADDRESS

Miracle Pressed Stone Co.
LARGEST MANUFACTURERS OF CEMENT MACHINERY IN THE WORLD
MINNEAPOLIS, U. S. A.

Miracle Concrete is our new little trade magazine, published "when the spirit moves us." Send in your name and we will place it on our complimentary list.

- ASK FOR PRICES
- NO. X12 RAISED POINTER

\$.40
- PLASTERING TROWEL
ALL SIZES

10 1/2 IN. \$ 1.15
- LACED SAND SCREEN

\$ 2.50
- NO. X015 INDENTATION ROLLER

\$ 8.40
- NO. X016 DRIVEWAY ROLLER

\$ 7.00
- ROLLING JOINTER

\$ 1.50
- NO. X11. RADIUS TOOL

\$.42
- POINTING TROWEL

\$.25
- SAND RIDDLE, \$.35


Buy Your Storm Windows and Storm Doors 50% Below Dealers' Prices

Our wonderfully low prices on Storm Doors and Windows make it possible to protect your home against the wintry blasts at practically no expense, as the amount you save in fuel alone soon pays entire cost of storm protection. Our Storm Doors are extra wide and extra long—attractively painted. All our Storm Sash are made with extra wide side and bottom rails. Don't wait until cold weather comes—**Order Now**, save money and keep your house or out-buildings snug and warm in zero weather.

STORM DOORS

White Pine

Hand Painted

Clear Glass

Made ^{1/2} inch wider and 1 inch longer to allow for fitting on outside of door frame.

ALASKA



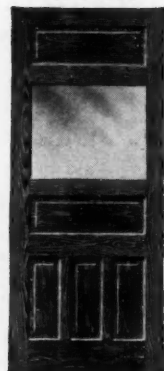
Storm Door
2⁶ x 6⁶ ... \$1.82
2⁸ x 6⁸ ... 1.91
2¹⁰ x 6¹⁰ ... 2.02
3⁰ x 7⁰ ... 2.24

SIBERIA



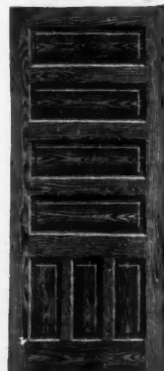
Storm Door
2⁶ x 6⁶ ... \$1.29
2⁸ x 6⁸ ... 1.34
2¹⁰ x 6¹⁰ ... 1.46
3⁰ x 7⁰ ... 1.55

ICE KING



Storm Door
2⁶ x 6⁶ ... \$1.94
2⁸ x 6⁸ ... 2.03
2¹⁰ x 6¹⁰ ... 2.13
3⁰ x 7⁰ ... 2.36

POLAND



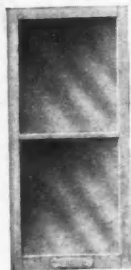
Storm Door
2⁶ x 6⁶ ... \$1.41
2⁸ x 6⁸ ... 1.46
2¹⁰ x 6¹⁰ ... 1.57
3⁰ x 7⁰ ... 1.67

Hand Painted

Hand Grained

Storm Windows Carried in Stock Prompt Shipment

No. R 219, TWO LIGHTS



Size of Glass	Price Glazed Single Strength
16 x 24	\$0.80
16 x 26	.94
16 x 28	.95
16 x 30	.98
16 x 32	1.04
18 x 24	.90
18 x 26	.96
18 x 28	1.00
18 x 30	1.02
18 x 32	1.08
20 x 20	.89
20 x 22	.92
20 x 24	.94
20 x 26	.98
20 x 28	1.04
20 x 30	1.12
20 x 32	1.22
20 x 34	1.31
22 x 24	.98
22 x 26	1.03
22 x 28	1.10
22 x 30	1.21
22 x 32	1.31
22 x 34	1.46
22 x 36	1.50
24 x 24	1.08
24 x 26	1.09
24 x 28	1.20
24 x 30	1.30
24 x 32	1.38
24 x 34	1.50
24 x 36	1.51
26 x 28	1.42
26 x 30	1.46
26 x 32	1.49
28 x 30	1.48
28 x 32	1.74

Ventilators in bottom 10c each, extra.

No. R 220, FOUR LIGHTS



Size of Glass	Price, Glazed, Single Strength
10x20	\$0.77
10x22	.85
10x24	.88
10x26	.97
10x28	1.02
10x30	1.14
10x32	1.25
12x20	.85
12x22	.97
12x24	1.03
12x26	1.10
12x28	1.15
12x30	1.28
12x32	1.34
12x34	1.49
12x36	1.50
14x26	1.28
14x28	1.33
14x30	1.45
14x32	1.52

You can order direct from Sample Bargains shown on this page or send for large FREE Millwork Catalogue, containing 5000 bargains.

STORM SASH FOR LARGE FRONT WINDOWS

No. R. 218, Two Lights, 1 1/2 inches Thick

Bottom Glass	Top Glass	Price Glazed D. S.
40x40	40x14	\$2.88
40x40	40x16	2.98
40x44	40x16	3.27
44x40	44x16	3.37
44x44	44x16	3.47
44x46	44x18	3.62
44x50	44x18	3.87

Ventilators in bottom 10c extra.

STORM SASH

No. R 216, Eight Lights, 1 1/2 inches Thick



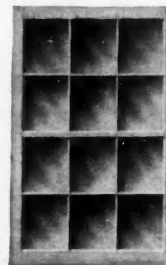
Size of Glass	Price Glazed Single Strength
8 x 10	\$0.79
9 x 12	.84
10 x 12	.86
10 x 14	.96
10 x 16	1.13
12 x 14	1.15
12 x 16	1.25

Swing Light 40c net extra.
Ventilators in bottom 10c extra.

No. R 217, Twelve Lights, 1 1/2 in. Thick

Size of Glass	Price Glazed Single Strength
8 x 10	\$0.86
9 x 12	1.09
9 x 14	1.28
10 x 12	1.19
10 x 14	1.32

Ventilators in bottom 10c extra.



Storm Sash Hardware

Storm Sash Hangers, with Screws, per pair 10c, and Fasteners 11c per pair.



GORDON, VAN TINE & CO. 242 FEDERAL ST., DAVENPORT, IOWA