

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

A SIMMONS-BOARDMAN PUBLICATION

Vol. 46.

CONTENTS FOR DECEMBER, 1928

No. 3.

COPYRIGHT, 1928, BY AMERICAN BUILDER PUBLISHING CORPORATION

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Published on the first day of each month by American Builder Publishing Corporation. *Chairman of Board*, Edward A. Simmons; *President*, William A. Radford; *Treasurer*, Henry Lee; *Secretary*, Roland D. Radford; *Assistant to Chairman*, William A. Radford, Jr.; *Editor*, Bernard L. Johnson; *Eastern Editor*, Charles G. Paker; *Advertising Staff*: Delbert W. Smith, C. R. W. Edgcombe, L. H. Reich, O. H. Sutter, Cecil W. Blashill, H. P. Sessions, J. J. Dubro, R. E. Clement.

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MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS

LET TRUSCON SERVE YOU

TWENTY-FIVE YEARS OF PIONEERING & LEADERSHIP

Truscon offers for your consideration + years of experience in practical building + a close knowledge of the problems of the modern builder + the only complete line of fireproof building products in the world ever manufactured by one concern + an engineering service covering all problems of modern, permanent building to supplement your own organization + a warehousing service that is nation-wide and puts the entire commodity line within a few hours of any building site + and finally, the basic desire to give every possible cooperation.

TRUSCON STEEL COMPANY, YOUNGSTOWN, O.

Established 1903

Warehouses and Engineering Offices in All Principal Cities

Factories in Youngstown, Cleveland, Los Angeles
The Truscon Laboratories, Detroit, Michigan

The Complete Truscon Line of Steel Building Products includes

STEEL WINDOW PRODUCTS	STEEL DOORS	METAL LATH PRODUCTS	REINFORCING STEEL	STEEL POLES
Pivoted Continuous Double-Hung Donovan Awning Type Counterbalanced Projected Mechanical Operators Steel Casements Basement Windows Steel Frames	Swing and Slide Vertical Folding Vertical Lift Vertical Lift-Swing Airplane Hangar	A-Metal Laths and Hy-Rib Lath Accessories Metal Trim	Steel Forms Florestyles Locktype Welded Steel Fabric Contraction Joints Steel Road Forms	H-Frames Towers
	STEELDECK ROOFS	STEEL JOISTS	PRESSED STEEL SPECIALTIES	MAINTENANCE PRODUCTS
	Insulated and Waterproofed.	P-G (Plate Girder) Type O-T (Open Truss) Type		Waterproofings Technical Paints Floor Hardeners Cement Roofing Tile

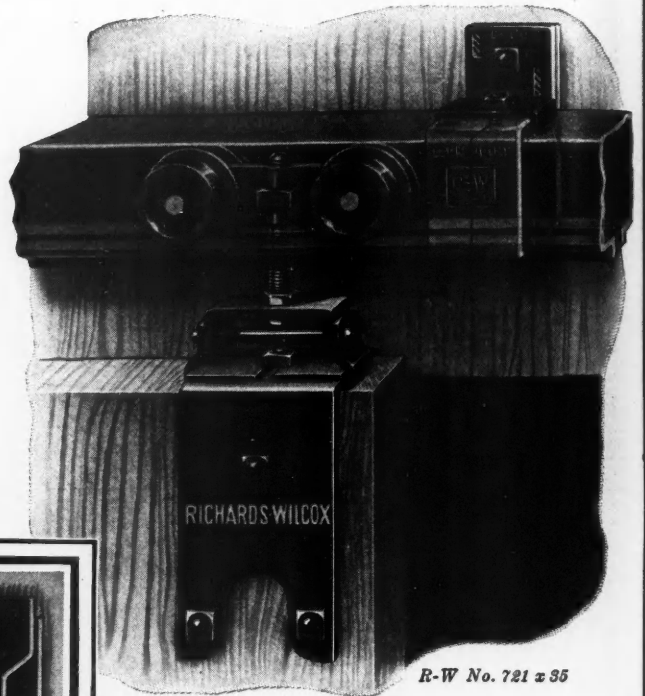
Lifetime-Troublefree-Service!

That's what you deliver when you sell or install the R-W door hardware described on this page.

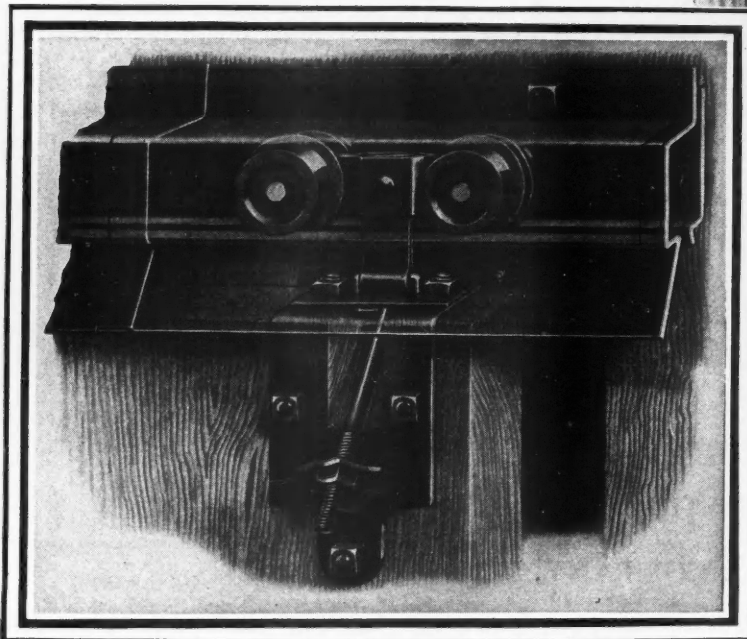
These hangers and track are carefully engineered to insure that doors—the most important part of any building—will always give satisfactory service.

No. 721 hanger with No. 35 track. A flexible joint hanger with steel wheels and roller bearings. Both lateral and vertical adjustments are provided. The apron is hinged and adjustable to door thickness.

Heavy 14 gauge steel is used for the self cleaning track. The new patented lock-joint center bracket and blind end bracket keep track in perfect alignment and clear at all times. Finished in baked black enamel or galvanized.



R-W No. 721 & 35



R-W No. 423 & 36

No. 423 hanger with No. 36 track. This hanger is of the same high grade construction and embodies the same features as No. 721. It differs only in the method of vertical adjustment which is easily accessible and the hanger can be used with No. 35 track.

The storm-proof track is 14 gauge—self cleaning type. A wide apron and blind ends insure against the ravages of weather and birds. Furnished in galvanized or baked enamel finish.

Better dealers everywhere feature the R-W line of door hardware—the largest and most complete made.

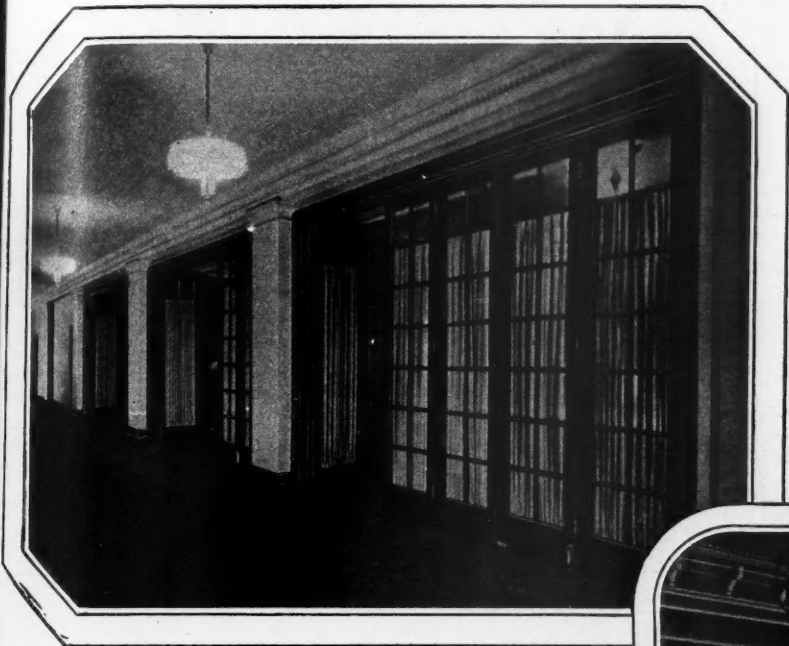
Send for complete catalogue

Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides.

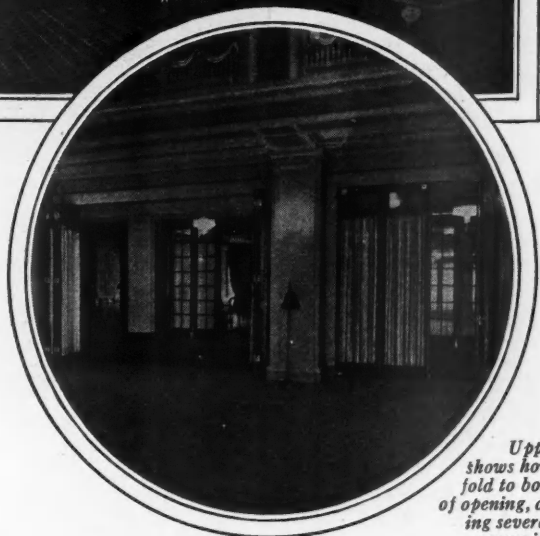
New York . . . AURORA, ILLINOIS, U.S.A. . . . Chicago
 Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans Des Moines
 Minneapolis Kansas City Los Angeles San Francisco Omaha Seattle Detroit
 Montreal · RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. · Winnipeg

ice! with FOLDER-WAY rooms do double duty



FoldeR-Way illustrated here is particularly suitable for doors of medium weight. Doors are carried by ball-bearing hanger running in overhead track.

Shown below are doors opened and closed. Note how they fold out of the way.



Upper view shows how doors fold to both sides of opening, converting several small rooms into one.

WITH property values up and rising, practical men hesitate to set aside valuable space for occasional use. And there is no need.

FoldeR-Way partition door hardware is the economical and convenient solution of the problem. With doors closed, rooms remain separate units; open and folded out of the way, a single, spacious room that quickly meets emergency needs.

FoldeR-Way is ideal doorway equipment for hotels, churches, auditoriums, gymnasiums or lodge halls. Noiseless, easy-operating doors that do not sag or rattle or stick—just like folding up an entire wall.

Richards-Wilcox doorway engineers will be glad to serve you.

Richards-Wilcox Mfg. Co.

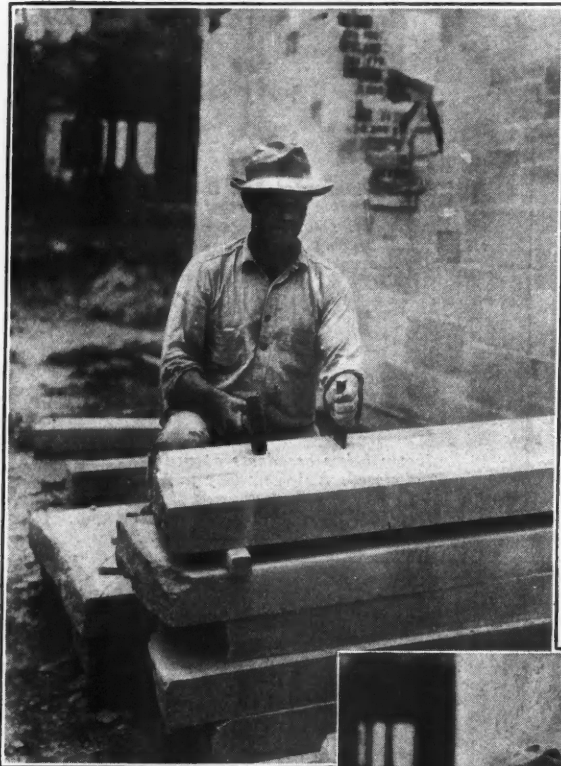
A Hanger for any Door that Slides.

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

LARGEST AND MOST COMPLETE LINE OF DOOR HARDWARE MADE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Here's the Sawed Stone



(Above) Preparing Indiana Limestone Random Ashlar with aid of coping tool. Note opening in wall showing construction. Here stone is being used as structural facing over hollow tile.

WE ship Indiana Limestone for Random Ashlar right to the job in strips four inches thick as shown here. There, with the aid of an electric carborundum saw or ordinary hand saw, it is broken and jointed ready for laying up in the wall. Stonemasons or bricklayers do the work. Random Ashlar may be used either as a structural facing or as a veneer like any other building material. Cut stone may be used for trim if desired.



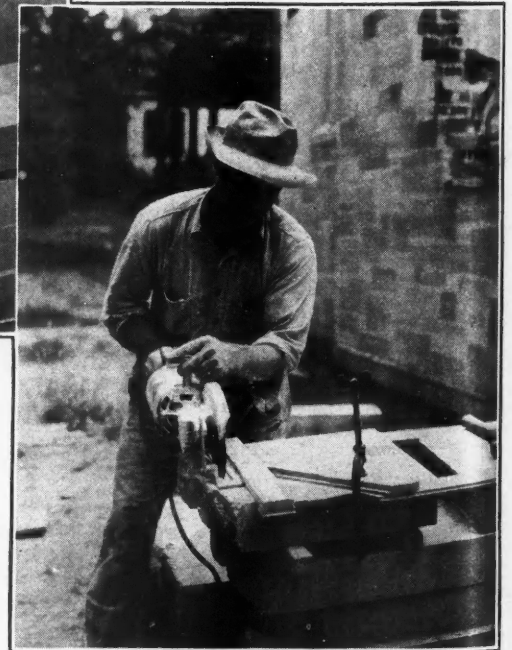
(Left) After groove is cut in face of stone with a saw, it is turned over and a gentle tap with a mallet breaks it clean on line of the groove.



FREE

These free booklets show many fine Indiana Limestone houses built at a cost only 5% to 6% greater than if other materials had been used. Write for them today. Use coupon on opposite page.

(Right) This man is using portable electric carborundum saw for cutting the groove across the stone. Little more than a scratch is necessary and an ordinary hand saw or buck saw can be used if preferred.



INDIANA LIMESTONE COMPANY, General Offices: BEDFORD,

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

... and Here's the Result



Residence, Terre Haute, Indiana. Built of Variegated Indiana Limestone Random Ashlar. We ship this stone all over the country. Leading buildings in New York, Chicago and all principal cities are constructed of Indiana Limestone.

HOUSES of beauty unlike anything on the market today! Easy to sell . . . moderate in cost . . . making a substantial profit and building a reputation for the contractor!

Such is the story of Indiana Limestone Random Ashlar construction, the amazing new way of using limestone which brings this beautiful natural material well within the reach of the average home-builder. Contractors the country over are now starting to build houses of our stone. We will help you get started. With our resources of over \$46,000,000 and branch offices in all principal cities, we are in a position to give you every possible assistance in using Indiana Limestone.

Why not write at once for our literature and learn the full story? Here is the sort of profit opportunity you may be looking for. One that is out of the run of ordinary competition. Let us tell you about it. Just fill in, clip and mail the coupon and we will send you full information by return mail. No obligation. Do it now.

Box 757, Service Department,
Indiana Limestone Company, Bedford, Indiana.

Send me full information on Indiana Limestone for
Random Ashlar facing for residences.

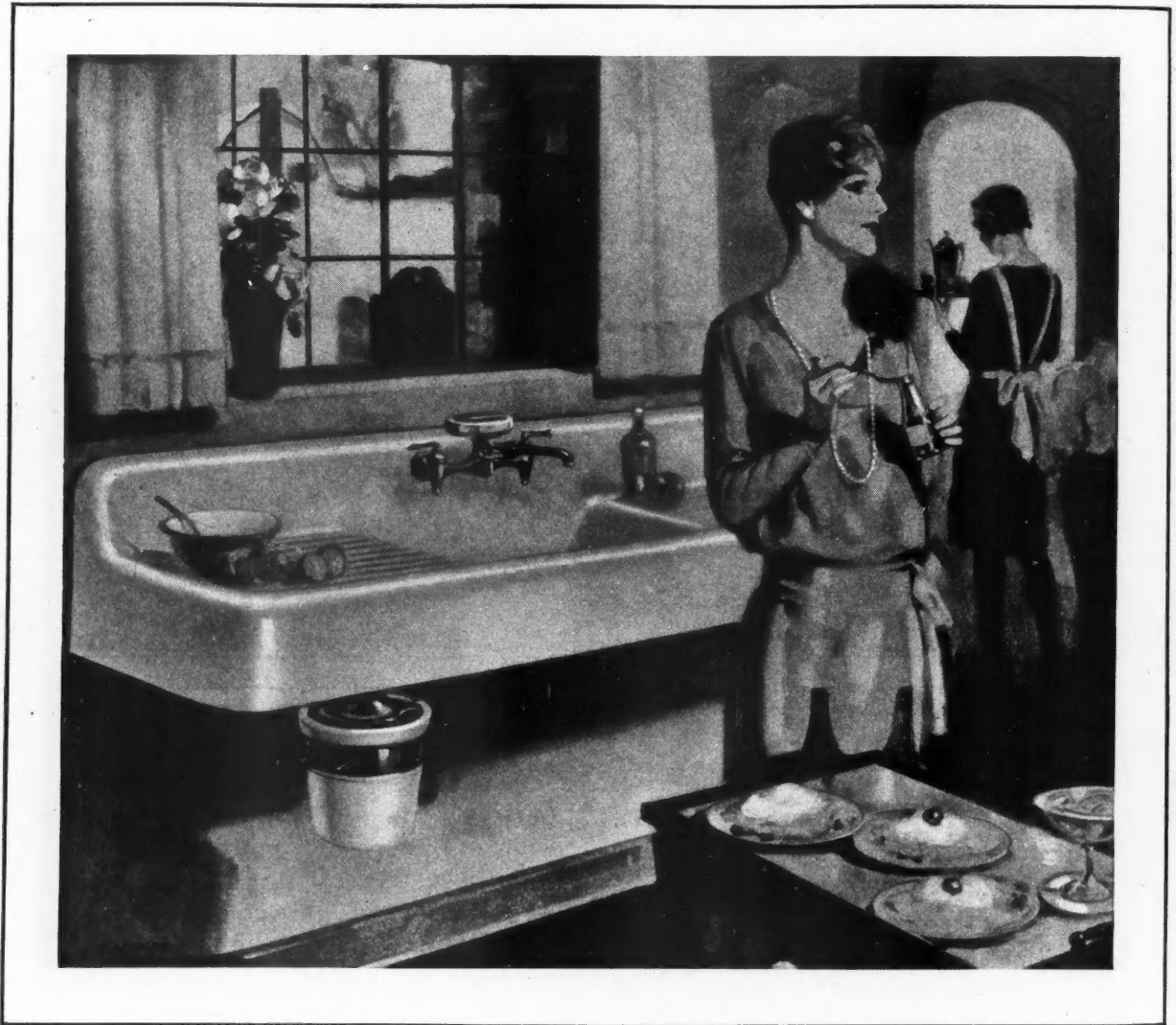
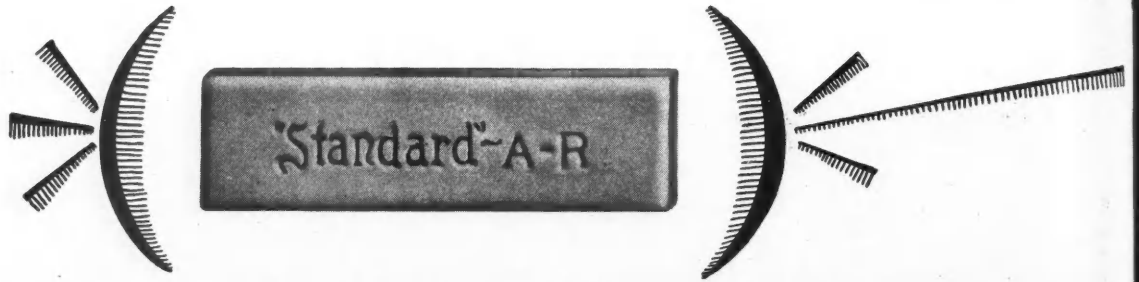
Name

Address

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

INDIANA • Executive Offices: TRIBUNE TOWER, CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



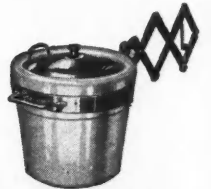
The "THREE 8's" SINK



This hand-wrought faucet of beautiful octagonal design, with swinging-spout, is finished in Chromard, a metal finish which has the sheen of platinum and cannot tarnish or corrode.

8 -inch low back fits snugly under a deep window.
 8 -inch deep sink is roomier; prevents over-the-rim splashes.
 8 -inch deep front gives the whole sink a new beauty.

"Standard"
 PLUMBING FIXTURES



The directly attached garbage container of vitreous china with removable aluminum receptacle. Also made for installation with sinks other than the "Three 8's."

A mark of distinction for the better home

WHETHER it is evident or not, there is a little thrill of expectancy in every woman's heart as she is about to cross the threshold into the kitchen of what may be her future home. Here is her "workshop", and she is of the new generation that expects and demands modern "tools" with which to work efficiently. In this one room many a deal is closed—or lost! Before she discovers the latest mechanical refrigerator in the pantry—yes, even before she notices that the range has the new oven regulator—she has seen the sink and mentally measured its desirability.

And ten to one she knows a "Standard" "Three 8's" Sink the instant she sees it. Its perfectly-proportioned 8-inch back, 8-inch front and 8-inch deep sink compartment smile at her frequently from the pages of her favorite magazine. In common with millions of other housewives, she is being educated by "Standard" national advertising to the comfort and convenience of this "Three-8's" Sink, and to the superiority of Acid-Resisting Enamel, of which it is made—the enamel which resists not only fruit and vegetable acids but every commercial acid excepting hydrofluoric. She is rapidly accepting the fact that "Standard" A-R (the mark of Acid-Resisting Enamel), on the sink and other enamel plumbing fixtures, is a mark of distinction for the better home. And she is well

aware of the actual economy which this long-wearing, lastingly-beautiful enamel assures.

Nor are either of these points lost on the man of the house. In plumbing fixtures, more than in any other one thing, a man seeks the substantial—the enduring—the permanently good-looking. They are a built-in part of my home, he reasons. To replace them in five years or so will be a difficult and costly matter. The sensible thing is to start right. And he casts his vote for the better home.

Sooner or later, wherever you may be, you will feel the effect of this consistently growing discrimination in the ease or effort with which your property turns. It will be a boost or a barrier, depending on the degree of judgment as reflected in the plumbing specifications.

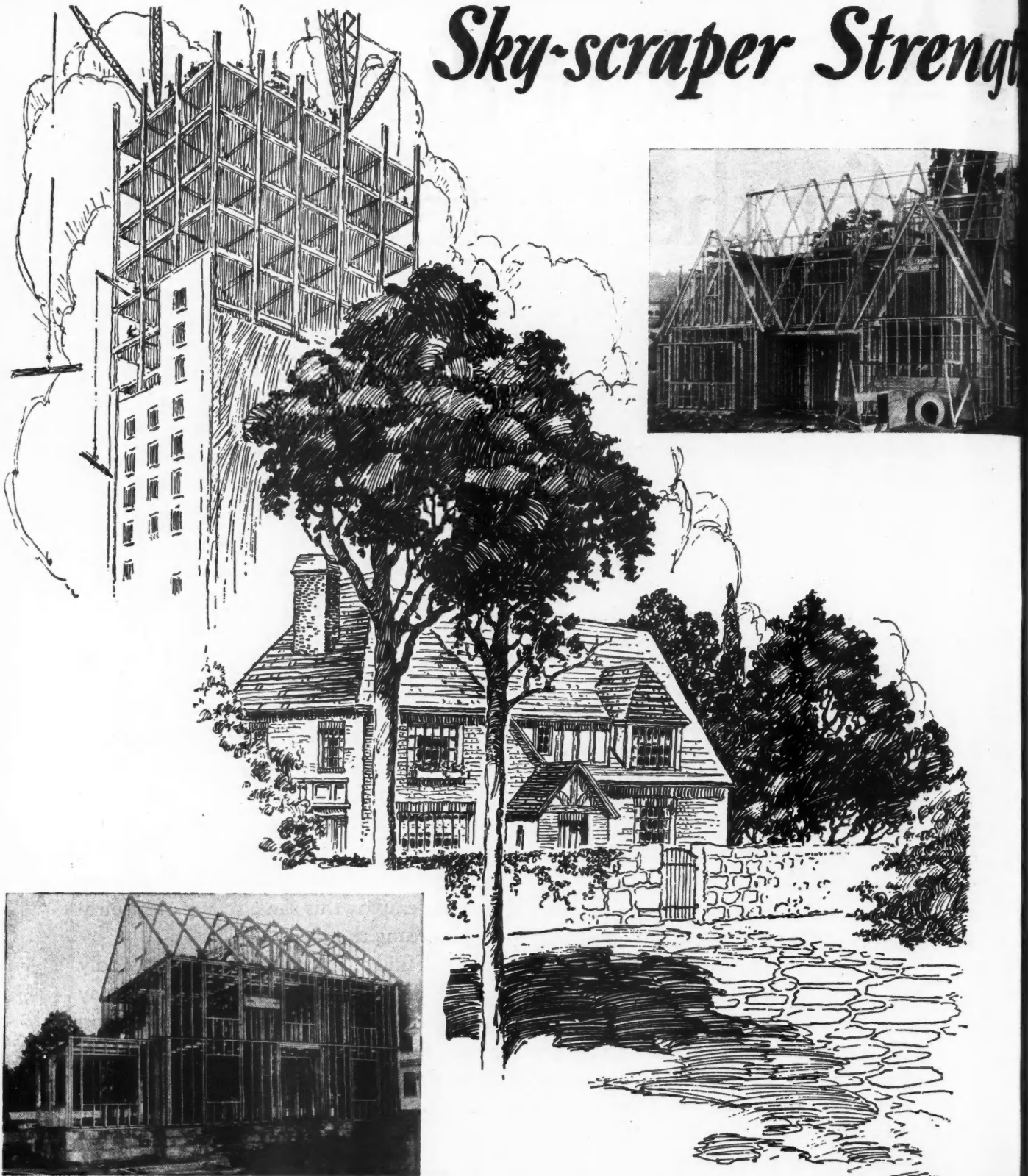
Many of your prospective buyers will point to the "Standard" Showroom as the inspiration of their modern thought on plumbing fixtures. What is more logical, therefore, than for you to employ this same source of inspiration in meeting the demand.

You will find competent men who will gladly counsel with you, and a most complete display of plumbing fixtures in modern design and newest colors, prominent among which is the "Three-8's" Sink, with its "Standard" A-R—the mark of distinction for the better home.

Standard Sanitary Mfg. Co.
PITTSBURGH

"Standard"
PLUMBING FIXTURES

Sky-scraper Strength



STEELERAI

THE MODERN METHOD OF HOUSE ON

STEELERAI

Strength as the framework of the homes you build!

—now a practical reality—

No one has ever questioned the use of steel in a skyscraper. It is obviously the *one* logical building material for which there is no substitute.

With the ingenious STEEL FRAME HOUSE SYSTEM you can NOW apply the same sound logic to the erection of the *homes* you build and get all the superior advantages of permanence and fire safety that characterize the time-tried sky scraper.

There is no limit to the architectural possibilities of "Steel Framing". The unique design of the steel frame angles as produced by this company makes it possible to construct a complete frame of steel from foundation to roof at an economic cost within the reach of every home builder.

STEEL FRAME HOUSE COMPANY

Subsidiary of McCLINTIC-MARSHALL CORPORATION

Oliver Building, Pittsburgh, Pa.

Read the interesting description of this ultra-modern development in house construction in the illustrated booklet "Steel Framing For Dwellings"—a copy will be sent upon request.

☉☉ We're interested in "Steel Framing" ☉☉

Send your booklet "Steel Framing for Dwellings"

We BUILD approximately.....houses during year.....

Company.....

Address.....

Individual.....

STEEL FRAMING

USE IN CONSTRUCTION

Wallace

PORTABLE MACHINES

Portable

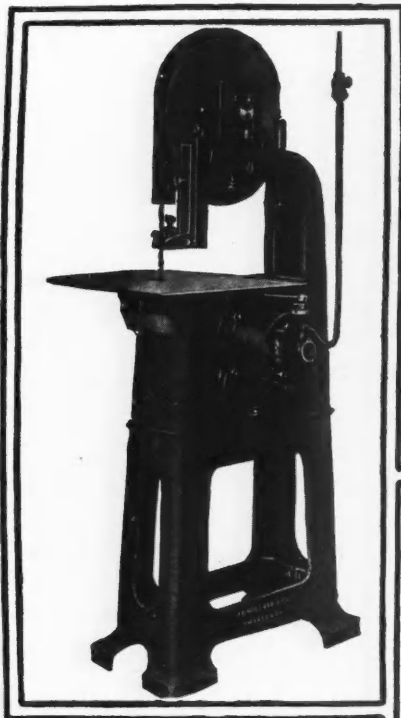
save your money

Workace Radial Saw

Amazing low price, \$140

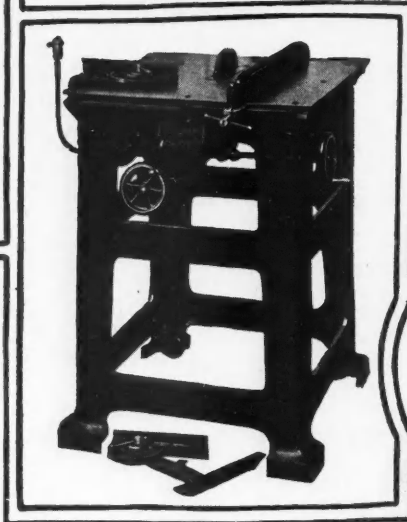
Cast Iron Table, \$10.00 Extra.
Cast Iron Legs, \$15.00 Extra.
(F. O. B. Chicago)

Here's a great big value in a compact, portable machine—the Radial Saw, built to handle all cutting operations, any angle, compound meters, cutoff, ripping, dadoing, tenoning, routing, shaping, fluting, boring, sanding, etc.



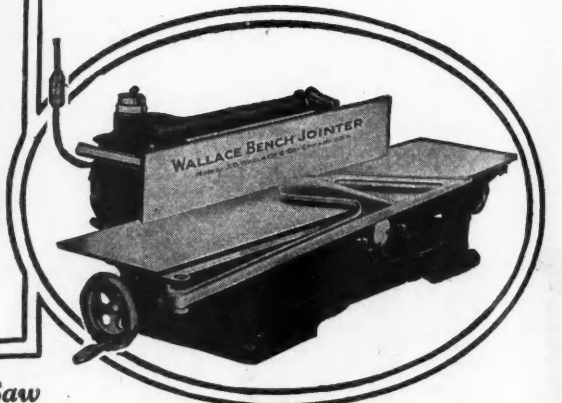
Wallace Portable Band Saw

Contains built-in and directly connected motor with ample power to efficiently handle work within its full capacity.



Wallace Portable Universal Saw

A portable floor type of Universal Circular Saw that combines all the advantages of the portable bench machine and the self-contained floor type. The saw can be moved independent of its base.



Wallace Bench Planer and Jointer

A compact and highly efficient machine—easily portable with ample power to handle all classes of work.

Woodworking Machines

and increase your profits

THE percentage of savings and extra profits on both small and large jobs is well worth the small cost of Wallace Individual Portable Machines. . . You can take a Wallace Machine to the job instead of wasting time and man-power taking the job to the machine.

THE outstanding feature of Wallace Machines is that they are easily moved from one part of a building to another—can be set up anywhere and plugged into any convenient electric light socket. You roll your Wallace Machines from room to room as the work progresses. They're light weight, move about easily, take up very little room and never get in the way.

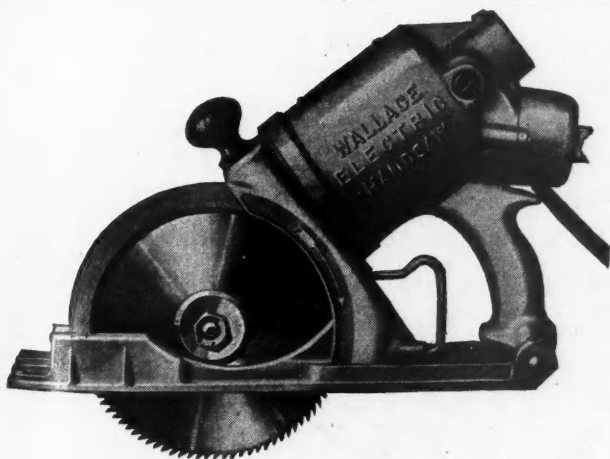
Many carpenters and contractors move their Wallace Machines into the shop when building construction is slack—or into a garage or basement—and during idle hours work up waste stock, turn out storm sash, screens, standard mouldings, cabinets, etc. There's a handsome profit in this extra work.

Wallace Machines not only bring enor-

mous profit increases but insure uniform workmanship. Motors are integral parts of the machines. You never find a belt-driven Wallace Machine—all are direct drive. You know what this means in convenience and easy running.

Free Trial—Easy Terms

We'll send you one or more Wallace Machines for a free trial so that you can prove their superiority by actually using them, right on the job. You'll find the Wallace way so much cheaper and quicker than old-fashioned methods. If you decide not to keep the machines, ship them back to us and it won't cost you a cent, not even freight charges. Or take ten months to pay, convenient easy terms that frequently come right out of the extra profits so you never miss the money. . . Our offer is all in your favor. . . You have everything to gain and nothing to lose. . . Send coupon today for free book illustrating and describing all Wallace Machines. Write now—no obligation.



The Wallace Electric Hand Saw

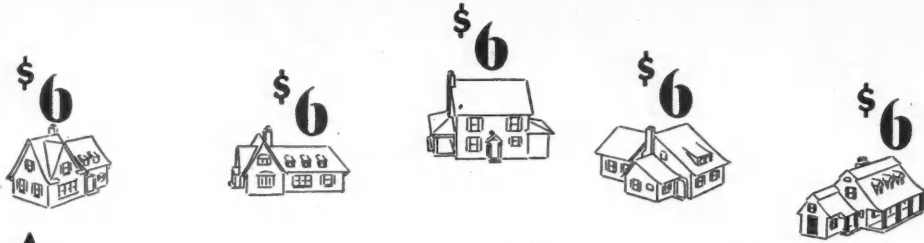
is light in weight and easy to handle. Its chief feature is absolute SAFETY. The blade is entirely covered at all times. The motor, the switch, the operator and the saw itself are completely protected against injury.

J. D. WALLACE & CO.,
136 S. California Ave., Chicago, Ill.

You may send me your book on Wallace Portable Machines and full details of *Free Trial Offer* and easy terms.

Name

Address



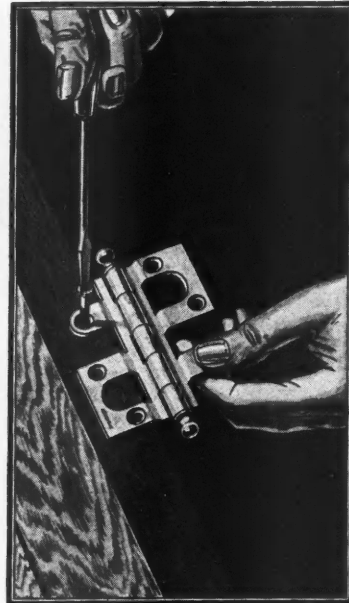
Average a \$6 saving on every house by hanging doors this NEW way



On jobs where close estimates of expense are important—where every dime looks as big as a cart wheel, you can cut ordinary costs by as much as \$6 per house by using the new McKinney "Non-Mortis" Butt.

The illustration shows how it is made and applied. One leaf folds flat into the other so that, closed, they have only the thickness of a single thin leaf!

Therefore, you don't have to cut a single mortise. You can hang a door in less than ten minutes. The door will fit snug, too, with a modest, even joint all around.



The hinges align themselves by means of the swedging on each leaf. Simply lay them in position, locating as for an ordinary hinge, and drive your screws. Easy? You bet. Save half to two-thirds of your time

on every door. And that means money. On an average size house it easily totals more than \$6 saved.

Your regular source of supply has them in standard sizes and finishes, or can quickly get them. Cabinet sizes are also available. Use them on your next job and save money. McKinney Mfg. Co., Pittsburgh, Pa.

McKINNEY "NON-MORTIS" BUTT

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

MANY A CONTRACTOR

Who "Couldn't Be Bothered
with Sanding"

NOW OWNS A CLARKE



There are many reasons for this change of heart. First and most obvious is the fact that the Clarke makes him additional profit on jobs he used to sublet.

But that is the least of the advantages of Clarke ownership.

More important is the fact that he is sure of turning out a quality of work that builds his reputation as a fine builder.

Another big advantage is that he is never penalized by failure to get his floors finished on time.

The only way you can't profit from a Clarke is not to own one. It costs nothing to get the facts. Send coupon now.

PROOF BY USE

This is one of thousands of letters showing that the Clarke is beyond comparison

LEONARD J. COOPER
Springville, New York
SAYS—"I haven't the least bit of a kick, it sure is great, every job I have done is very satisfactory and everyone who sees it work is astonished. I worked with it against a large machine and I could do more work in less time and when I had covered my space it was a finished job."

FOR YOUR OWN SAKE

SEND COUPON TODAY

Clarke Sanding Machine Co.
Dept. A-212, 3815 Cortland St., Chicago, Ill.
*Originators, and for 11 years, Manufacturers of
Portable Sanding Machines*

Interesting Facts About the CLARKE Vacuum PORTABLE SANDER

It will sand 800 to 2,000 sq. ft. of new floor to velvety smoothness in eight hours.

Cuts right through old varnish without the aid of varnish remover or neutralizer, making 300 to 1,000 sq. ft. of the roughest old floor to new velvety smoothness in a day.

Operates off any light socket, no special wiring required.

Easily carried anywhere with one hand.

Dustless in operation with genuine, inbuilt vacuum.

Does bench or shop work on a quality and quantity basis, as easily as it does floor work—and is the only sander backed by a definite positive guarantee of performance.
YOU CAN'T LOSE WITH A CLARKE.

SANDS MORE SURFACE

CLARKE SANDING MACHINE CO.
Dept. A-212, 3815 Cortland St., Chicago, Ill.

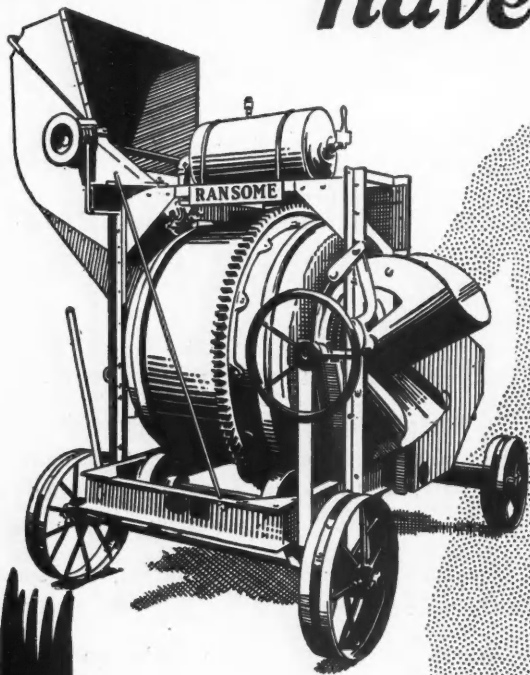
Yes, I want the facts about the Clarke Vacuum Portable Sander. Without obligation, please send them to me.

Name.....

Address.....

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

7-S & 10-S Standard Ransome Building MIXERS have the **PUNCH!**



FRONT AXLE — built of two 4" Channels, width 1 $\frac{1}{2}$ " cold rolled stubs.

MAIN FRAMES — made of two 6" Channels.

MAIN ROLLERS — 12" in diameter.

In This Corner We Have The Ransome 10-S

DRUM — 51" in diameter by 39" wide.

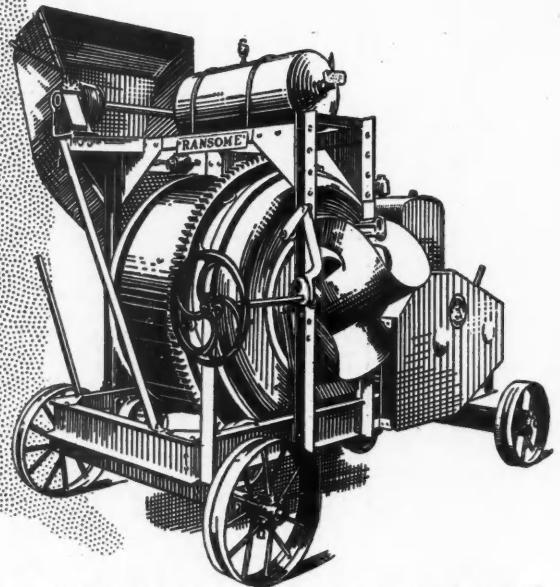
DRUM ROLLERS — 12" x 2 $\frac{1}{4}$ " — car wheel iron, Timken Roller Bearings on Drum Rollers.

CONTROL — One set of levers located at drum end of mixer.

GASOLINE ENGINE — LeRoi or Novo — 4 cylinder.

WATER MEASURING TANK — 16" x 40" — capacity, 37 gallons.

*Ransome — the first mixer in the ring
— the last to enter the repair shop.*



Fast, rugged mixers that knock out the work in record time — that is the general reputation of Ransome 7-S and 10-S among mixer "fans".

Look over the measurements of the 7-S — then you'll see why it has the "guts" to stand up and "take" it.

DRUM — 45" in diameter by 35 $\frac{1}{2}$ " wide.

DRUM ROLLER TRACKS — 2" wide — 1 $\frac{1}{2}$ " thick, forged rolled and turned from solid billets of locomotive tire steel.

Mail this Coupon!



Ransome Concrete Machinery Company
Dunellen 1850 — Service for 78 Years — 1928 New Jersey

Ransome Concrete Machinery Company,
Dunellen, N. J. — Dept. A. B.

Without obligation, send me full information about the Ransome
 7-S Mixer, 10-S Mixer.

Name

Address

"Clean the Outside from the Inside"

CAR-KRA  WINDOWARE

AT LAST - A MODERN WINDOW

For the first time since double-hung windows were invented—Car-Kra Windoware provides a marked improvement in window construction.



As Easy to Clean As a Table Top

In the Car-Kra Equipped window the sash, both lower and upper, pull inward from the top and lie down flat—locking at just the right height for easy cleaning.

When in their upright position the sash move up and down with perfect freedom.

Car-Kra Equipped windows are weather tight and storm proof. They neither rattle nor stick. And they do not interfere with outside screens.



No More of This Drudgery

Car-Kra Windoware may be installed on any standard, double-hung wood sash. No special frames are necessary. It is easily applied to either old or new construction.

Builders and Architects now using Car-Kra Equipment tell us that it is the most valuable feature that can be put into a house, apartment or office building to promote ready sale or quick rental.



Perfect Ventilation Without Draft

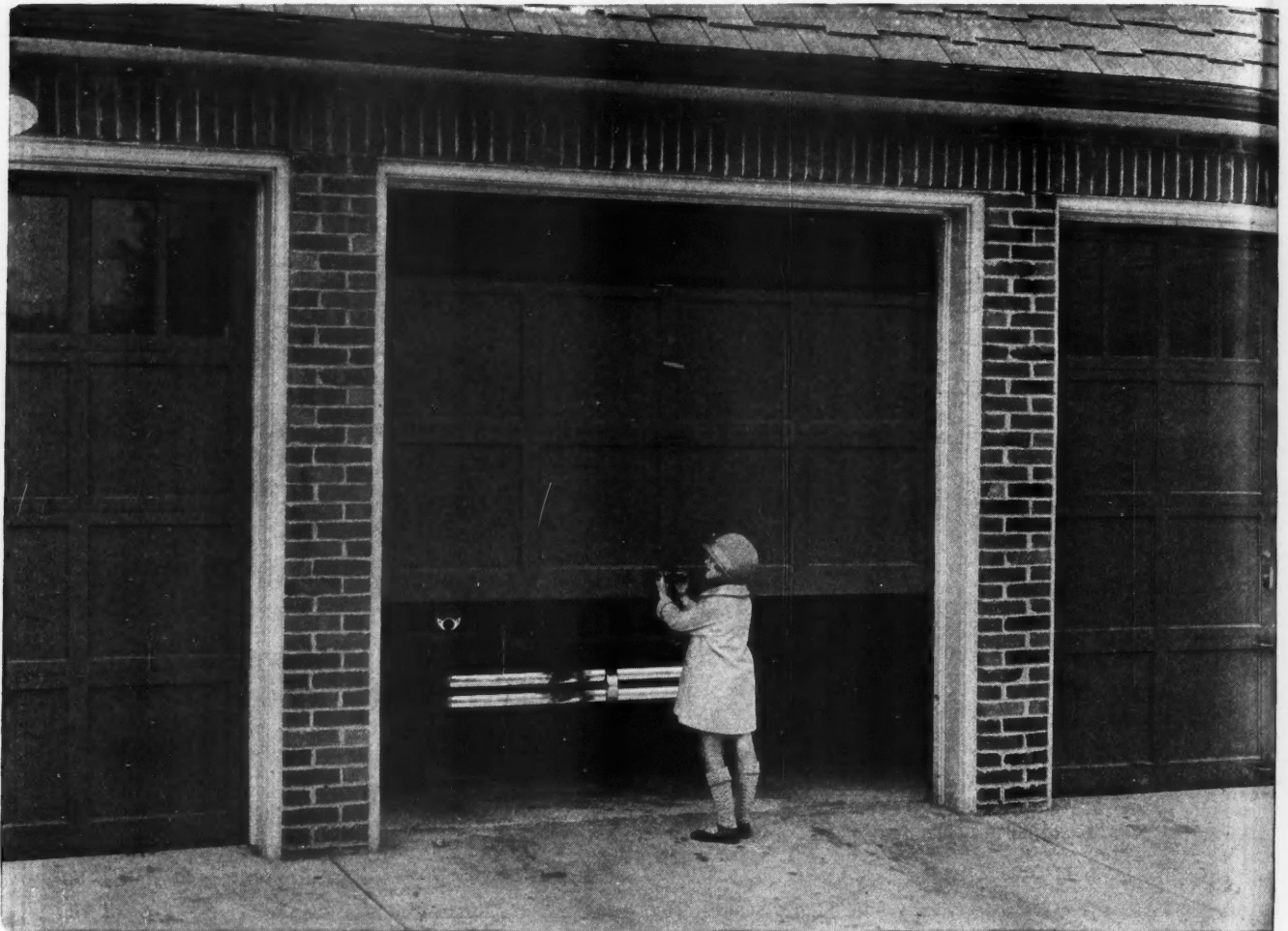
THE CAR-KRA CORPORATION
733-741 BEAUBIEN STREET - DETROIT, MICHIGAN

MAIL THIS

Please send me illustrated folder and full information regarding Car-Kra Windoware.

A.B.

- I am interested as a
- Distributor
 - Building Contractor



The Modern GARAGE DOOR Must

1. Stay open.
2. Not blow shut.
3. Not use valuable space.
4. Be easily and quickly operated.
5. Lock and unlock from either side.
6. Not twist, sag or pull out of shape.
7. Require no unusual or radical change in building to install.
8. Stay closed.
9. Open out of the way.
10. Not scrape on the floor.
11. Not wedge or jam in snow or ice.
12. Seal opening at top, bottom and sides.
13. Harmonize with any style of architecture.
14. Make available every inch of the opening.

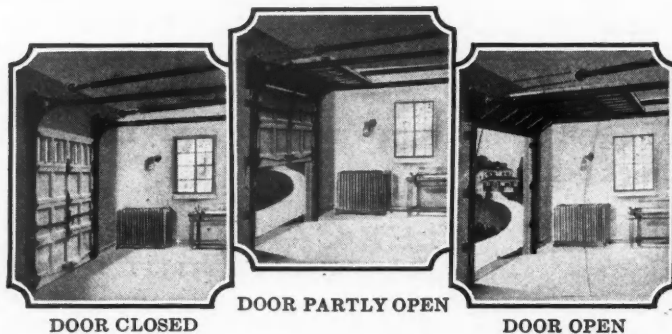
The "Overhead Door" incorporates all of these features

THE "OVERHEAD DOOR" is reliability personified. In any kind of weather—snow, wind, ice, rain—this modern garage door ALWAYS WORKS perfectly. It opens UP—COMPLETELY OUT OF THE WAY.

The "OVERHEAD DOOR" runs easily and smoothly in vertical tracks and comes to rest in horizontal tracks above, thus permitting use of entire width and height of door opening. Counter-balancing springs, and BALL-BEARING ROLLERS make operation easy. A child can operate the "OVERHEAD DOOR" with ease.

The cost is no more than any other door.

The modern home is not complete without a garage and no garage can be modern without an "Overhead Door."



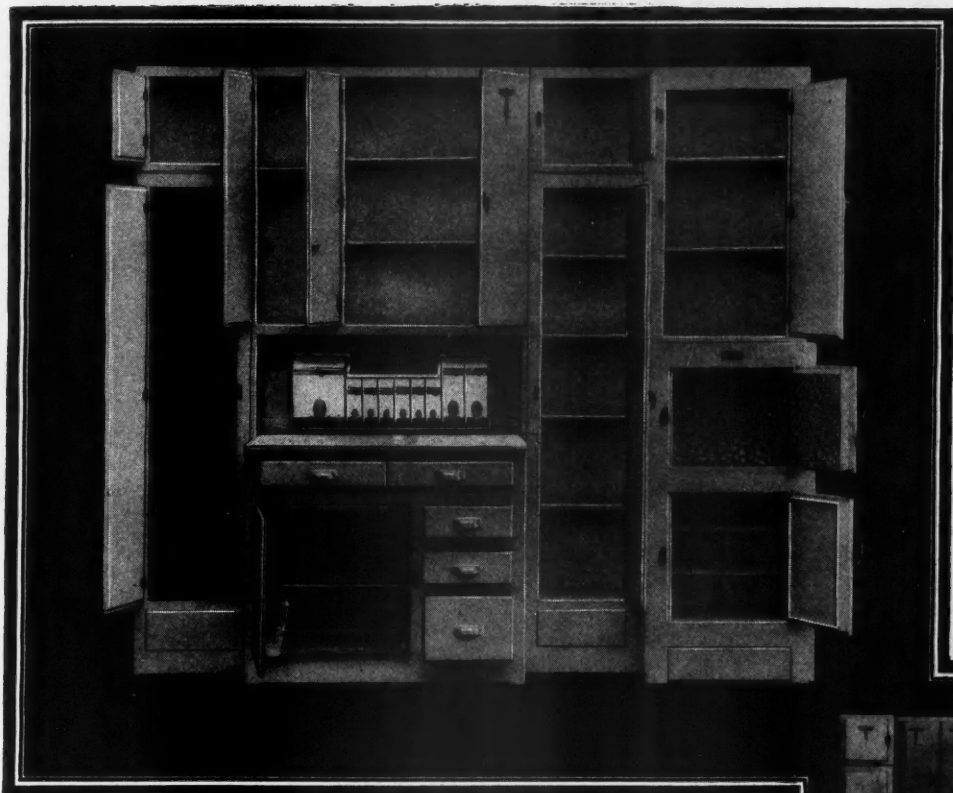
OVERHEAD DOOR CORPORATION

HARTFORD CITY, : INDIANA, U. S. A.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

KITCHEN MAID

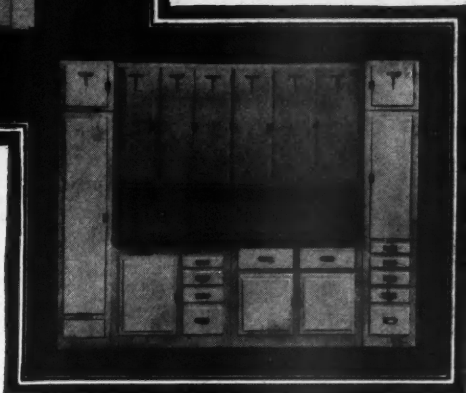
STANDARD KITCHEN UNITS



Available in:
CACTUS GREEN
LAMA TAN
DOVE GREY
TRAVERTINE IVORY
SHASTA WHITE

Left: 740 X Combination—
consisting of seven distinct units.

Below: The Butlery, for service
halls and large kitchens.



Kitchen Prestige . . . that helps you rent or sell

To millions of women, the name Kitchen Maid is a symbol of all that is new, fine and smart in kitchens. Show any woman a kitchen equipped with Kitchen Maid Units—and you've gone far toward selling her on the entire house or apartment.

These units are the product of America's largest exclusive makers of built-in kitchen equipment. They include kitchen cabinets, broom closets, dish cupboards, divider cupboards, refrigerators, butlery units, Dinofold breakfast nooks, complete kitchenette assemblages—units filling every kitchen need.

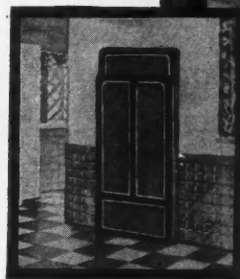
Each Kitchen Maid unit is complete in itself—may be used alone or in a unit combination, installed in recess or set against the wall. Kitchen Maid standard finishes offer a choice of *Cactus Green, Lama Tan, Dove Grey, Travertine Ivory or Shasta White.*

Kitchen Maid Units, moreover, provide many important practical advantages found in no other equipment—such as sanitary rounded inside corners, smooth doors, concealed hinges.

Let us send you the Kitchen Maid catalogue, dimensional drawings and prices. Write. WASMUTH-ENDICOTT COMPANY
1312 Snowden Street, Andrews, Indiana

THE DINO FOLD

Charming folding "breakfast nook." Seats four people. Folds up as a unit—on wall, door, or in wall recess.



Lacquered in Olive Green or Mandarin Red with gold striping and antique shading or in Early American Maple, antique shading with green trimming. Also available unfinished.

"Let the Kitchen Maid Be Your Kitchen Aid"

Representatives
in all
Principal Cities



If in Canada, address
Branch office
Waterloo, Ontario

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Masonite
INSULATED

A Masonite protected home at 415 E. 70th St., Kansas City, Mo. Masonite Insulating Lath is used in the two ceilings and in all outside walls.

A BIG Talking Point at LITTLE Extra Cost

YOU have a big talking point when the buildings you put up are Masonite-insulated.

Yet Masonite, because of the material it displaces and the labor it saves, has little effect on the actual cost of construction.

Its construction economy is two-fold. It replaces conventional sheathing and the building paper used with it.

And its uniform, easily handled boards cut labor costs to the bone.

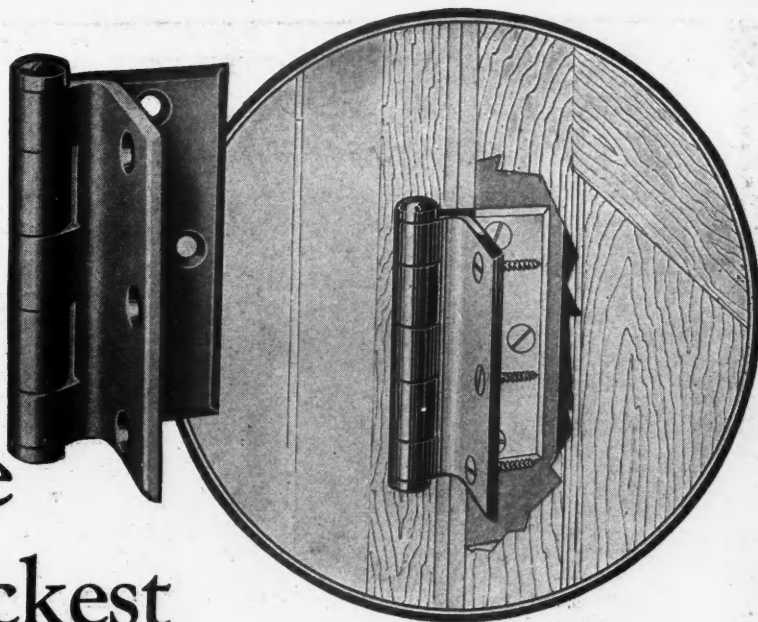
Satisfied home owners are quick to recommend builders who use this permanent insulation. Send TODAY for a sample and the full story of building for profit with Masonite.

MASONITE CORPORATION
Dept. 1128, 111 W. Washington St., Chicago, Ill.
Mills: Laurel, Mississippi

Masonite
STRUCTURAL INSULATION
Made by the makers of MASONITE PRESSWOOD
U.S. PAT. 1,500,000

© M. C.

Stanley Half-Surface Butt No. 161 Plated Finish . . . No. 116 for painting.



The quickest way to hang a door!

No mortising . . . no gauging . . . applied on the surface of the door and jamb

Here is a new design in half-surface butts which greatly shortens the time required to hang a door.

This new Stanley butt eliminates the cutting of mortises. The beveled jamb leaf fits into the conventional opening between door and jamb, and the door leaf is applied on the face of the door.

No gauge is required. Simply fasten the butts to the jamb. Then, turning the surface leaves back out of the way, the door is fitted into the opening. The surface leaves are then turned back against the door, screws

driven in, and the door is hung.

The narrow surface leaf with beveled edges presents a neat appearance on the door.

Butts are furnished in any plated finish under class No. 161, or, with a priming coat for painting under class No. 116. Where it is desired to make the hardware inconspicuous, the latter finish is recommended. Button tips add to the attractive appearance of the butt.

Where economy in installation is desired, use the new Stanley Half-Surface Butt No. 161 or No. 116.

THE STANLEY WORKS · NEW BRITAIN, CONN.

STANLEY HARDWARE

MADE OF STANLEY STEEL

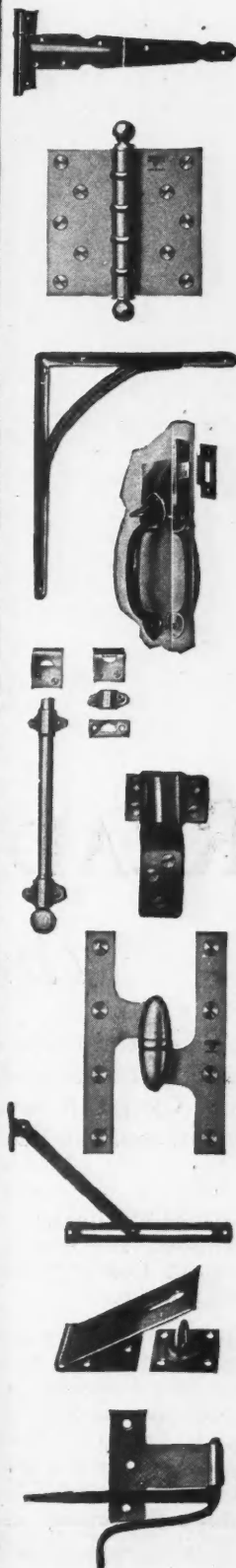


The Stanley Works, New Britain, Conn.
Send me, free of charge, a copy of your Hardware Catalog No. 41m.

Name _____
Address _____
City & State _____
My hardware dealer is _____

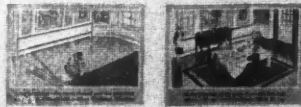


There are thousands of items in the extensive line of Stanley Hardware. You can find just the style and size you need in the Stanley Hardware Catalog No. 41m shown below.



THE SATURDAY EVENING POST

MOST AMAZINGLY SIMPLE WAY of having Oak Floors



CROMAR Oak Flooring is completely finished at the factory: scraped, sanded, filled, twice varnished — and treated to resist moisture. NAIL IT DOWN and USE IT!

INGENIOUS machines, patented, perform at the CROMAR factory all those time-consuming, messy, and irritating operations which make it so discouraging to finish flooring in the home by hand, after it is nailed down.

When the beautifully finished CROMAR strips are nailed down, the floor is ready for use. And — the nailing is done at the speed of a room a day!

CROMAR machines, furthermore, do far more thorough and more uniformly beautiful work than the best trained human hand can do. Yet a CROMAR Floor costs no more than a hand-finished oak floor!

Write for booklets which tell of CROMAR's numerous technical advantages in an interesting, non-technical way.

CROMAR is sold by lumber dealers, but carpenters and contractors install it. Consult any of these for further information. If you have the slightest trouble in getting satisfaction, write us and we shall give your inquiry immediate personal attention.

THE CROMAR COMPANY, WILLIAMSPORT, PA.
Pacific Coast Distributors:
The C. L. THOMPSON Co., 339 Market St., San Francisco, California

CROMAR

FACTORY FINISHED
Oak FLOORING



THE OLD WAY



Send for a free sample of CROMAR, and try the famous CROMAR Hammer Trencher! You will find it saves time and makes the work easy. But the CROMAR method will not hold up — as does an inferior finish.

READ

this Advertisement →

It's a reproduction of the current CROMAR Full Page in The Saturday Evening Post. It tells you how CROMAR saves you time—and money—on six separate flooring processes.

CROMAR Flooring is scraped and sanded, filled and twice varnished, and treated to resist moisture, right in the CROMAR factory. There is not a thing for you to do but nail it down.

That means independence—freedom from the delays and annoyance caused by dependence upon floor finishers. Freedom from inferior quality which you sometimes risk when you sub-let your work. The special CROMAR V-type tongue-and-groove makes it a speed job, too. It fits without "blocking," and does away with "setting" nails.

CROMAR is made from Appalachian White Oak only. This slow-growing, medium-textured oak gives you better grain and figure than the very hard-textured stock. It also takes and better holds a finish.

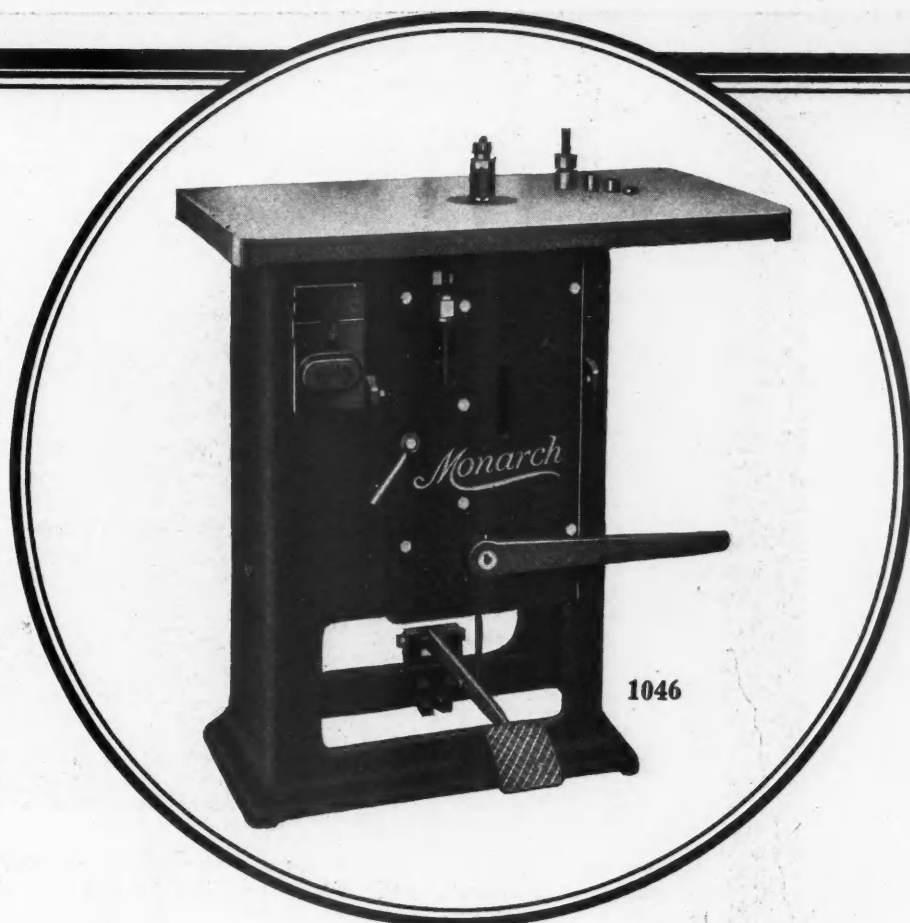
You can handle a whole lot more flooring jobs with the same number of men—and do away with the trouble, and the uncertainty of floor-finishers entirely.

"Carpenters and Contractors install CROMAR." You will notice that phrase in the last paragraph of every CROMAR advertisement in the Post. It is making business for you with more than three million families that read The Saturday Evening Post. Take advantage of it in relaying work.

As for new house construction—well, consider the case of Mr. W. Percival Johnson of Philadelphia. He has a reputation for being one of the city's best and most successful developers. Year after year he has used CROMAR in hundreds of high-grade houses, upstairs and down.

He says CROMAR helps him sell his houses. The quality is the reason.

THE CROMAR COMPANY
WILLIAMSPORT, PA.



Monarch SINGLE SPINDLE SHAPER

New Style, Higher Speed, Greater Efficiency Unusual Value

This new Shaper will perform swiftly . . . smoothly . . . surely . . . any job you give it. Cuts, *without reversing*, against, across, as well as with the grain. The high speed (7,200 r. p. m.) spindle runs in best obtainable ball bearings; spindle may be easily raised or lowered by means of a *foot lever* or *hand lever* to allow

the use of a routing bit; the strong, heavily ribbed table is light enough to be easily detached; motor and belt are completely assembled within the one-piece cast frame; belting direct from motor to spindle obtains high speed without excessive cost or cycle changes. Write for complete specifications and low price.

Exclusive economy and efficiency factors are embodied in these other Monarch machines: woodworkers, mor-

tisers, jointers, bench band and variety saws, swing saws, tilting tables, sanders. Descriptive circulars on request.

AMERICAN SAW MILL MACHINERY CO.

60 Main Street, Hackettstown, N. J.

Manufacturers of a Complete Line of Woodworking and Saw Mill Machinery



AGAINST lacquered walls in red and gold, against the black of the bath niche tiling gleam fixtures in citrus yellow; in this Mandarin bath the decorative art of the east happily meets the plumbing convenience of the west. Into their setting, as though designed for just this room, fit the *Corwith* lavatory, the *Tarnia* bath, the *Corsyn* closet. The simplest cottage bathroom too is lifted out of

the ordinary by Crane fixtures; wherever installed they are always interesting. And they cost no more than substitutes. *New Ideas for Bathrooms* is an illustrated book containing blue prints and full decorating and arrangement information for a series of delightful rooms, with beautiful, reasonably priced Crane materials. This helpful volume will interest you. It will be sent you on request.

150
Pounds Pressure



CRANE



2500
Pounds Pressure

FIXTURES, VALVES, FITTINGS, AND PIPING, FOR DOMESTIC AND INDUSTRIAL USE

Crane Co., General Offices, 836 S. Michigan Ave., Chicago + New York Offices, 23 W. 44th St. + Branches and sales offices in one hundred and seventy cities

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



Make a name for yourself as a store front specialist

HERE is one of the most lucrative fields of building contracting.

Window display is the most important part of a retail merchant's establishment. His profits and volume of business depend entirely upon his facilities for merchandise display.

Take advantage of this situation. Every merchant in your community is open to your solicitation.

Our national advertising of Kawneer Store Fronts is paving the way for your success as a store front specialist.

Other contractors have found it highly profitable—why not you? Just write us today. We'll gladly cooperate with you and help you land any prospect whose name you suggest.

THE Kawneer COMPANY

3326 Front St., NILES, MICHIGAN.



Send Your Book "MODERN STORE FRONTS FOR BETTER DISPLAY" To—

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



**IT
NEVER RAINS
THIS HARD**

no
loss



THERE is little likelihood that the clouds will ever let loose such a torrent upon a cement sack as flows from the hose in this picture. But whether there be sudden storms or other destructive air-moisture, cement packed in Bates Multi-Wall Paper Bags is always dry.

Protected by the 5 separate paper walls of Bates Bags, cement and plaster can safely be delivered any time and stored anywhere. Bates Bags

thus help to keep the job up to schedule and ensure the use of full-strength materials.

These modern, strong and moisture-resisting containers are made by the Bates Valve Bag Corporation, the original and largest manufacturers of multi-wall bags. This company owns and operates 9 modern bag plants in the United States and Canada.

BATES VALVE BAG CORPORATION
General Offices: 35 E. Wacker Drive, Chicago

Specify

BATES *Multi-Wall* **PAPER BAGS**

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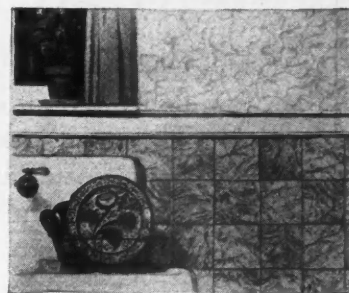
DINING ROOM



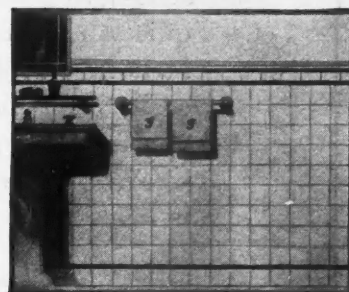
BEDROOM



HALL



KITCHEN



BATHROOM

Sanitas On The Walls Helps To Sell Houses

Bare walls cost you money—they look so cold and uninviting that many a prospective purchaser just takes up your time and says "No!"

Experienced developers and builders have learned that it pays to decorate the interior walls and ceilings with Sanitas, the cleanable cloth wall covering. Sanitas appeals to the prospect, not only because it adds charm to any room, but most people know that Sanitas makes walls an investment instead of an expense. Sanitas can be applied to walls as soon as the plaster is dry. Shrinkage cracks which develop in walls or ceilings cannot show through Sanitas. Dirt and dust can be wiped off with a damp cloth.

There are Sanitas styles for every room in the house. Write on your letterhead for free sample book, containing 150 styles of Sanitas.



**THE STANDARD TEXTILE
PRODUCTS CO.**

320 Broadway Dept. 51 New York

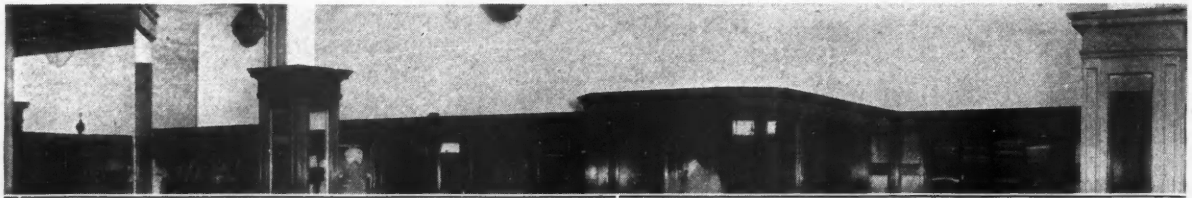


Look for this trademark on the back of the goods

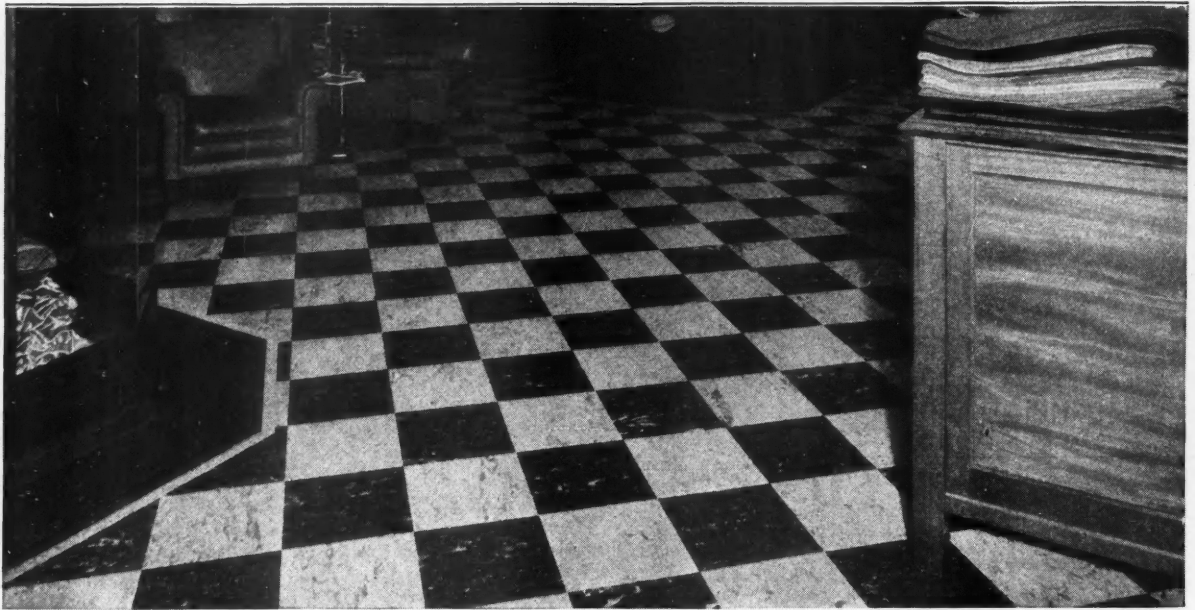


Send for this Sample Book

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



A fine floor gives impetus to sales



Effective use of Goodyear Rubber Tiling in Goddard's store at Lynn, Massachusetts. Installation by Bloom, South & Gurney, Inc., of Boston

Good merchandising begins at the floor. A floor of Goodyear Rubber Tiling will contribute to the inviting effect of any retail store.

This modern material comes in a wide range of colors and patterns to harmonize with any interior scheme. It is agreeable to the eye, quiet and resilient under foot.

It is impervious to moisture and easily kept clean. It offers great resistance to the hardest kind of wear. Quality considered, the cost is low.

Because of these good qualities, Goodyear Rubber Tiling is also in wide demand for churches, clubs, hospitals and hotels. It is equally appropriate and desirable for the better class of homes, with a special adaptability to bathroom and kitchen.

Choose from fourteen solid colors, and many attractive two- and three-color combinations. Complete architectural data gladly forwarded upon request. Address Goodyear, Akron, Ohio, or Los Angeles, Calif.

The Greatest Name in Rubber

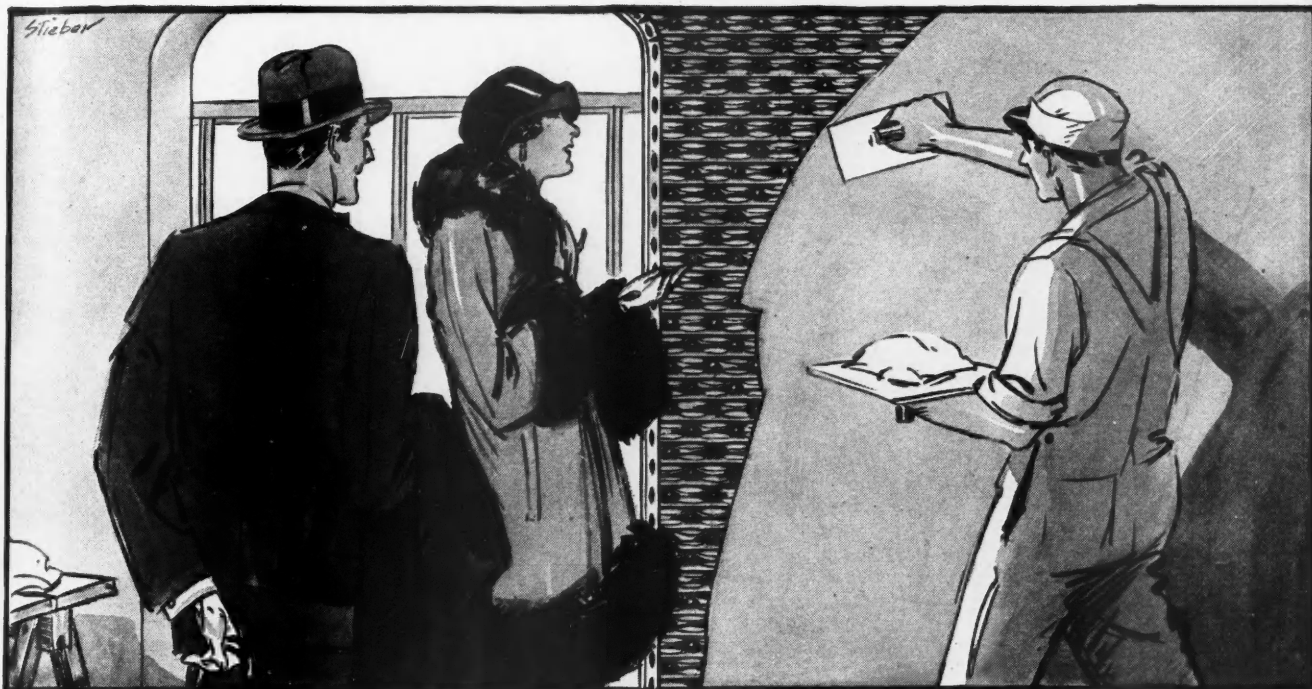
GOODYEAR

RUBBER TILING

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Copyright 1928, by The Goodyear Tire & Rubber Co., Inc.

"Now We Know That Our Walls and Ceilings *Will Be Fire-Safe*"



ARCH LATH is Practically a Solid Sheet of Steel!

Arch Lath is the extra margin of safety in wall and ceiling construction—and the cost of this adequate protection is no more than where flimsy, inflammable material is used.

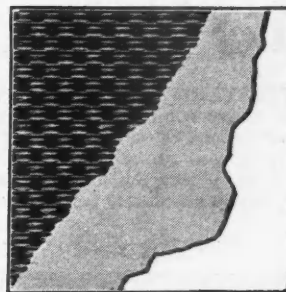
Arch Lath appeals to architect and owner because it provides adequate protection against fire. Arch Lath is practically a solid sheet of steel. It is a fire-safe barrier of the most certain kind. It makes walls and ceilings more substantial, more secure. It does not cost any more than inflammable material which offers little resistance to cracking.

The favorable cost of Arch Lath is the result of a distinctive arch design which prevents plaster waste. Only the correct amount of plaster to effect perfect anchorage is permitted to squeeze through the open-

ings. There is no piling up of plaster between walls.

Because it is rigid, in fact *extra rigid*, Arch Lath makes a model plaster base. It takes the force of the trowel without sagging and assists both rapid and efficient workmanship. The rigidity of Arch Lath is also a factor in speeding up application and keeping down the cost.

Space will not permit a complete review of the many features of Arch Lath. We invite you to send for sample of Arch Lath and detailed information. Write to us today.



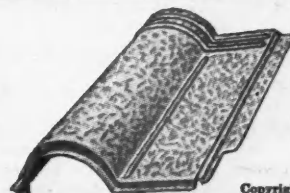
WHEELING CORRUGATING COMPANY, Wheeling, West Virginia
 Branches: New York, Philadelphia, Chicago, Minneapolis, St. Louis, Kansas City, Chattanooga,
 Richmond, Des Moines, Columbus, Ohio



For Weather-proof Roofs of Distinction—
 Wheeling Spanish Tile

Wheeling Spanish Tile Roofs have all the character and charm of old Spain. The most artistic roof covering manufactured.
 Wheeling Spanish Tile is low in cost, durable, leak-proof and lightning-proof.

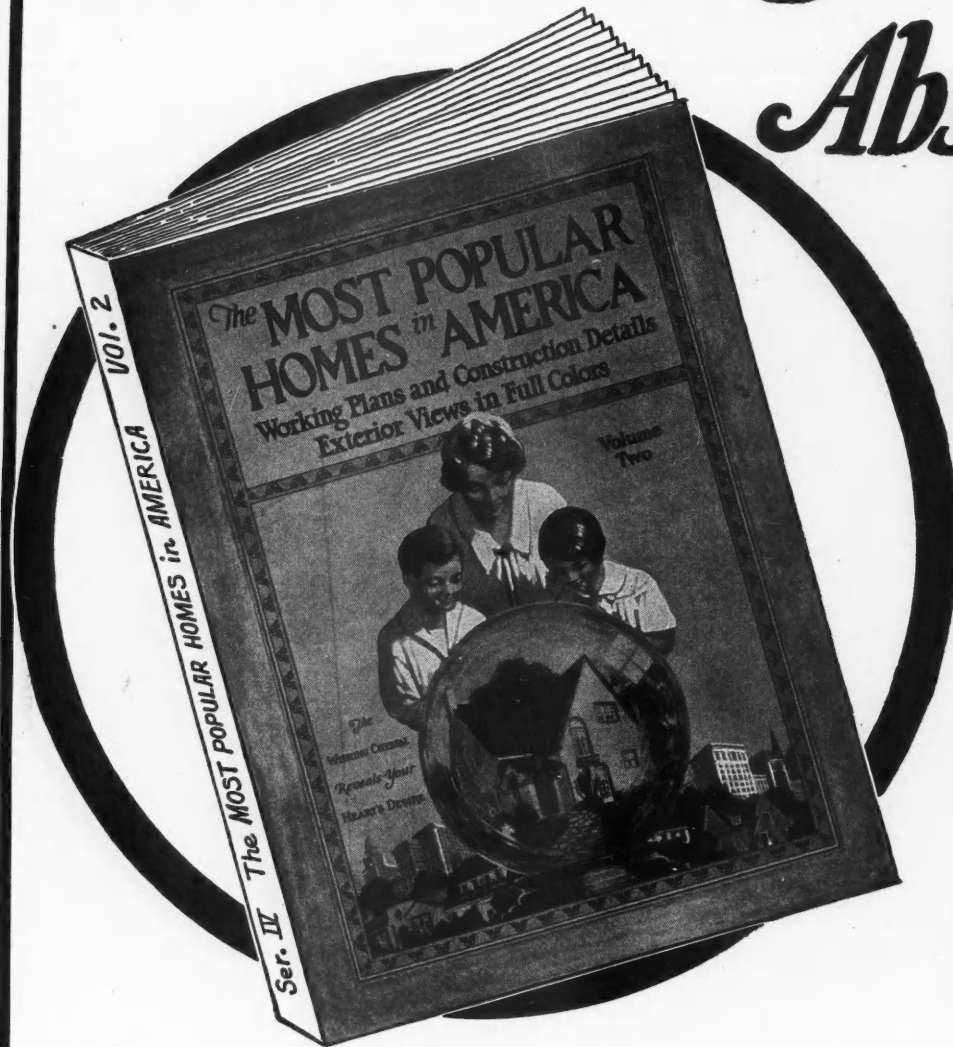
Write for full information



Copyright 1928

You Get This Big New Book

Absolutely Free!



“Most Popular Homes In America —VOLUME TWO”

is a companion book to *Volume One*, which has had a phenomenal sale in the past year. *Volume One* has been repeatedly called the most beautiful and useful home design book ever printed.

The new book, “*Volume Two*”, is even more beautiful in appearance and contains 20 more full color plates than *Volume One*. If you already have *Volume One*, you will certainly be delighted with *Volume Two*.

We have on hand only a limited number of this new book—they are going rapidly. If you want yours, send for it now, *today*, before the supply is exhausted.

15 Sets of Complete Building Plans

FIFTEEN of the home designs in this wonderful book have complete working drawings, scale one-eighth inch and larger. You can build direct from these drawings, thus giving you an architectural service worth a neat sum of money, yet we include them in this wonderful book and send it to you absolutely free of cost.

These working drawings are only one of the many valuable features of this remarkable book. In addition, there are *Twenty Pages* of designs printed in four colors. Many pages of high-class half-tones reproduce actual photographs of beautiful interiors, furnishings, modern home conveniences, etc., etc.

Clip and Mail This Coupon—NOW!

THE AMERICAN BUILDER A.B. 12-28
1827 Prairie Avenue, Chicago, Ill., 1928

Enclosed find \$2.00 for which ENTER my subscription to The American Builder for one year and send me free and postpaid a copy of your book “MOST POPULAR HOMES IN AMERICA”—Vol. 2. RENEW

NAME.....

ADDRESS.....

POST OFFICE.....STATE.....

My occupation is (Check Only One)
 Dealer Builder Architect Real Estate Miscellaneous

How to Get Your Free Book

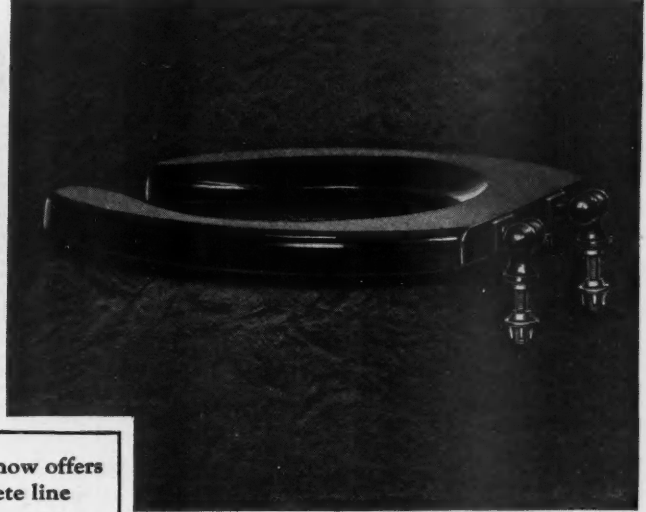
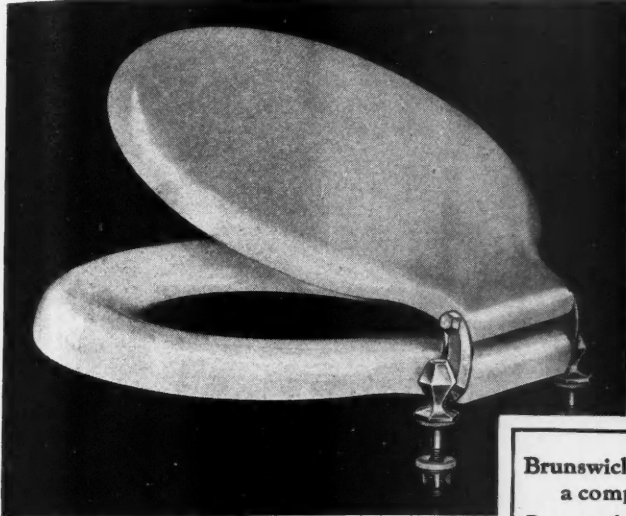
This useful and handsome book will be sent you Free and Postpaid with a new or renewal subscription to “*American Builder*” at the regular subscription rate, \$2.00 for one year. \$2.00 pays for the subscription—the book is a gift.

The subscription may be new or renewal, or it can be an extension of present subscription, but in all cases must be sent direct to “*American Builder*” and be accompanied by check, money order or currency for \$2.00. Subscriptions sent in any other way will not entitle sender to free book.

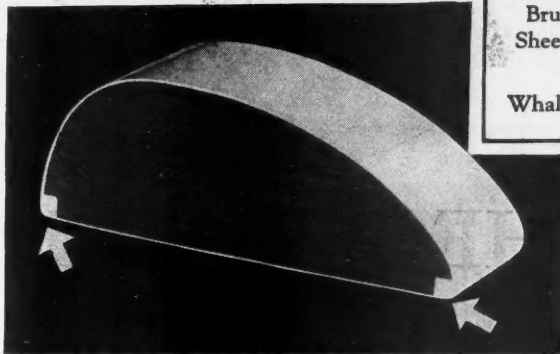
OFFER GOOD IN U. S. AND CANADA
Add \$2.00 to Foreign Countries

Exclusive Features

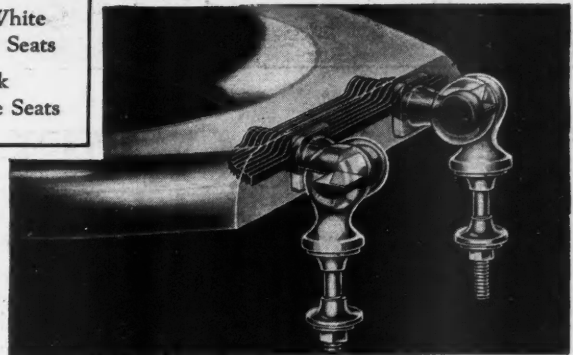
found only in the Brunswick Closet Seats



Brunswick now offers
a complete line
Brunswick Wood Seats
Brunswick White
Sheet-covered Seats
Brunswick
Whale-bone-ite Seats



**Reinforced Cushion Edge on
Brunswick White Seat**
Makes what has been the weakest part
of a sheet-covered seat the strongest!



Hinge on the Whale-bone-ite Seat
Makes the hinge of this finest of closet seats as
permanent and indestructible as the seat itself.

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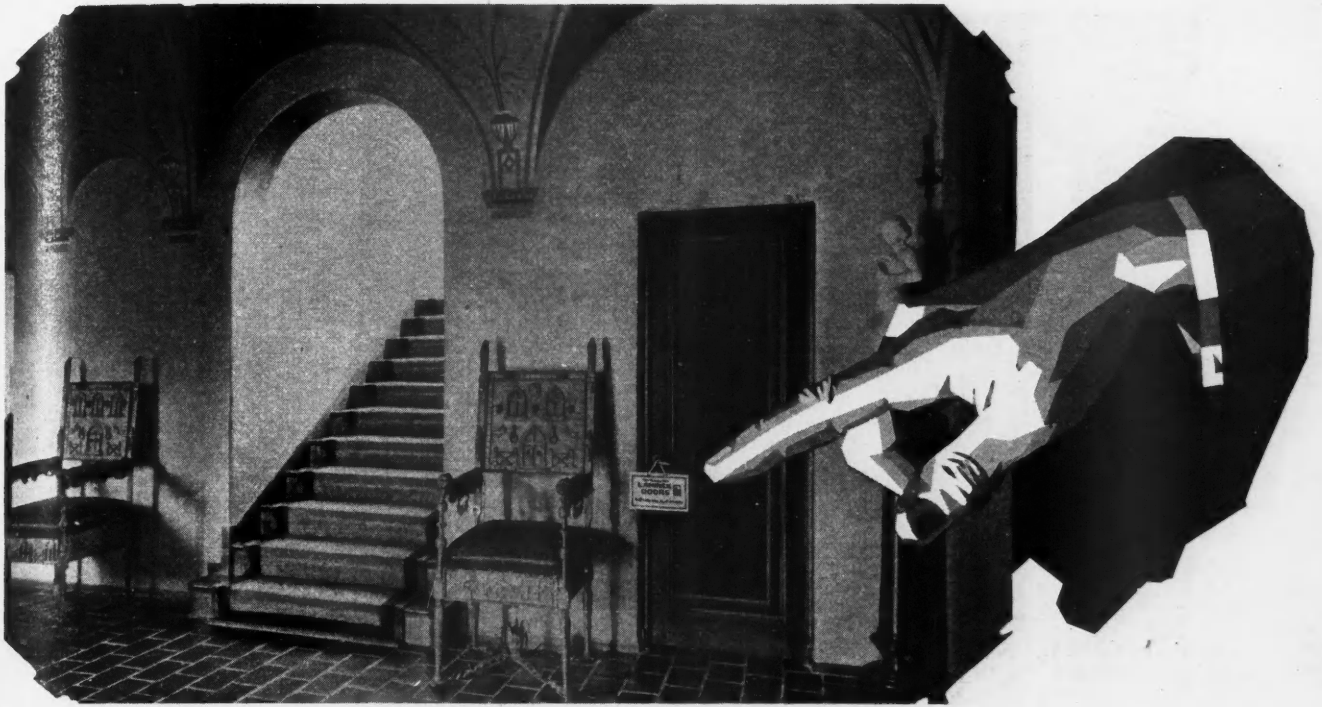
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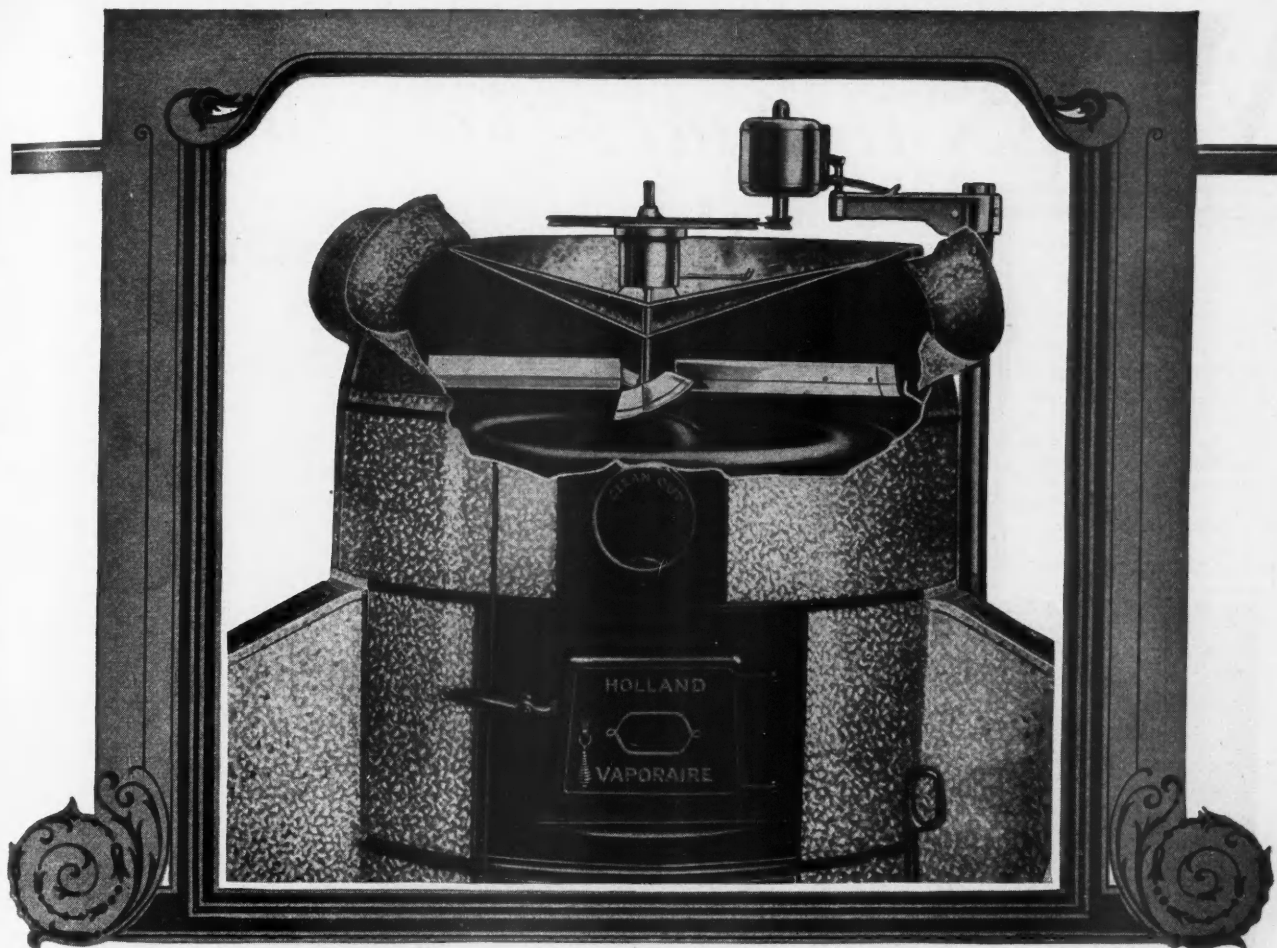
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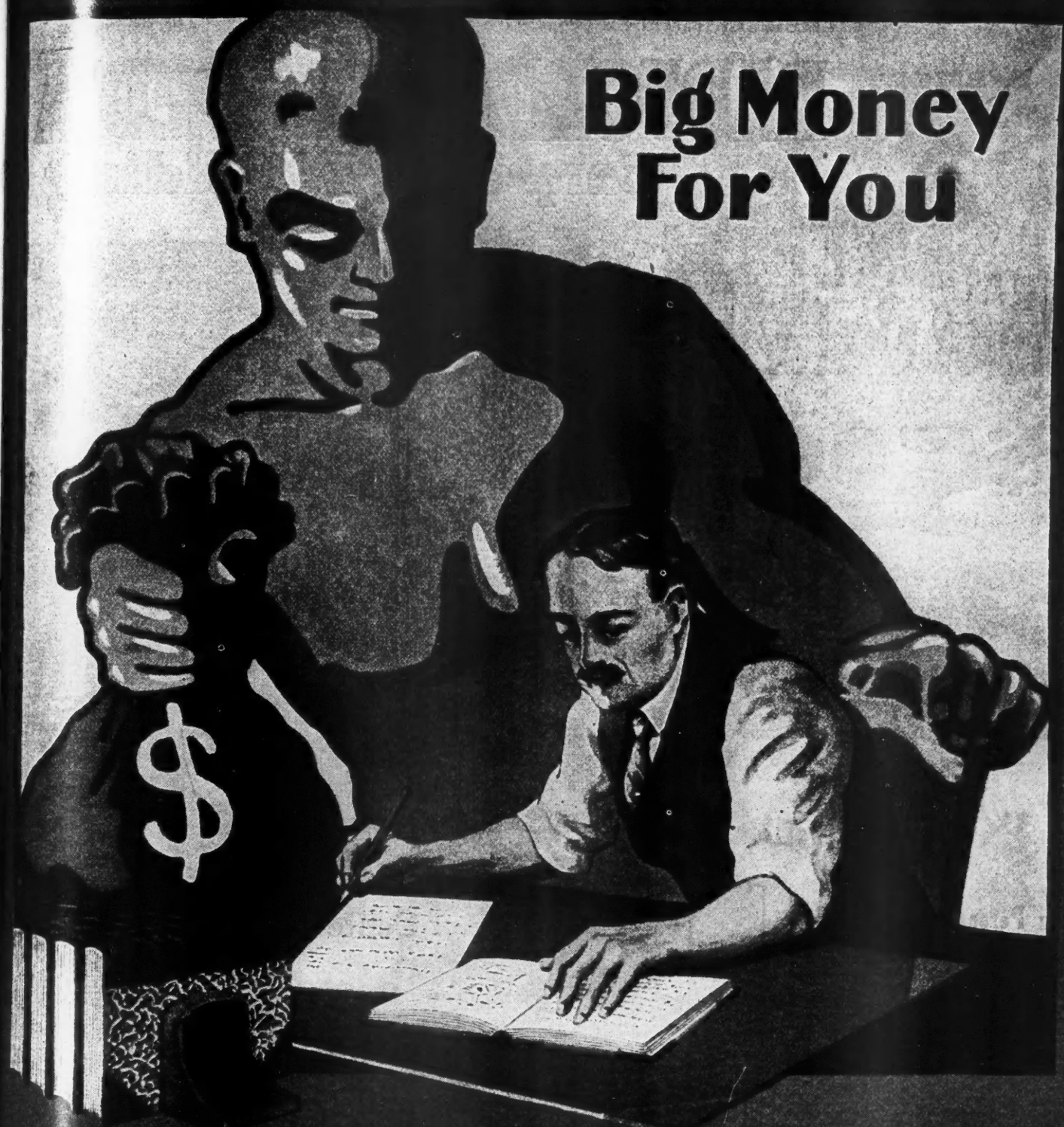
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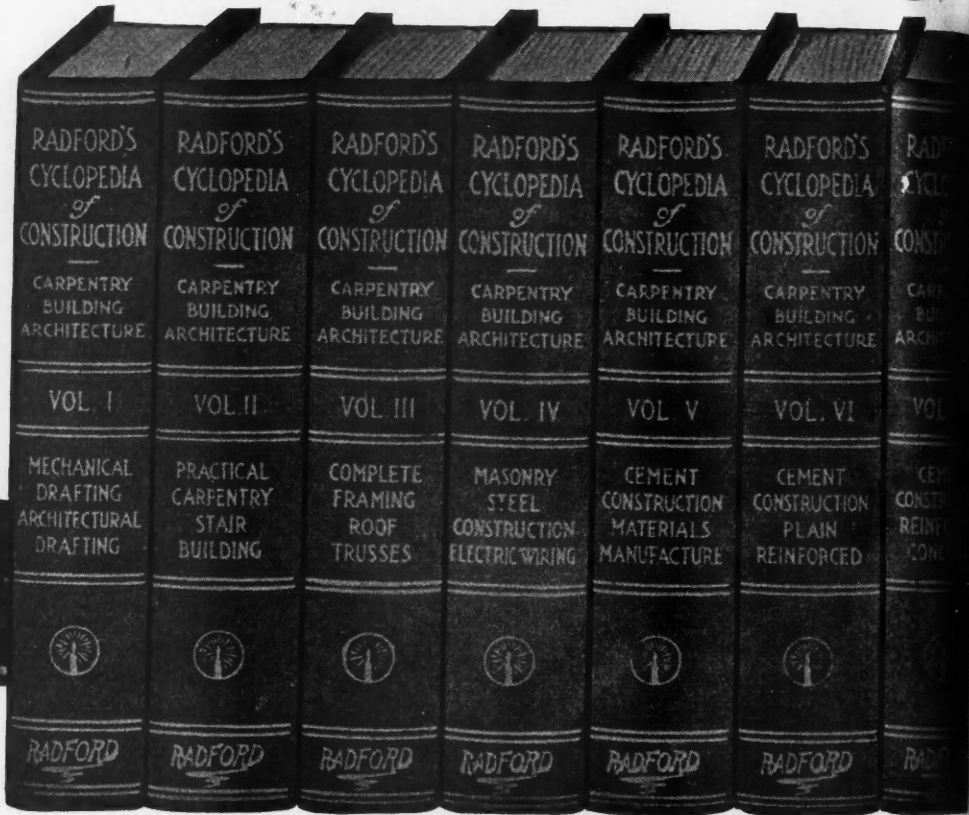
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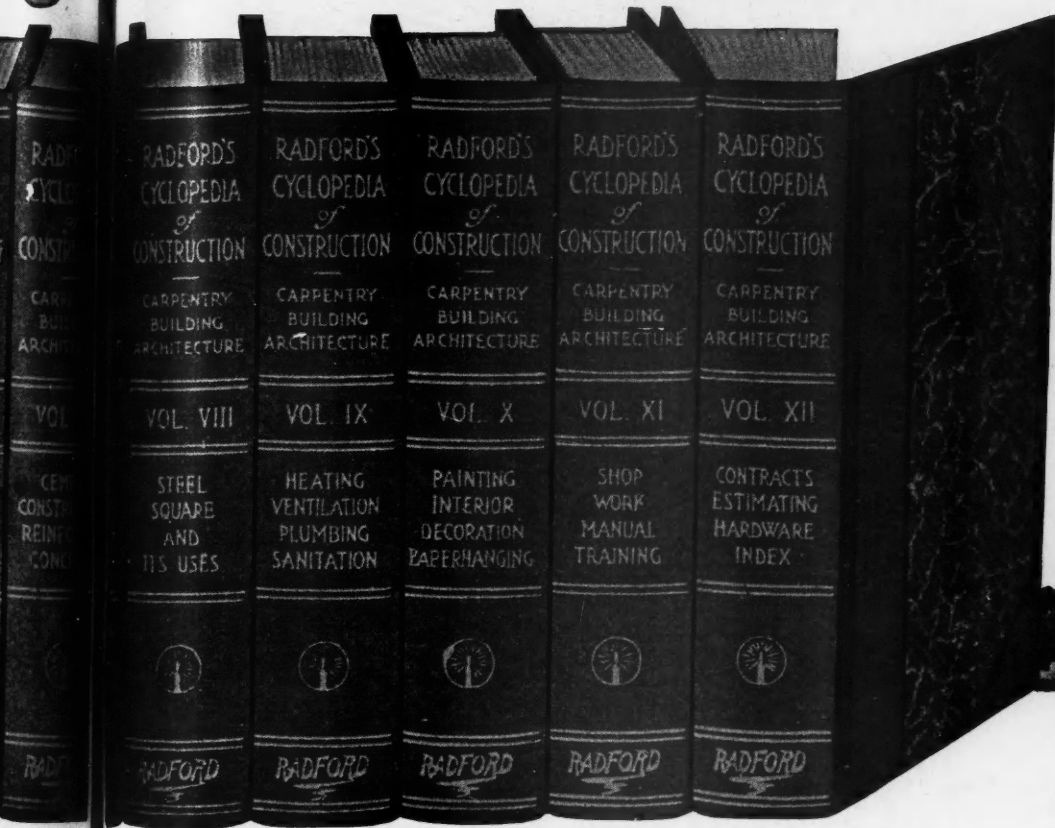


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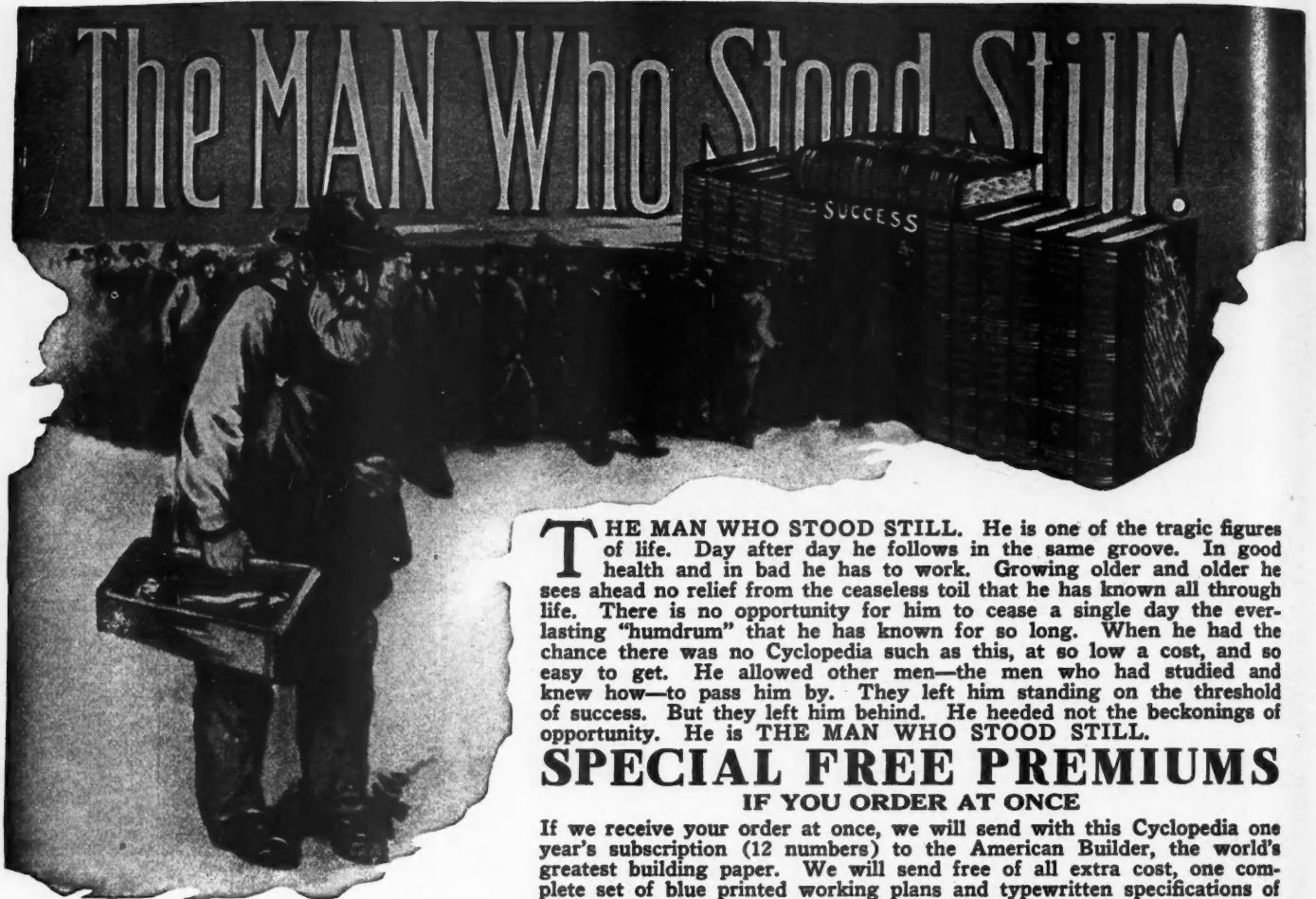
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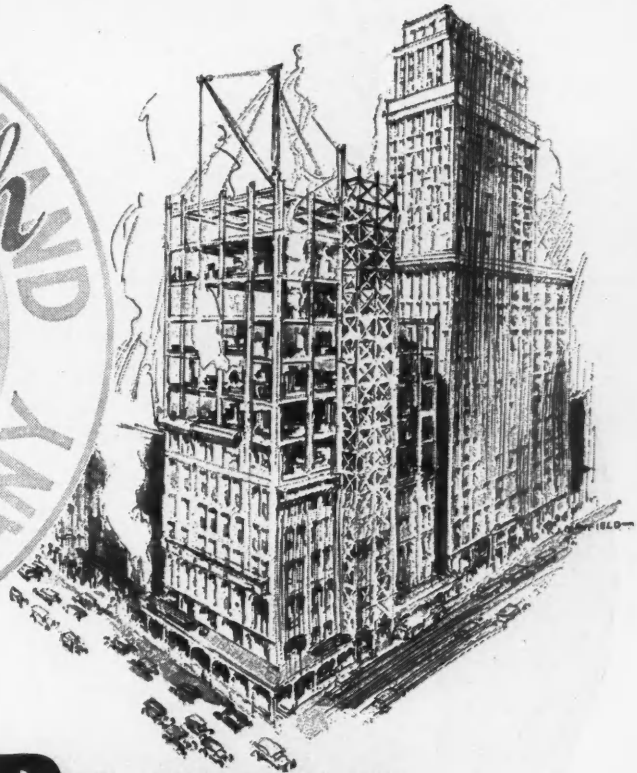
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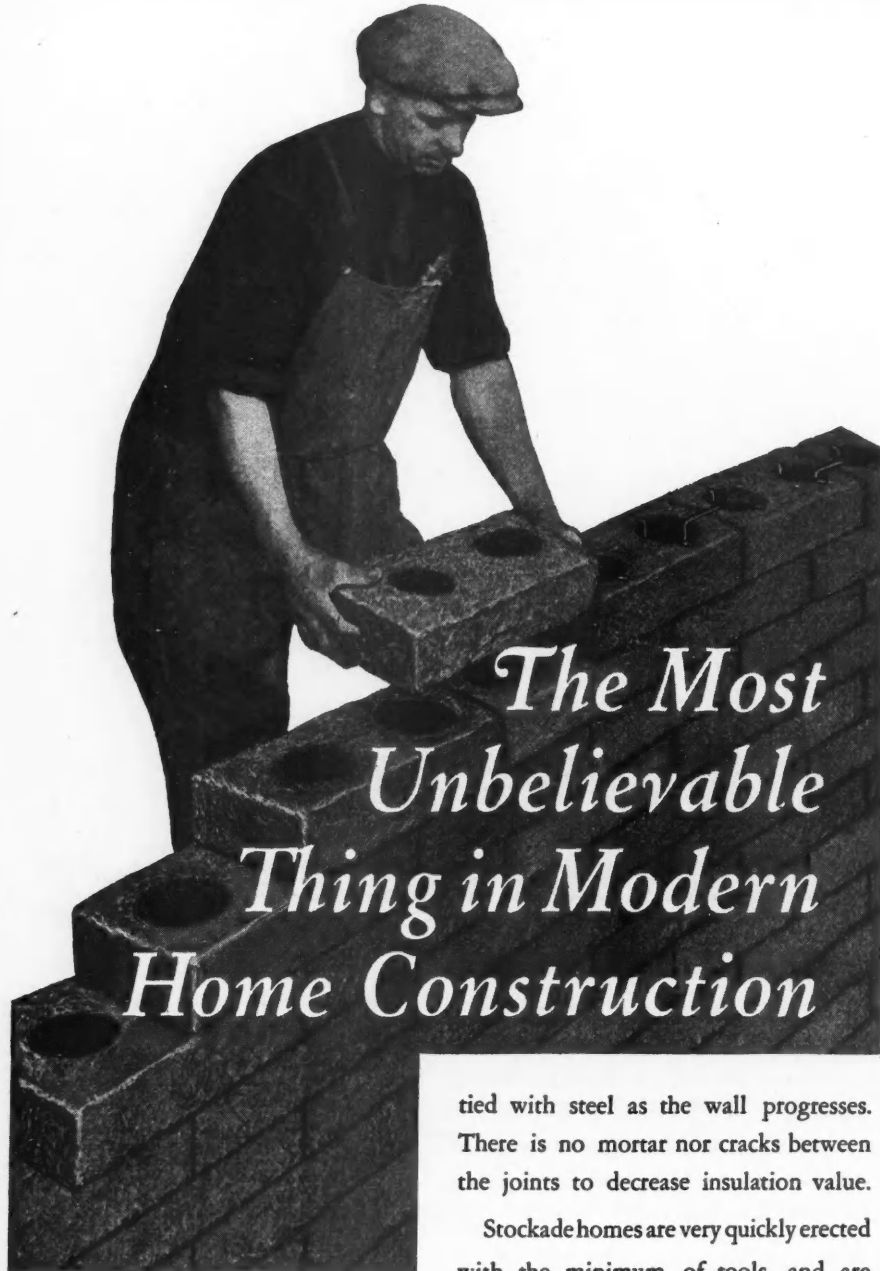
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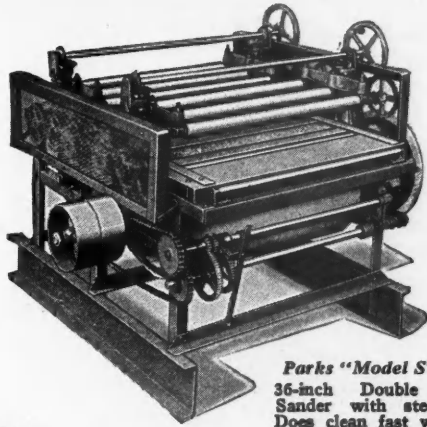
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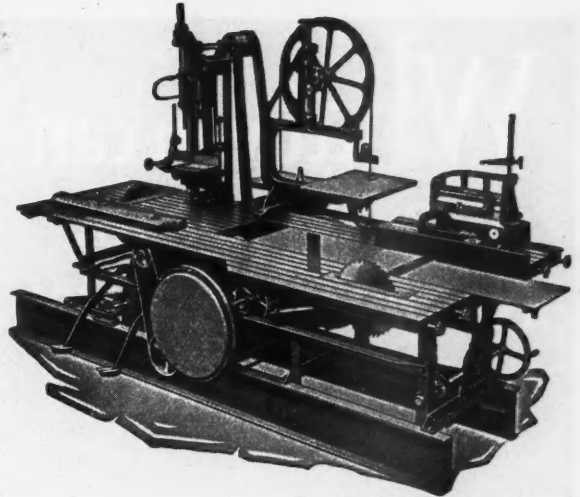
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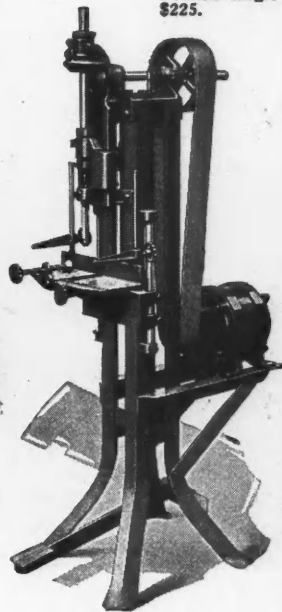
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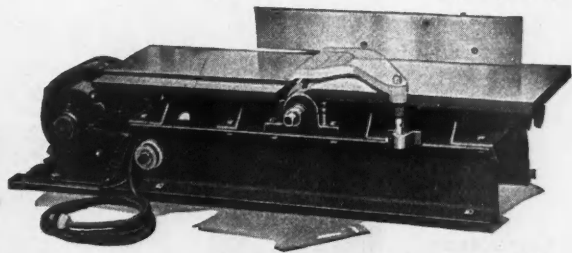
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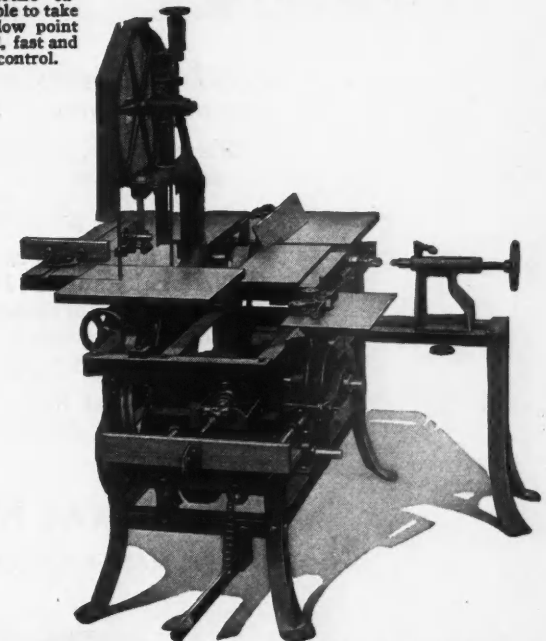
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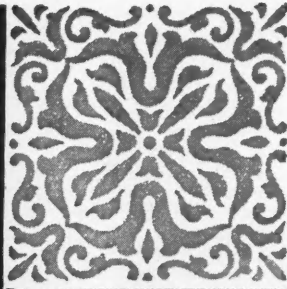
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What you can expect from the National Radiator Corporation



*Corcoran Courts Apartments, Washington, D. C.
Architect: Harvey Warwick.
Builder: The Cafritz Construction Company.*

A COMPREHENSIVE line of outstanding and exceptional products that will efficiently meet your every heating need. Performance, conclusively demonstrated over a period of years, on diversified heating applications of every character. Service that gives new meaning to a much-abused word. These things you can expect, and will receive, when you use National Radiator Products. Products which comprise the outstanding achievements of six great companies, backed today by a united responsibility, and widely distributed through a great chain of plants, offices and warehouses. In "National Radiator Products," you can expect quality, service, and satisfaction for your customers, and yourself.



NATIONAL RADIATOR CORPORATION

MANUFACTURER OF RADIATORS AND BOILERS



Nine Plants devoted to National Service thro. sb these Branch Offices and Warehouses:

Baltimore, Md.—2600-2622 Matthews St.
Boston, Mass.—93-97 Oliver St.
Buffalo, N. Y.—259-265 Delaware Ave.
Chicago, Ill.—2445 N. Keeler Ave.
Cleveland, Ohio—935 E. 63rd St.
Cincinnati, Ohio—Spring Grove & Elmira Ave.
Indianapolis, Ind.—431 W. Georgia St.
Johnstown, Pa.—221 Central Ave.
Milwaukee, Wis.—124-130 Jefferson St.
New York, N. Y.—55 W. 42nd St.
Omaha, Neb.—108-112 S. Tenth St.
Philadelphia, Pa.—121 N. Broad St.
Pittsburgh, Pa.—1509 Arrott Bldg.
Richmond, Va.—3032 Norfolk St.
St. Louis, Mo.—1042 Central Industrial Ave.
Washington, D. C.—2205 Fifth St., N. E.

**“A
REAL JOB,
FROM RIDGE TO BASEMENT!”**



When you stand off from the finished job and survey it with the critical gaze of long building experience, it's a great feeling, isn't it, to be able to say: "A *real* job from ridge to basement."

A real job, not because of superficial good looks . . . *that* might hide a multitude of deficiencies . . . but a real job because of the enduring materials put into it—materials which will fulfill all their intended functions year after year, decade after decade.

Good lumber . . . good brick . . . *brass, copper and bronze* wherever a non-corrosive, enduring metal is needed.

Chase Copper Gutters, Downspouts, Flashings, Chase "Alpha Brass Pipe", Chase Bronze and Copper Screens on a building, establish at once its sound character—make selling easier for the investment builder, and guarantee satisfaction to the ultimate owner.

Look for the new Chase-mark, shown below; the distinctive mark of an old firm which you know well. It identifies *genuine* Chase products.

CHASE BRASS AND COPPER CO.
INCORPORATED
WATERBURY · CONNECTICUT

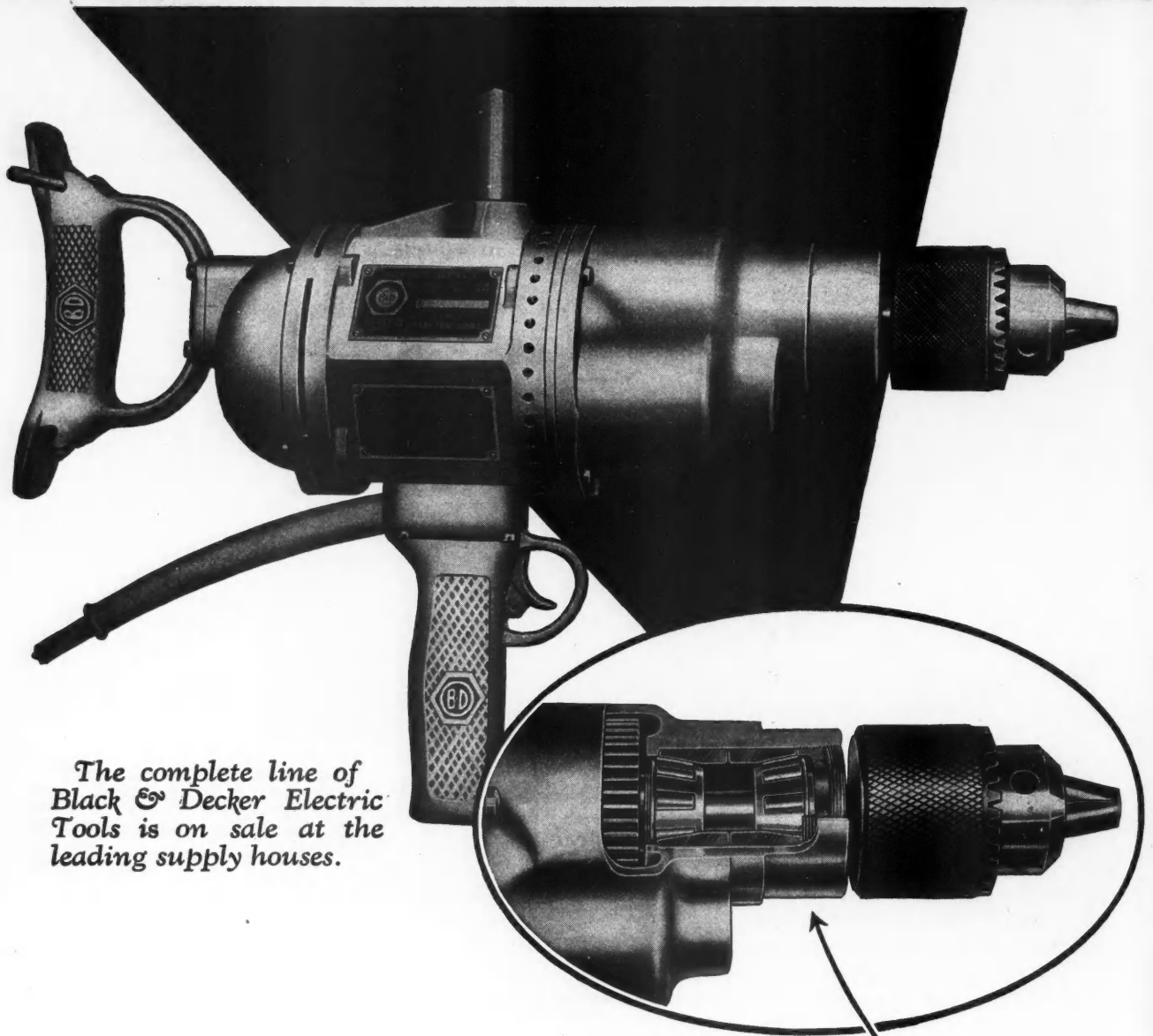


Service? . . . Thirteen Chase Warehouses throughout the country mean that there's a Chase warehouse near you!

New York · Boston · Newark · Philadelphia · Baltimore · Cincinnati · Cleveland
Detroit · Chicago · St Louis · New Orleans · Los Angeles · San Francisco

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

BUILT TO ENDURE



The complete line of Black & Decker Electric Tools is on sale at the leading supply houses.

The Black & Decker $\frac{3}{4}$ " Heavy Duty Electric Drill is the culmination of years of experience in designing and building high quality electric tools.

The above illustration showing a detail of the chuck spindle bearing construction is an indication of the engineering principles used throughout this Drill, justifying its ability to endure hard and continuous usage over a long period of time.

The Black & Decker name on an electric tool is your guarantee of quality.

Taper roller bearings are used on the chuck spindle. These bearings very adequately take care of side and end thrusts and will give excellent service throughout the life of the Drill.

BLACK & DECKER

TOWSON, MD., U. S. A.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



WILL YOUR SHIP COME IN *in 1929?*

or will you struggle again with destructive competition?

Their ships are in!

There's a new year coming. Will it see you on the road to manufacturing independence? Or will you go on with the same old story of fighting bitterly for business in a field where conditions are getting more difficult every day?



"Give me non-competitive manufacturing"—says H. W. Sewall

"I want certainties, not gambles in my business," says Sewall. "I'd rather be the man who makes building materials than the man who puts them together. I like to know where I am at. It's great to know that if you do so much business you make a certain, definite

profit. That's a whole lot better than taking a loss on one contract, making something on the next and never knowing until the end of the year whether you've made something for yourself or worked darn hard for the benefit of the other fellow."

"I was in banking before I started manufacturing Duntile. Maybe that's why I like a sure thing rather than a speculation. Anyway I've found in Duntile the manufacturing opportunity I wanted. And I can tell any man who is shopping around for a better opportunity that Duntile is a big enough proposition for any man's ambitions. And it's the only way I know of to get into the manufacturing game with limited capital."



GEORGE D. FISTER
President of the Duntile Manufacturing & Supply Company, Allentown, Pa. This plant is running overtime to keep up with demand. Eighty per cent of volume is in mat-glazed Duntile which yields an extra profit margin from the mat-glazing process.



JOHN L. STRANDBERG
of Strandberg & Swanson, Kansas City. In three years, they multiplied their original investment in Duntile thirty-three times. They recently erected a new modern factory from earnings.



FRANK K. COFFEEN
Frank K. Coffeen and his partner, Frank F. Thompson, contractors of LaPorte, Indiana, went into Duntile eighteen months ago. In that period their business has yielded them a good income, paid for their machinery and they have now completed the purchase of a new manufacturing site for large scale production.

How Does The Year Stack Up For You ?

Perhaps you, like many others, find competition in building growing keener all the time. Find it harder to show profits. Take losses too often. If this year has not advanced your financial position, why not take a good look at a business which has recruited scores of men from the building trades and put them on the road to manufacturing independence.

Duntile today stands on a basis of proven accomplishment. Learn why it builds better buildings for less. About its wonderful mat-glazed colors. Its universal uses. How men who manufacture it enjoy a steady, year around manufacturing business in protected territories. Examine the records. Weigh the evidence for yourself. But don't let another year come upon you without at least getting the up-to-date facts about Duntile. Use the coupon right now.

W. E. DUNN MANUFACTURING CO.

415 W. 23rd Street

HOLLAND, MICHIGAN

Get into manufacturing -Make 1929 profitable This Book Tells How



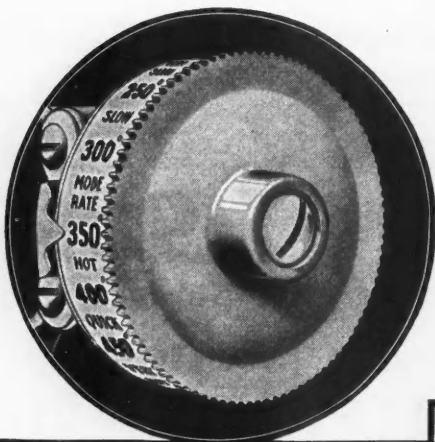
W. E. DUNN MFG. CO.
415 W. 23rd St., Holland, Mich.

Send me your latest edition of "Basic Facts" describing the non-competitive basis of Duntile manufacturing and explaining how I can manufacture Duntile in a plant of my own at a profit of 30 to 60 per cent. Include cost comparisons showing how Duntile makes possible masonry construction at price of frame.

Name.....
Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Unless the Gas Range has a RED WHEEL it is NOT a LORAIN



Do Women Like Your Kitchen Equipment?

(Above at right) Boulevard View Apartments, 2374 Euclid Heights Boulevard, Cleveland, Ohio. Architect, Max Weiss, Cleveland; Builder and Owner, I. Koslen, Cleveland.

(At right) Representative Kitchen in Boulevard View Apartments showing New Process Red Wheel Gas Range as installed.



ARE THE KITCHENS in the structures you build so equipped that they make instant appeal to the modern housewife? The modern housewife, you know, insists on cookery equipment that enables her to cook and bake via the *Time and Temperature Method*.

If your kitchen is not thus equipped, the prospective tenant is very apt to look elsewhere in order to find a kitchen that suits her ideas. And—nine times out of ten she will insist that the kitchen have a gas range with the Lorain (Red Wheel) Oven Heat Regulator.

As a case in point, the first woman to seek an apartment in the Boulevard View Apartments, Cleveland, Ohio, (shown above) insisted that she would have nothing but a Red Wheel Gas Range in her kitchen. Her request was granted—and the remaining suites were equipped with Red Wheel Gas Ranges.

The Lorain Red Wheel is the *original* oven heat regulator. It is the oven heat regulator that has been continually advertised for nearly ten years in the leading national magazines for women. It is the one device of its kind that is most widely and most favorably known among women.

These famous makes of gas ranges are equipped with the Red Wheel: Reliable, New Process, Dangler, Clark Jewel, Quick Meal and Direct Action. These Red Wheel Gas Ranges are used for cookery instruction in over 2600 leading schools and colleges. Each make offers every approved size, style and finish suitable for homes, apartments, schools, churches or other public structures where cooking is done.

For specific data see Sweet's Catalog, 23rd Edition, Pages C4009-C4018 inclusive. Catalogs and other data gladly sent upon request.

AMERICAN STOVE COMPANY, 233 Chouteau Avenue, St. Louis, Mo.
LARGEST MAKERS OF GAS RANGES IN THE WORLD

LORAIN RED WHEEL

PURE LEAD - *most beautiful and enduring of materials - is now available for Metalwork in Inexpensive and Workable form*

PROFIT by this DISCOVERY!

FOR years builders and sheet metal men have looked on pure lead as the ideal sheet for building metalwork—provided it could be amalgamated to a stronger and more workable base of steel. The means to secure a firm amalgamation were discovered in this company's Canton, Ohio, plant and put to commercial use as "Superior Lead-Sealed" sheets.

The Best Test

As roofing and siding on industrial plants, exposed to strong smoke, acids and salt air, Lead-Sealed has withstood years of the most severe test that metalwork can undergo. Sealed between heavy surfaces of imperishable lead, it shows no signs of deteriorating where more costly metal sheets have proved unsatisfactory.

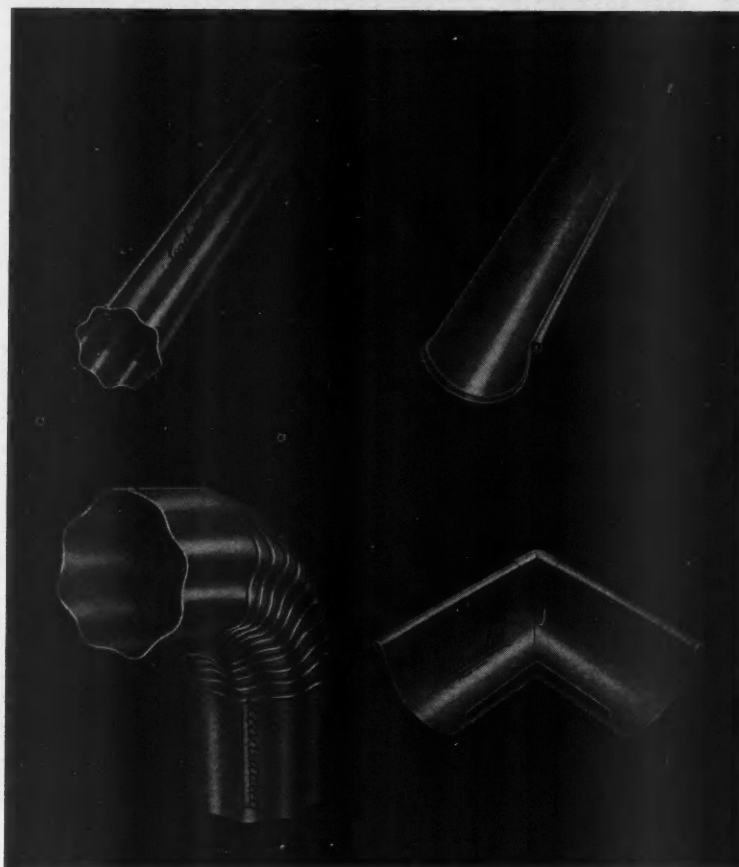
An additional investment of about ten dollars will equip the average house with Superior Lead-Sealed metalwork. Being soft, level and of high ductility, it is readily formed into flash-

ing, conductor pipe, eaves-trough, gutters, etc., without breaking or peeling of the protective lead. Any competent sheet metal worker can install it.

Adds Known Value

The increased value to your

building far exceeds the cost of using Lead-Sealed metalwork. Send for and examine a sample. We will gladly furnish you with complete information including costs, availability and use. Pin the coupon to your letterhead and mail, today.



THE SUPERIOR SHEET STEEL CO., Canton, O., Division of Continental Steel Corp.
—Makers of *Super-Metal*, *Galvannealed*, Galvanized and Long Terne Sheets



Two surfaces of Pure Lead seal a core of special analysis, copper content steel.

Superior
Lead-sealed

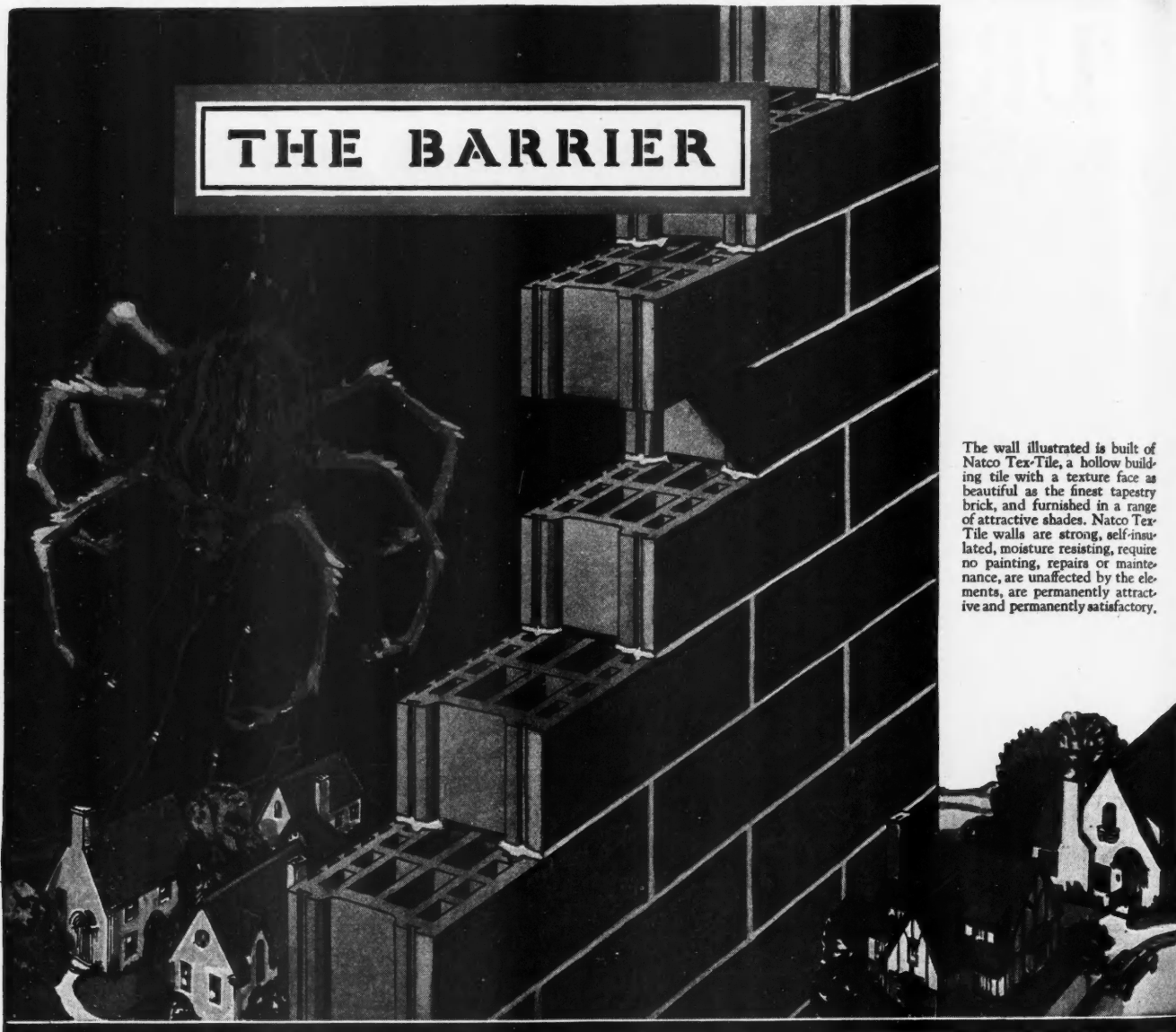
The Superior Sheet Steel Co., Canton, O., Division of Continental Steel Corp.
—Makers of Super-Metal, Galvannealed, Galvanized and Long Terne Sheets.

Please send sample and detailed information on Superior Lead-Sealed.

Name.....

Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



The wall illustrated is built of Natco Tex-Tile, a hollow building tile with a texture face as beautiful as the finest tapestry brick, and furnished in a range of attractive shades. Natco Tex-Tile walls are strong, self-insulated, moisture resisting, require no painting, repairs or maintenance, are unaffected by the elements, are permanently attractive and permanently satisfactory.

NATCO SAVES HOMES FROM SLOW TURNOVER

HOMES constructed of Natco Hollow Building Tile have added qualities that move them faster—make them more profitable.

Stuccoed homes with walls of Natco Double Shell Load Bearing Tile are cooler in summer—warmer in winter—drier the year 'round. Ever free of the dangers of rust, rot, and warping; the tile holds the stucco permanently.

Brick faced homes with walls of Natco Header Backer have all these same insulating qualities; and they are permanently, intimately bonded.

Finished face homes built of Natco Tex-Tile and Natco Combed Face have insulating value—strength—fire safety—and a charm and attractiveness that will increase with the years; a freedom from maintenance that is a powerful appeal to any buyer.

Each member of the Complete Natco Line of Hollow Building Tile fills some building need. Makes the structure where it is used more comfortable—economical—permanently satisfactory.

NATIONAL FIRE-PROOFING-COMPANY

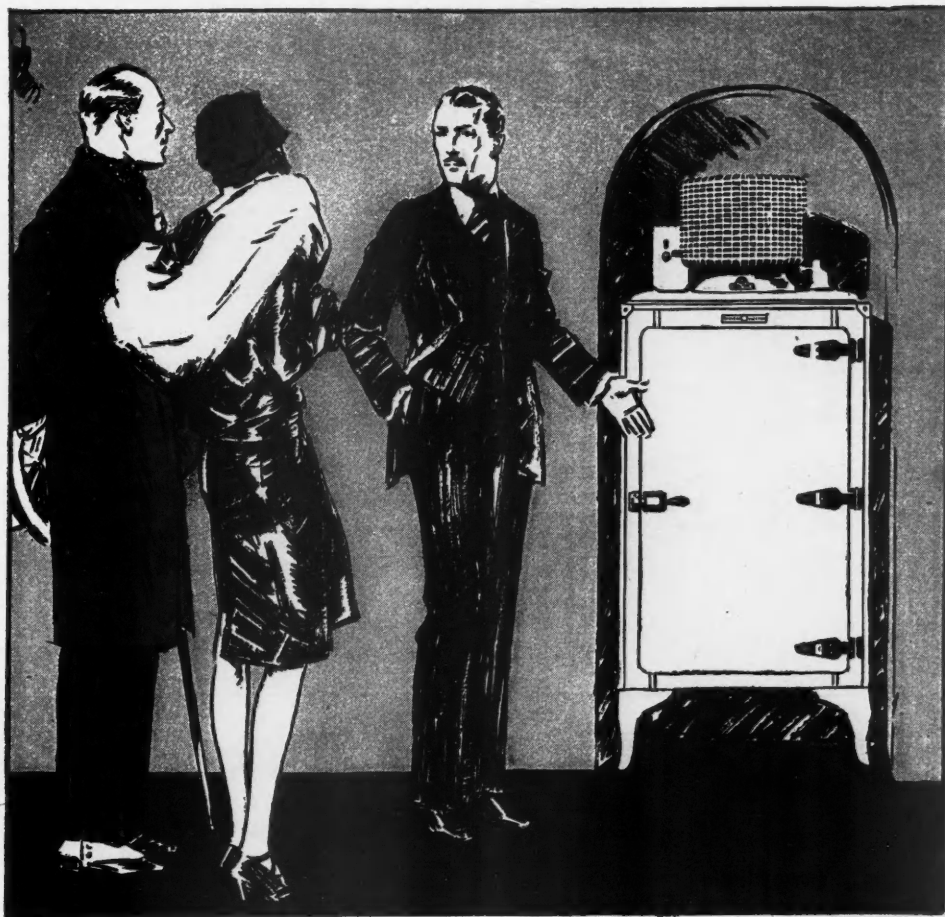
General Offices: Fulton Building, Pittsburgh, Pa.
Branch Offices: New York, Flatiron Bldg; Chicago, Builders Bldg; Philadelphia, Land Title Bldg; Boston, Textile Bldg.
In Canada: National Fire Proofing Co. of Canada, Ltd., Toronto, Ontario.

NATCO

NATCO
 THE COMPLETE LINE of
 HOLLOW BUILDING TILE

HOLLOW BUILDING TILE

Thanks to the builder!



YES, the man who planned and erected this building persuaded me to put a General Electric Refrigerator in each apartment. He designed the kitchen spaces to fit.

"I thank him for his suggestion because it has so greatly speeded up the renting of the apartments. And it has caused much favorable comment from the tenants who are already in. They speak of these quiet, worry-free, automatic refrigerators as a special comfort.

"They are supremely simple and easy to install. All their mechanism is sealed in an air-tight steel casing. They never need oiling. They operate with unusual quietness—and use little current.

"One of the things which greatly influenced my choice was the fact that these refrigerators are made and guaranteed by General Electric."

If you want complete specifications of the various models, just ask us for Catalog AB-12. Or for this information in a briefer form, see pages C 3056-9 in Sweets' Architectural Catalog.

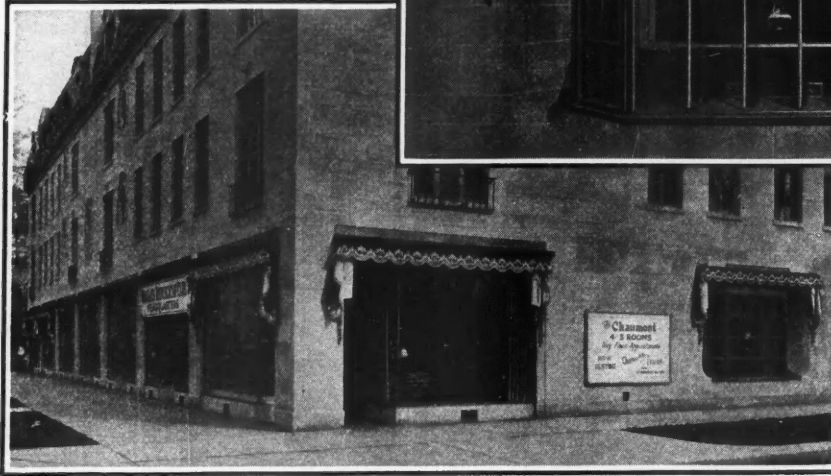
GENERAL ELECTRIC Refrigerator

"Makes it Safe to be Hungry"

ELECTRIC REFRIGERATION DEPARTMENT · OF GENERAL ELECTRIC COMPANY · HANNA BUILDING · CLEVELAND, OHIO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Thielbar and Fugard, Architects



Store Front Bronze

These pictures again tell the story of what can be readily accomplished with our standard sections of Extruded and Cast Bronze, ready for immediate delivery.

All the store fronts in this building were fabricated from our standard shapes. The entablature assembly of the small bay window consists of an Extruded Architrave and cornice with a cast bronze frieze and cartouche.

The assemblies on the main store front were accomplished with Extruded Bronze throughout, with cast bronze end brackets for the awning transom.

Our details, consisting of nine sheets, should be in your files.

Modern Bronze Store Front Company

ASSOCIATED COMPANIES:

INTERNATIONAL

ZOURI DRAWN METALS COMPANY
INTERNATIONAL STORE FRONT COMPANY
STANDARD STORE FRONT CONSTRUCTION CO.
MODERN BRONZE STORE FRONT CO.
ZOURI COMPANY OF CALIFORNIA
ZOURI DRAWN METALS CO., OF NEW YORK, INC.

DISTRIBUTION

Factory and General Offices: Chicago Heights, Illinois

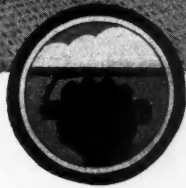
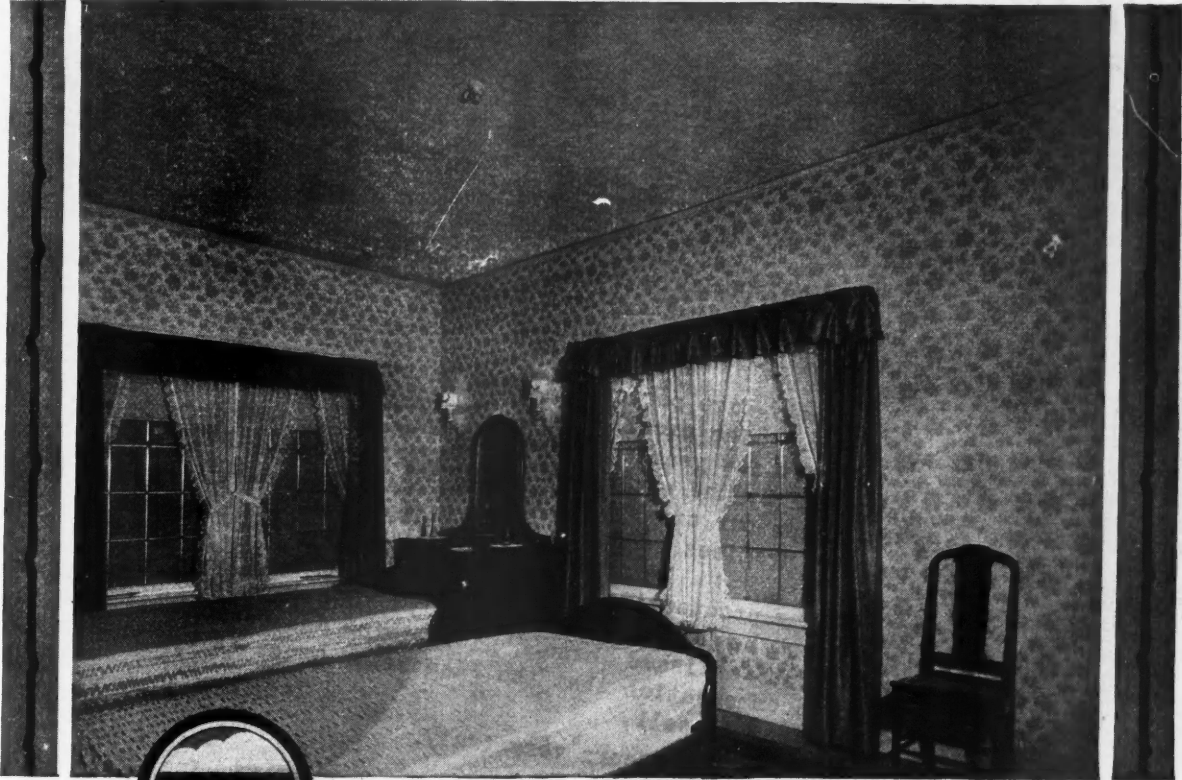


PLASTERING IS 90% OF THE VISIBLE INTERIOR OF THE HOME

PLASTERERS TELL YOU—

Only with LIME

can perfect walls and ceilings be built



PLASTER with LIME

Plaster is a word too often used in a broad sense. There are many kinds of plaster. Specify LIME plaster for this very important building item.

Only when favored with the opportunity of working with lime can the plasterer demonstrate the height of his ability as a craftsman. You can have excellent lime-plastered walls and ceilings at only 10% of the total cost of building... Use lime, the assured base for decorating or papering. Specify Gibsonburg, Ohio's Super-Finish, a snow-white, pure, very easily worked and uniform product. Apply over wood or metal lath.

THE GIBSONBURG LIME PRODUCTS COMPANY : GIBSONBURG : OHIO

Gibsonburg

Finishing Lime

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

EVERY KNOWN KIND OF INSURANCE



J.C. FERGUSON REALTY COMPANY INC.
 WE HAVE THE FACTS - LET'S DISCUSS IT.
 NOTHING BUT RESIDENTIAL PROPERTY

J. C. FERGUSON, President
 R. FLETCHER, Mgr. Insurance Dept.

610 GRAND AVENUE
 PHONE WALNUT 991

“... the FACE BRICK house is by far the easiest to sell”

Des Moines, Iowa
 June 8th, 1928

American Face Brick Association,
 130 North Wells Street,
 Chicago, Ill.

Gentlemen:

For \$8,500.00 or less, we are building to order in Des Moines attractive and substantial Face Brick houses of six or seven rooms.

Ninety-five per cent of the houses we build are of Face Brick. The excellence of the houses we have sold during the last few years and our easy financing plan -- made practical by the way Face Brick dwellings hold their value -- keeps our crews busy building to order. Our 1928 program promises to reach forty houses.

Many prospective buyers refuse to look at any but Face Brick homes. The advantages of this type have been so well established through advertising and person-to-person recommendation that the Face Brick house is by far the easiest to sell.

Yours very truly,

J. C. FERGUSON REALTY COMPANY, Inc..

Richard D. Dwyer
 Treasurer.

THE added salability of Face Brick houses has become so pronounced that many builders now find it good business to specialize in homes built of Face Brick. Four years ago J. C. Ferguson Realty Company, Inc., Des Moines, began building Face Brick houses to sell. Quick and profitable sales were the result. And today their crews

are kept busy building only to order. Their experience, as told in their letter above, is typical of the thriving, substantial business which is the result of using Face Brick. Builders tell us that our literature and house plans are a real aid in building and selling. May we send you information concerning them? Send your letterhead or card to

THE AMERICAN FACE BRICK ASSOCIATION

2163 City State Bank Building, Chicago, Illinois

If you live in Canada please write to 26 Queen St. East, Toronto, Ont.

FACE BRICK

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Bostwick

ANNOUNCES

THE FIRST "CROSS-RIGID"

METAL LATH

THIS new Super-Bostwick has all the merits of the old reliable "Truss-Loop" in still greater degree.

It has the same raised truss—the most effective known form of integral bracing.

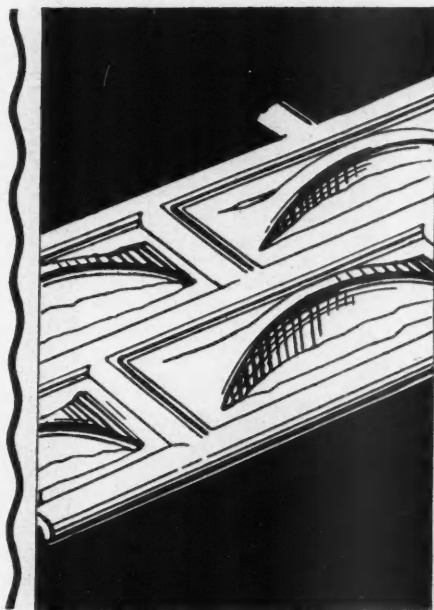
It has the same stiffening ribs, running lengthwise of the sheet.

Besides, it has a cross-rib, so that each truss is surrounded by a rectangular rib structure.

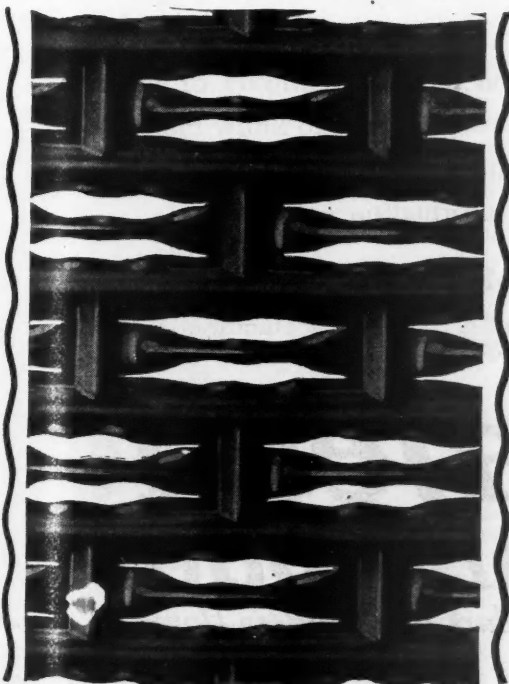
It is a stiffer lath, offering rigidity against both longitudinal and lateral bending strains, an easier lath to handle and apply, requiring a minimum of side tying.

Finally, it is the most satisfactory and economical lath to plaster—as shown by actual tests and enthusiastically attested by lathers who have tried it.

Cross-rigidity is an important principle in lathing and plastering practice. However stiff a lath may be lengthwise, pressure tends to make it belly or sag between supports and thus draw away from the side.



PATENT APPLIED FOR



A lath that is also stiffened laterally, minimizes these tendencies. It largely does away with the need of side tying.

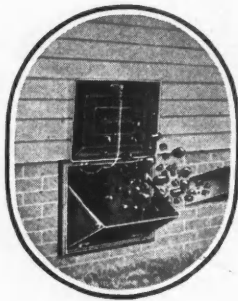
Trowel strokes across the overlap of the Super-Bostwick do not force the sheets apart and thus waste plaster that slips through the joint.

A sample of this new lath is yours for the asking. Better still, give your dealer a trial order and prove for yourself all that leading plastering contractors are saying on its behalf.

THE BOSTWICK STEEL LATH COMPANY
2112 Griswold Drive • Niles, Ohio

THE NEW
Super Bostwick
TRUSS-LOOP LATH

PLAIN FACTS



A LOT OF HOUSES built during the past year still have "for sale" signs on them. But the builder who put real value into his homes had little trouble in selling them readily—and profitably.

These "real value" homes invariably contained a goodly number of features contributing to comfort, convenience and economy.

Among the better-known products that add to the value of a home are—Majestic Coal Windows, Underground and Built-in Garbage Receivers, Milk and Package Receivers, Fire-place Dampers, etc. Small items in cost, yet mighty important reminders of extra quality in the home.

Whether you build on contract or build to sell, you owe it to yourself to know more about Majestic building specialties. Mail the coupon for complete information—now.

THE MAJESTIC COMPANY

300 Erie Street

Huntington, Indiana

Majestic
Coal Window
The Mark of a Modern Home

THE MAJESTIC COMPANY
300 Erie St., Huntington, Ind.

Please send catalog and prices of Majestic Coal Windows and other Majestic products that help sell homes.

Name.....

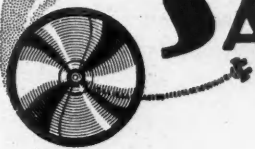
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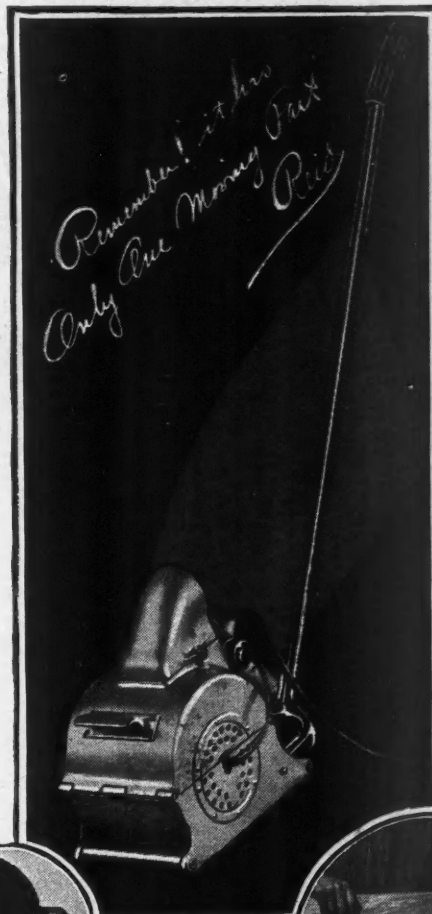
The Reid-Way

WHIRLWIND

SANDER



NOW comes a new and better Reid-Way sander. Unchanged in principle—one moving part is still the paramount feature. After three years of practical tests in the hands of users, certain changes and improvements have been suggested. The most practical of these have been incorporated in the design of the Reid-Way Whirlwind. In addition to those features which have made the Reid-Way the most popular light sanding machine, the new Reid-Way Whirlwind has more efficiency—positive control—does one-third more work. Completely enclosed to insure the safety of operators. Light—fast cutting—dustless. No increase in price. Use the coupon for details

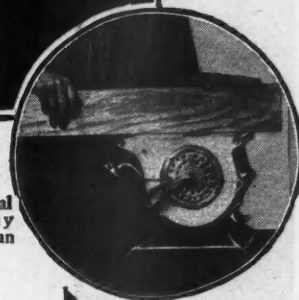


*Remember! It has
Only One Moving Part
Reid*

Perfect control and ease of handling insured with the Whirlwind model through the use of ball-bearing guide rollers. A convenient handle on the front facilitates bench sanding.



Inverted in a special base the Reid-Way Whirlwind becomes an efficient jointer.



The REID-WAY Co.

724 North Sixteenth Street
CEDAR RAPIDS, IOWA

Reid-Way Company,
724 North 16th Street,
Cedar Rapids, Iowa.

Gentlemen: Please send me circular describing the new Reid-Way Whirlwind Sander.

Name

Address

Burroughs

Electric

CALCULATOR

\$300
DELIVERED
U.S.A.



There is no faster
Method for *Calculating*

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

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AROUND *the* FAMILY TABLE



Prompted from the Back Seat

The driver of a Ford sedan, who was plainly out of his element in city traffic, attempted to turn around in the middle of a block, and was side-swiped and upset by a hook and ladder fire truck on its way to answer a call.

Striding over to the overturned vehicle, a traffic officer poked his head through the broken window and demanded: "What do you mean by blocking traffic like this? C'mon outta there, you're pinched!"

"You let him alone!" said a female voice from the back seat. "How did we know them drunken painters was going to run into us?"



Two Essentials in Building

"How is your new house coming on?"

"Splendidly. We've got the roof and the mortgage both on."



Change Your Advertising Copy

If your advertising isn't pulling as it should, the fault may not be with advertising but with the kind of copy you are using. Just make a change in your appeal. That's what the little boy in the story did. You remember that a lady of uncertain age was called to the

Plenty of Business for Those Who Go After It

Said the little young red rooster, "Gosh all hemlock! Things are tough.

Seems that worms are getting scarcer, and I cannot find enough;

What's become of all those fat ones is a mystery to me.

There were thousands through that rainy spell—but now where can they be?"

The old black hen who heard him didn't grumble or complain

She had gone through lots of dry spells, she had lived through floods of rain.

So she flew up on the grindstone, and she gave her claws a whet,

As she said, "I've never seen the time there weren't worms to get."

She picked a new and undug spot; the earth was hard and firm,

The little rooster jeered, "New ground! That's no place for a worm."

The old black hen just spread her feet, she dug both fast and free,

"I must go to the worms," she said; "the worms won't come to me."

The rooster vainly spent his day, through habit, by the ways
Where fat round worms had passed in squads back in the rainy days.

When nightfall found him supperless, he growled in accents rough,

"I'm hungry as a fowl can be. Conditions sure are tough."

He turned then to the old black hen and said, "It's worse with you,

For you're not only hungry but you must be tired, too.

I rested while I watched for worms, so I feel fairly perk;
But how are you? Without worms, too? And after all that work?"

The old black hen hopped to her perch and dropped her eyes to sleep,

And murmured in a drowsy tone: "Young man, hear this and weep;

I'm full of worms and happy, for I've dined both long and well;

The worms are there as always—but I had to dig like hell!"

—"Doorways," published by Richards-Wilcox, Aurora, Ill.

door of her cottage by a shaver of a lad.

Lad: "Does 'oo want to buy some tute 'ittle tittens?"

Lady: "What did you say?"

Lad: "Does 'oo want some 'ittle tittens?"

Lady: "What is it?"

Lad: "Does 'oo want to buy a dam dood tat?"



For Your Bad Debts

After vainly trying to collect \$40.00 due him from one of his customers the colored man consulted his lawyer.

"What reason," his lawyer asked, "does he give for not paying you this money?"

"Boss," said the colored gentleman, anxiously, "he's gimme a mighty good reason, sah."

"Well, what is it?"

"He done say, Boss, dat he's been owin' me dat money so long dat de interest has et it all up."



Can You Blame Him?

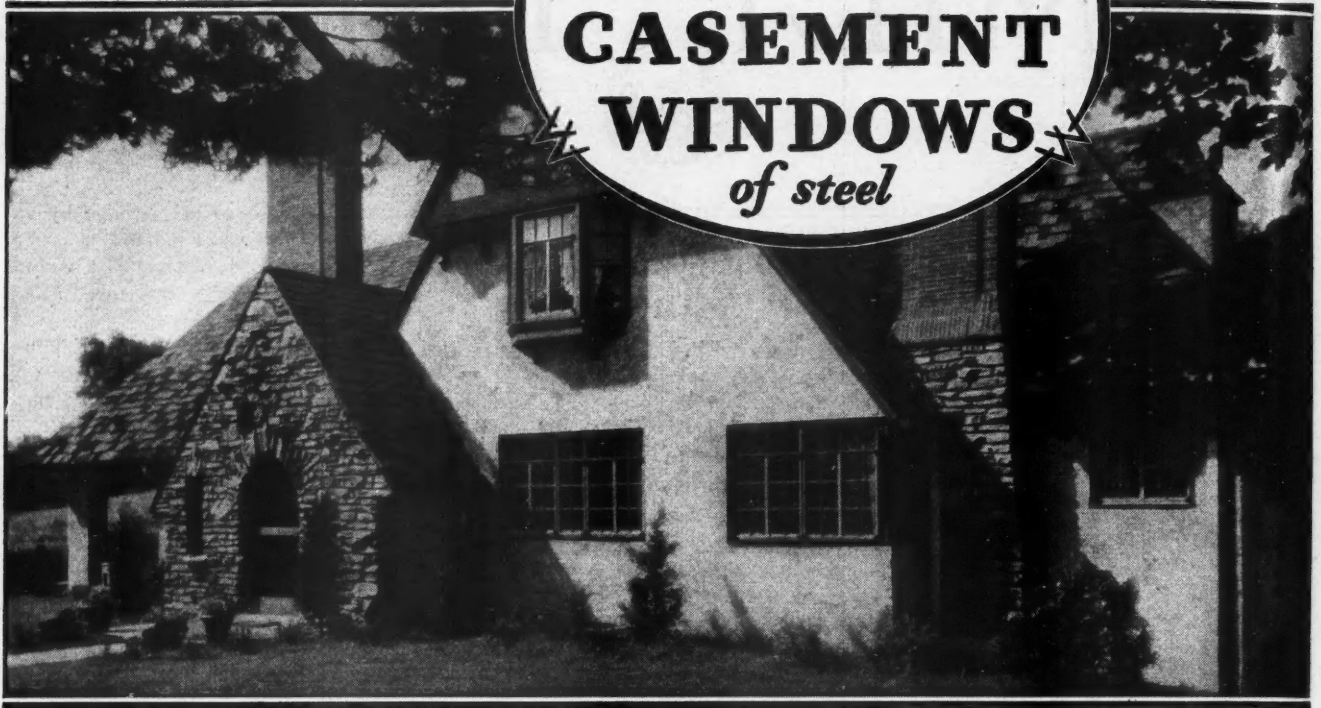
A certain Chicago advertising man is noted for his thriftiness. Strangely, he is of Scotch descent. Imagine our amazement, at a recent select, little dinner, to hear him call for the check. He blushed as he looked at it, but paid it like a man.

The next day's paper carried this headline:

"SCOTCHMAN MURDERS VENTRILOQUIST."

Fenestra

CASEMENT WINDOWS *of steel*



“After two years’ consistent use
 . . . very favorable”

“We have no hesitancy in thoroughly endorsing your casement windows, and after two years’ consistent use of this product are very favorably impressed with its adaptability in architectural design, its absolute weathertightness under some of the most trying conditions, and the general satisfaction our clients have expressed in these installations.

“Thanking you for past favors, we are,

Yours very truly,

H. W. CORDES & SONS, *Architects*
 Cincinnati, Ohio.

(Signed) W. W. Cordes.”

Cost Little and Help Sell Houses

Fenestra Casements cost little, if any, more than ordinary windows. And they cost *less* to install, because they come to the job *complete*—hinged, painted, et cetera.

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FOR ADVERTISERS’ INDEX SEE NEXT TO LAST PAGE

AMERICAN BUILDER



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Building Continues Active

NEW building and engineering work contracted for in the 37 states east of the Rocky Mountains during the past month was the highest October contract total on record, according to F. W. Dodge Corporation. Last month's total, \$597,103,500 in amount, was three per cent ahead of the September, 1928, total and it was six per cent over the October, 1927, total. The above figure includes about 91 per cent of the country's total construction and is segregated into eight districts. When comparisons were made with the October, 1927, records, it was found that the only district where there was a decrease was the Middle West.

The October building record brought the total amount of new construction started in these states since the first of this year up to \$5,724,047,600, as compared with \$5,359,297,900 for the corresponding period of last year, the increase being seven per cent.

Analysis of the October contract total showed the following outstanding classes of work: \$239,691,900, or 40 per cent of all construction, for residential buildings; \$148,696,500, or 25 per cent, for public works and utilities; \$67,330,400, or 11 per cent, for commercial buildings; and \$62,258,700, or 10 per cent, for industrial projects.

New contemplated projects, as reported last month in the 37 Eastern States, reached a total of \$616,933,100. This was an increase of 18 per cent over the amount reported in the preceding month and a gain of one per cent over the October, 1927, total.



Rents Continue to Decline

RENTS for small houses and apartments such as are occupied by families of moderate means, on the average for the United States, have continued to decline during the past year and at nearly twice the rate of the preceding two years, according to the National Industrial Conference Board, 247 Park Ave., New York. Average rents in July of the current year were 4.2 per cent lower than in July the previous year, against a decrease of 4½ per cent from July, 1925, to July, 1927. Average rents for the country as a whole are now nearly 13½ per cent lower than they were at their post-war peak, which they reached in July, 1924. These data are based on information collected in both large and small cities in all sections of the United States. Inasmuch as the above cited figures are national averages, they do not necessarily apply to any one single locality.

Of the 180 cities reporting to the Conference Board's Cost of Living department, 123 reported no change from a year ago, 47 reported decreases and in only 10 cities increases were noted. Rents appear to be most stable in the East and in the South; 45 out of 62 cities in the East reporting no change, and lower rents being reported from 17 localities; out of 27 southern cities, 20 reported no change, 5 decreases in rents and only two showed increases.

Of the 68 cities in the Middle West, 42 reported no change from last year, 22 indicated decreases in rents and in four there were increases. In the Far West there were

no changes in 16 cities out of a total of 23; decreases in three and increases in four cities. In 13 cities of the 25 largest in the country, rents were reported as showing practically no change from July, 1927, to July, 1928.



Value of Sub-Floor Proved

THAT the addition of a subfloor has a valuable stiffening effect in wooden floor construction is confirmed by recent tests at the Forest Products Laboratory, U. S. Forest Service, on 30 different constructions conforming to floor designs and conditions met with in common practice. These tests indicate that a subfloor adds very appreciably to the strength of a floor system by distributing loads placed upon it, reduces floor distortion and vibration, diminishes the cracking of plaster, and probably decreases floor squeaking.

Under a load such as is represented by a piano or other piece of furniture, the joists supporting a floor are deflected or bent. One effect of this bending of the joists is a bending of the lath and plaster on the ceiling below, which may cause the plaster to crack. It was found that a subfloor of ordinary thickness, added to a floor system consisting of a one-inch hardwood floor on 2 by 10-inch joists, 12 feet long and 16 inches apart, reduced the total deflection or bending of an individual joist approximately 30 per cent and its deflection with respect to adjacent joists approximately 40 per cent. Less bending of the individual joists means less tendency for the plaster on the ceiling beneath to crack.

Many houses and apartments are still erected without subfloors and with the finish floors supported directly by the joists. That a subfloor has advantages, however, which should not be overlooked, is conclusively demonstrated by the laboratory's study.

"The use of a subfloor," says the laboratory authority, "very often affords a degree of satisfaction to the home owner that far outweighs its additional cost."



Study Building Depreciation

RECOMMENDATIONS as to the number of years which practical experience points may be expected to be the normal life of various types of buildings have been made to the Commissioner of Internal Revenue by the National Association of Real Estate Boards. These recommendations were made at the request of the bureau, which asked for such a statement to enable it to set up a schedule of normal rates of depreciation and obsolescence of buildings for the purpose of determining allowable deductions in the making of income tax returns.

The findings of the Real Estate Board constitute the most careful study that has ever been attempted of the normal expectation as to the length of useful life of all types of buildings under every type of construction. The experience of 111 cities has been tabulated and summarized in three ways: by sectional distribution of cities, by cities grouped according to size, by cities grouped according to rate of growth. In addition the data has been classified for each type of construction under 13 classes.

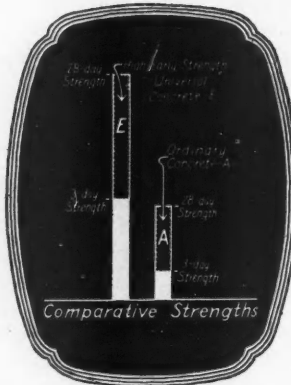
Draw Your Own Conclusions From These Actual Job Tests

Concrete as commonly mixed and placed reaches a compressive strength of about 2000 pounds per square inch in 28 days. The following examples show what you can accomplish with the standard grade of Universal cement in a fraction of this time.

2494 lb. concrete in 3 1/2 days
Heavy-Duty Foundry Floor
Du Bois, Pa.
Alfred Johnson, Du Bois, Pa., contractor

2780 lb. concrete in 3 days
Street Pavement
Lake Forest, Ill.
Johnson & Anderson, Chicago, contractor

2255 lb. concrete in 65 hours
Bridge Floor
Minot, N. Dak.
P. L. Elliott, Minneapolis, contractor



2047 lb. concrete in 20 1/2 hours
Highway Pavement
Amnicon Falls, Wis.
A. N. Nelson, Duluth, contractor

2655 lb. concrete in 2 1/2 days
Sewer (Intercepting Chamber)
Chicago Sanitary District
E. J. Albrecht, Chicago, contractor

2115 lb. concrete in 3 days
Roof Slab (A Winter Job)
Morgantown, W. Va.
Consolidated Construction Co.,
Wheeling, W. Va.

4387 lb. concrete in 3 days
Street Intersection
Downers Grove, Ill.
A. E. Bounsall, Kenosha, Wis., contractor

3303 lb. concrete in 7 days
Manholes for Conduit
Chicago (Commonwealth Edison Co.)
Bates & Rogers Construction Co.
Chicago—Cleveland

When You Get One, You Get All Three

1. Strong concrete in 3 days

With the usual materials, usual equipment, usual labor and usual Universal cement, you can secure at 3 days, concrete that is stronger than ordinary concrete at 28 days.

2. Permanently stronger concrete

As shown in the diagram above, High-Early-Strength Universal Concrete not only has a high 3-day strength but is permanently stronger than concrete as ordinarily mixed and placed.

3. Denser and more durable concrete

In addition, the methods by which High-Early-Strength Universal Concrete is obtained produce a denser and more durable concrete.

Description of methods for securing on the job strengths comparable to any of those shown above will be sent on request.



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EVERYBODY'S BUSINESS



More Science—More Business Hazards

By FLOYD W. PARSONS

FIVE new inventions a minute! Who can say that his job is safe? Who can be sure that his business is permanent? The developments of each day open fresh paths to travel. The unexpected discovery of a new material may mean the passing of an old industry and the creation of a new one. Too many of us are like the lightning bug that has a torch on the rear end. He can see where he has been but not where he is going.

Science has created unparalleled benefits for mankind. But in so doing it brought distress to many who were unable to foresee the future and adjust themselves speedily to the radical changes that took place. For instance, our most modern locomotive is capable of replacing two of those that were in service only a comparatively few years ago; and yet these most recent machines burn the fuel of only one of those that were replaced. This notable advance in practice and construction was fine for the railroads, but it was hard on the producers of bituminous coal.

The development of chemistry has brought us unmeasured benefits, but in hundreds of places this progress has caused upsets in industry. Manufacturers have saved hundreds of thousands of dollars in recent years by changing their methods of purchasing raw materials so that moisture content is given proper consideration. But some of the producers of the same raw materials found that their sales were thereby greatly restricted. Immense dividends are being earned by the railroad and other industries on their investment in research upon boiler-feed waters. One railway finds that a water-treating plant pays for itself each year. On a second system there is one run of 563 miles that formerly required three

or four engines. Now by employing chemists to treat the different waters used, this run is made with a single locomotive.

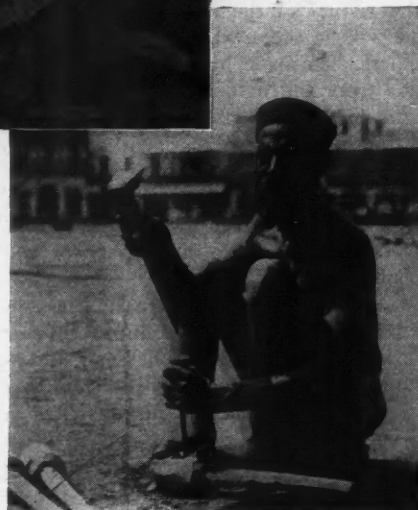
Similar research is responsible for extending the lifetime of boiler tubes from an average of seven months to thirty months. With a single railroad operating as many as 1,700 locomotives and a set of boiler tubes costing \$1,300, it is plain that the savings from this kind of investigative work totals an immense sum. But as a result the steel producers found their market for these pipes curtailed and had to seek new outlets. Science was highly successful in doubling the life of automobile tires. But the rubber companies have paid dearly for their earnest effort in this line of research.

The savings to the nation from chemical research are beyond computation. The invention of the dry air-blast for the manufacture of iron effected a reduction of nearly a dollar per ton in the cost of producing pig iron. The discovery of ways to produce and use chlorine in the treatment of drinking water is probably the greatest contribution to sanitation ever made. Three-fourths of the water used in American homes is now chlorine-treated. Research in the cement industry jumped the production of this essential product from 8,000,000 barrels in 1900 to 200,000,000 barrels at present. Fifteen years ago it required a month to construct a single mile of concrete highway. Today we can build a third of a mile of concrete road in 10 hours.

A new anti-mony alloy useful in telephone



Science Has, Long Since, Made Obsolete, These Methods of Craftsmanship. It will do the same for many of the most modern industrial methods.



cable construction has saved the phone companies \$6,000,000 in less than a decade. Another alloy used in the relays and switches of telephone plants and central stations has effected a total saving of \$13,000,000 in seven years. Scientific investigation with cottonseed has resulted in the production of so many useful by-products that ten dollars have been added to the value of the cotton crop for every bale grown. Cottonseed and the oils and fats extracted from it are now contributing a half billion dollars to the national income of the United States. The chemist has added other tens of millions to our credit account by disclosing ways to manufacture more than a hundred useful commercial products from corn.

One might continue and tell of dozens of other results of research no less astonishing. The story of the creation and growth of the rayon industry contains facts that are almost unbelievable. The same thing is true with respect to research developments in the fields of coal tar, insecticides, luminous paints, adhesives, motor fuels, refrigeration, food preservation, light vibrations and electrochemistry. One may well inquire if this tremendous revolution in life and industry is to continue unabated. Will there be any lessening of the hazards that business must face in the years ahead from unexpected discoveries?

The answer is no. We now have more than a thousand industrial research laboratories in America employing over 16,000 scientists, and spending upward of \$120,000,000 each year for experimental work. In the fields of metallurgy alone there are 251 laboratories engaged mostly in the study of furnace practices and new alloys. We may be sure that the disclosures of new knowledge will be increasingly apparent and there will be no cessation of the forces now engaged in making and breaking industries.

A great cry has gone up for the stabilization of business. Unfortunately, this plea will be sounded in vain. There will be a continual upsetting of "normal" price relationships by a multitude of new inventions and chemical discoveries. Just as the automobile and the airplane forced a revolution in railroad rates and practices, so will synthetic rubber and scores of other new products bring about no less important upheavals. Price fixing can only be brought about by a monopoly, and even if this were not prevented by legislative restrictions, science itself would take a hand and nullify monopolistic action. In Japan there was a camphor monopoly; in Chile, one in nitrates; and in India, one in indigo. All of these found their power largely destroyed and prices cut as a result of the research of chemists in other lands.

Current developments in the manufacture of synthetic perfumes indicate the approach of the end of a profitable flower-growing industry in southern France. Here we will have an enactment of the same old drama. The ancient industry will decry the virtues of the new synthetic product. People for a time will be skeptical. But finally it will be disclosed that the perfumes made by chemists are even better than those made from the natural flowers. It took quite a while to get the public to recognize the truth that the best and fastest dyes known are the synthetic ones. It may take just as long to get the average citizen to understand that natural perfumes not only are limited in number, but they cannot be standardized for the reason that the odor of the flowers changes with the variety of the seasons and the uncertainty of the harvest.

On the other hand, synthetic perfumes are limitless in the number of new odors that can be produced. Their price will be much lower because the chemist can manufacture as much perfume in a small factory with a few vats and stills as can be secured under the old process from a large acreage of growing plants. While the flower-growers of France will find their livelihood disappearing, in other parts of the world we will witness the birth of a new business with a new art. The production of perfumes

with strange and fascinating odors will necessitate the development of a language to deal with these products. A new craft will arise entailing as much exercise of artistic genius in the blending of perfumes as is now required of the painter who specializes in the combination of delicate colors.

There is only disappointment ahead for people who believe we are approaching a business millenium in which we will see the end of ups and downs in our industrial life. Corporations can only go so far in their co-operative activities to make competition more intelligent and stabilize the price level. If the producer were the only party concerned, the remedy would be easy, but the consumer's interest is paramount and must be protected.

We may permit the wide publication of essential business facts and figures respecting markets and production, but we cannot dispense with laws that prohibit concerted action to bring about uniformity of policy among competitors. Furthermore, there are many forces at work causing price fluctuations that are beyond human control. In great major industries like textiles, coal and agriculture, even if it were possible to bring about concerted action by tens of thousands of producers, there would be no way to regulate such variable influences as those resulting from the weather. Consumption in dozens of lines will always vary with the mildness or severity of seasonal temperatures. A week of abnormal weather may destroy a crop. An insect invasion may result in such damage that the price of the product may be doubled.

The yearly losses of our farm crops caused by insects now total more than a billion dollars. The total annual damage to trees, humans and domestic animals from insect-borne diseases is estimated to be nearly half as much. It is amazing, but true, that if a pair of insects destructive to plants should increase for three years without hindrance there would be around 6,000,000 of the pests in existence.

The application of science to business is bringing about a continual betterment of practices. The adoption of standardization and simplification in manufacturing has effected a material decrease in production costs. The development and use of a uniform system of cost accounting by forward-looking corporations is promoting greater fairness in competition and assisting individual concerns to understand each other better when talking costs.

The problem of seasonal variation has also been handled successfully by modern managements in a wide range of industries. Greater speed in transportation, improvements in refrigeration and modern developments in scientific canning and cold-pack methods all have tended to stabilize prices of milk, vegetables, and fruits. Employment of workmen in the building trades has been increased from 75 per cent to better than 90 per cent of the entire year. The automobile has become a year-round necessity instead of a summer luxury, as a result of remedies having been found for the difficulties of winter usage. The export market has proved a valuable outlet for excess production. The purchase of American automobiles by foreigners the past year was equivalent to the sales in twenty states of this country.

But notwithstanding all we are doing, there is not the slightest indication of an approaching time of business stabilization.

There will be an end of price fluctuations and business upheavals when salesmen all die, invention ceases to function, new ideas disappear, science is buried, research is abandoned, competition gives way to monopolies, the purchasing value of the dollar remains constant, and human nature has been brought to abhor speculation. Science found the world of business in darkness and has succeeded in letting in the light. It has substituted truth for deceit and given a moral consciousness to what was a thing of shame. But while the rewards for merit are greater than ever before, the perils of business will continue to multiply.

Building Houses Fit for Heroes

How the Government and the Building Industry of Great Britain Has Kept the War Time Pledge to Provide Suitable Homes for its Veterans and Has Met the Housing Shortage

By HENRY R. ALDRIDGE,

Former Secretary of the British National Housing and Town Planning Council, Secretary of the Two International Housing Congresses, 1906 and 1920, and Author of "The National Housing Manual."



Burman Crescent, One of the Housing Projects in the Liverpool District Which Has Been Developed to Provide Suitable Homes for British Veterans of the Late War, in Accordance with Wartime Pledges. The houses in this group are all of concrete and every house must be provided with a modern bathroom.

THE British building industry is entitled to claim credit for a great achievement. The years since the close of the World war have covered a period of exceptional difficulty. Shortage of labor supplies, scarcity of building material, inflation of costs in practically every department of constructive work—all have conspired to place barriers in the way of the smooth working of a great industrial machine. For quite two years after the armistice, a boom for industrial expansion was responsible for a feverish activity in the unwise construction of new factories. Energy was also in demand for work on repairs which had fallen sadly in arrears between 1914 and 1918. It was not until the opening of the year 1920 that the building industry was set free to deal with the problem of constructing an adequate number of small houses to fight the housing famine from which the whole of Great Britain was suffering to a greater or lesser degree.

A Remarkable Achievement

According to figures published by the Ministry of Labor, the number of skilled operatives in the building industry of Great Britain was as follows in October, 1921:

Carpenters	132,260
Bricklayers	62,170
Masons	23,880

Slaters	5,370
Plasterers	17,080
Painters	115,900
Plumbers	35,840

Total392,500

The membership of the operative class in the building industry is larger today, but it still falls short of the half million mark. Despite the fact that this building army is relatively small compared with that of the United States, it is possible for the leaders of the industry in Great Britain to take a legitimate pride in the fact that, in addition to all their other activities, which have been numerous and substantial, they have succeeded in building a million houses since November, 1918.

In round figures, this million houses may be divided into three classes of about a third of a million each. The first of these classes represents houses built under the housing schemes of British local authorities in response to an appeal made by King George V on April 11, 1914, that they should show in the active administration of the post-war Housing Act, the same untiring energy and enthusiasm as was shown in meeting the demand for munitions of war.

The second class represents small houses of the cottage



This Aerial View of Larkhill Estate Shows the Value of the Limitation of 12 Houses to the Acre Which Has Been Placed on All Housing Projects to Which the British Government Lends Its Aid. This group of homes is one of the Liverpool housing schemes.

type, built by small house builders and sold to working class purchasers, aided with substantial housing subsidies provided by the government.

The third class represents small villa property constructed for the tenancy of relatively well-to-do members of what in England is called "the lower middle class." The needs of many of the younger members of this class were urgent, so far as housing accommodation at the end of the war was concerned. It was not deemed necessary to provide any government subsidy, and the houses built for purchase by them were of the four and five bedroom type, with the usual parlors and living rooms. The sale price varied from \$3,500 to \$7,000, apart from road and land cost.

It will be seen from the foregoing figures that the actual contribution made towards the housing needs of the working classes has actually been about two-thirds of a million. It would be a mistake, however, to assume that the houses built for middle class occupation have not been of value of an indirect kind. As a matter of fact, many of the purchasers of the houses included in the third class, as defined above, had been compelled by the housing famine to crowd into working class homes, and the lessening of the tension of their need had a beneficial effect on the general housing problem.

The British View of the Housing Subsidy

The writer is sufficiently familiar with public opinion in the United States to realize that the American point of view concerning the desirability, or need for, government subsidies for housing is completely different to that held in Great Britain. To the extent to which this difference is due to the fact that standards of living and the capacity to buy, not only good housing accommodation, but good food and clothing and some measure of the amenities of life, are superior in the United States, the American people are entitled to claim that their methods of industrial organization and treatment of the life problems of workmen, render unnecessary the giving of state aid in any

form to fill in gaps in standards of life.

But, in justice to British housing reformers, two points must be made clear. The first is, that during the war, definite pledges were given to men called up to serve in a time of national "life and death" emergency, and the second is, that the fulfillment of these pledges as a matter of national honor could not be secured on so-called economic lines. So far as the second point is concerned, one clear statement will place the matter beyond dispute.

Quite half of the houses built since the war for the occupancy of the working classes have been built at a cost which, translated into terms of weekly rent, would have meant that from 30 to 40 per cent of the income of the tenants would have been absorbed in paying an economic rent. The position, therefore, was of choice between a callous disregard of the national pledges given during the war in order to avoid the burden of housing loss, or the fulfillment of housing duties with the aid of substantial subsidies.

The writer takes a pride in recalling the fact that the following pledge given in 1916, during the war, by the late Lord Long (then Mr. Walter Long) was made in response to a speech made by him in closing the case presented by a national deputation organized to demand vigorous housing action whenever the war closed.

In the closing sentence of the last speech, we were told that what had moved the speaker was not so much employment for the unemployed in the building trade, who would come back from the fighting, or for those who are here, but "the duty of the nation to provide that our soldiers, when they come to settle down, whether it be in the town or the country, shall, with the least possible delay, have provided for them decent home accommodation. It would indeed be a crime—a black crime—if, reading as we do the wonderful accounts of the sufferings which our heroes have to undergo in the trenches we sat still now and did nothing by way of preparation to insure that when these men come home they shall be provided with as little delay as possible. To let them come from

the horrible water-logged trenches to something little better than a pigsty here would be indeed criminal on the part of ourselves and would be a negation of all we have said during this war, that we can never repay these men for what they have done for us."

Other pledges given during the war included the famous one of the Prime Minister—Mr. Lloyd George—to the effect that it would be the duty of the state to take the necessary action to secure that when victory had been won, houses would be provided "fit for heroes to live in."

The Main Lines of Housing Finance

That the cost to the nation of this great effort has been considerable will be seen from the fact that grants of an annual kind, paid to local authorities in aid of municipal housing schemes, and annual subsidies to private persons, reached a total of \$42,000,000 in 1926. In the course of the next few years, this amount will become substantially greater because, although the amount of subsidy per house built after November, 1927, has been reduced in amount, the granting of subsidies will still be continued. It may be reduced still further, but as the present government will have to face the electorate in 1929, it is probable that they will not run the risk of popular condemnation. The fact is that both our Parliament and our people recognize that the housing subsidy has been the main factor in producing the two-thirds of a million houses which have been built for working class occupation, and which are now providing homes for upwards of three million people.

So far as the grants to private persons are concerned these have varied in volume under different acts of Parliament. But the most general type of subsidy has been that given by great local authorities, like Manchester, of lump sums of \$480. Towards this the state has contributed in the form of a promised annual grant, payable for 20 years, possessing a capitalized value of about \$360. All the work of handling the subsidy negotiations is left to the local authority of the area concerned and as a rule there is sufficient eagerness to encourage the purchase of houses



One of the New, Modern Tenements in Prince Edwin Street, Liverpool, Which Has Replaced Buildings Similar to Those Shown at the Bottom of This Page.

by prospective house owners belonging to the working classes to insure that the amount is added to by a contribution made out of the local rates of the district. Actually what happens is that on the strength of the promise of an annual grant from the government the local authority uses its borrowing powers and raises the capital sums needed to pay out the various lump sums promised to approved applicants.

The Letting of Houses to Municipal Tenants

There can be no doubt that the most valuable housing contribution from the point of view of national duty has been that rendered by local authorities under their own housing schemes. There has been some ground for criticism that many of those who were able to buy private enterprise subsidy houses, built by small house builders, belonged to the class of workmen included during the war in "sheltered trades" and kept at home earning good wages because they were of special value and importance as producers of munitions. By thrift they had succeeded in amassing substantial sums which were readily available for house purchase, and they could moreover afford to pay good prices. But these were not the men to whom the homes had been promised, and the whole nation looked to the local authorities to concentrate on the performance of the duty of providing "houses fit for heroes."

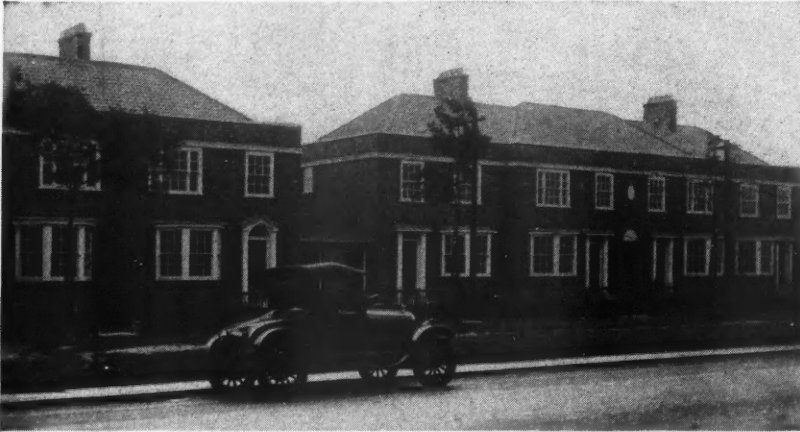
It is to their eternal credit that they have succeeded. Quite early in the history of these housing schemes all kinds of ambiguity in the terms of letting were swept away by the drafting of definite instructions (on the authority of full council meetings) for the guidance of the administrative committees. The Manchester City Council, for example, ordered its housing committee to deal with all applicants in the following order:

(1) Persons who have served in the war, who gave up their homes in Manchester to enlist, and are at present in lodgings.

(2) (a) Persons now living under serious conditions of overcrowding. (b) Persons who have served in the war and were not householders, but resided in Manchester prior to enlisting, and are at present in lodgings.



Perhaps the Most Important Phase of the Building Activity in England Since the War Has Been the Effort to Do Away with Such Slums as This, Many of Which Have Already Been Replaced by Buildings Like That Shown at the Top of This Page.



Houses of the Parlor Type Erected on the Wide, Arterial Road, Queens Drive, in Liverpool, England, Through Co-operation of the National and Local Governments.

(3) Others who have served in the war.

Only when the needs of these classes have been met are the housing committee of Manchester free to let their houses to other classes of applicants. This schedule of instructions may be taken as typical of those adopted throughout the length and breadth of Great Britain and the effect has been that nine-tenths of the houses built and let by local authorities are actually tenanted by those for whom they were built, by veterans of the war.

The Cost of Building the Houses

When the task of building these houses was entered on in 1920 the cost of a three bedroom house with a parlor, living room, scullery and bath not infrequently exceeded \$5,000, and, as a house of a similar kind could be built before the outbreak of war for about \$1,500, there was, by general agreement, a slowing down of the pace of production in order to give the building industry an opportunity to bring the figures to a more reasonable level. The measures taken to secure this end had taken effect by 1923 and from that year onward it has been possible to say that the building industry has "played the game" in a loyal way by building under contract for local authorities an increasing volume of admirable small houses at prices which are both reasonable and fair, when it is borne in mind that our "cost of living figures" represent an increase, as compared with pre-war years, of nearly 100 per cent in the cost of the necessaries of life.

There have been, for example, during the past year, a large number of substantial contracts let under "sealed tender" methods of competition in which three bedroom houses with living room, scullery and bathroom are being built for less than \$2,000 each, exclusive of land and roads. Upwards of 95 per cent of the million houses, moreover, have been built by ordinary builders and contractors. The endeavor made to establish Building Guilds came to an unfortunate end in 1922 for reasons which there is no need to discuss here and, although there has been a certain amount of building by direct labor, the overwhelming volume of work has been done by ordinary builders and contractors working in the ordinary way.

Not the least difficult question which confronted local authorities in letting the houses thus provided, related to the question of the rents to be charged for their tenancy. It was finally decided that the local authorities should be empowered to charge rents within the means of working class families to pay. As this capacity varied according to the size of the town concerned, and was appreciably less in rural areas, the range of rents actually charged had little or no relation to the actual cost of building, which for various reasons has been almost as

great in rural areas as it has been in towns.

The following figures will be noted with interest. In many parts of rural England the rent charged for a parlor cottage is 5 shillings (\$1.20) a week plus rates. Throughout the industrial areas of the Midlands and the North of England, the rents of non-parlor houses, apart from municipal rates, range from 7 shillings (\$1.70) to 8 shillings 6 pence (\$2.05) per week. For parlor houses, the rents, apart from municipal rates, range from 8 shillings 6 pence (\$2.05) to 10 shillings 6 pence (\$2.50) per week. In London, however, the rents, apart from municipal rates, are 15 shillings (\$3.60) a week and more.

The Designs of the Houses

By the courtesy of the Liverpool City Council the writer is enabled to give an illustration of a typical group of the houses provided under one of several suburban schemes. In many ways these houses represent a great advance on the houses provided for the working classes in the years which preceded the war. This improvement has been quite deliberate. It was the desire of the nation that the houses built for returning soldiers should be better houses. Quality as well as volume of supply was emphatically demanded. This was admirably expressed by the King in 1919 in the course of a speech which ranks as an outstanding call to action:

"It is not merely 'houses' that are needed. The new houses must be also 'homes.' Can we not aim at securing to the working classes in their homes the comfort, leisure, brightness, and peace which we usually associate with the word 'home'? The sites of the houses must be carefully chosen and laid out, the houses themselves properly planned and equipped; and I would ask you not to overlook the supreme importance of the planning and equipment of houses to the women who will live in them, and whose convenience should therefore be a prime consideration."

Twelve to the Acre

The most striking of all achievements has been that secured by the limitation of the number of houses per acre to 12. A pledge to this effect was given by the war government in 1917. This pledge was redeemed in 1919 by Dr. Addison and has been loyally honored by his successors at the Ministry of Health—Mr. Neville Chamberlain and Mr. Wheatley. Under the 1924 Housing Act the last named Minister successfully passed through the House of Commons a provision that all municipal housing estates shall be governed by the limitation of 12 houses to the acre. This must not be departed from without the permission of the Minister of Health. The resultant value of this limitation can be gathered from the accompanying striking photograph, taken from an aeroplane, of one of the Liverpool housing schemes.

The Battle of the Bath

Another great achievement has been the inclusion of baths in such a large number of the houses as to justify the statement that 95 per cent of the million houses have baths, for the greater part in separate bathrooms. This amenity was not secured without a great battle between those who said that it was not desirable to incur this expense and those who said that no new house should be built without this necessity of a modern healthy family life. The reactionaries lost the battle and the universal experience is that the ample garden rendered possible by the 12 to the acre standard, the three bedrooms which

(Continued to page 102)

Effective Use of Expanded Steel in Concrete Reinforcing

NOTWITHSTANDING the fact that expanded metal has been a staple product in the list of construction materials for many years, there are still those who do not fully understand certain facts about it nor the wide range of its field of application. Although originally designed and perfected for the special use of the manufacturer of fences, safety guards and railings, in which field it is still used extensively, it is now used as reinforcing for concrete in many of its general as well as special forms.

The expanded metal used for concrete reinforcing is made from one of the highest grades of open hearth steel. The process of manufacturing it is a simple one, but one which is not known to many of the people who are familiar with the finished product. The plate is laid on the table of a press with one edge projecting over the edge of the table a distance equal to the width of the strand. A descending die-knife cuts and draws the projecting metal so that half-diamond shaped strands are formed at regular intervals along the length of the sheet.

The die is so shaped that the plate is left intact a short distance between successive strands while the middle of each strand is forced downward and the entire strand cold drawn to form the half-diamond. The plane of the half-diamond is approximately at right angles to the plane of the uncut plate.

The plate is then moved in the direction of its length. Simultaneously the plate is projected over the cutting edge a distance equal to the width of a strand. When the die next descends, the uncut portions of metal where the strands of the first half-diamonds are joined now become the bottoms of the loops forming the second row of half-diamonds. The die-knife returns to the original position and the third row of half-diamonds is formed, the strands being everywhere parallel to the first row and joined to the strands of the second row by successive uncut portions of metal.

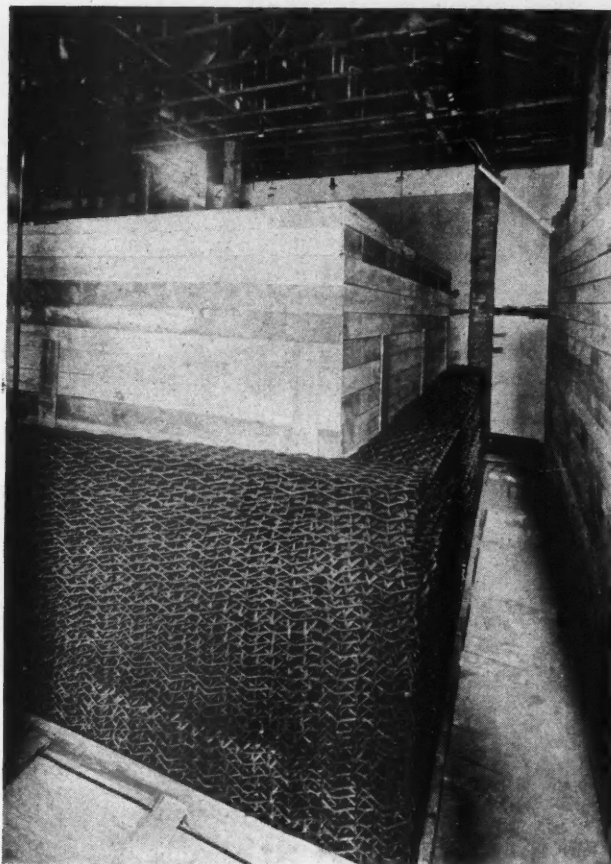


Fig. 1. One Type of Expanded Metal Reinforcing Used in the Concrete Walls of Large Bank Vaults.

central point and distributing it equally in all directions.

To the average contractor, builder or architect, the general uses of expanded metal for concrete reinforcing are well known. Among them might be mentioned floor construction, concrete roads, bridges, tanks, reservoirs and sewers. In these operations expanded metal offers an ideal method of reinforcing the concrete, as

This process is continued until the entire plate has passed under the dies and the complete piece has been finished. No additional operation is required to finish the sheet. To people who are building, from the owner and architect down to the man placing the steel in the forms, the use of expanded metal is an automatic assurance that they are using a material of selected quality steel, always to specifications, which is not, and cannot, be made from the ordinarily accepted stocks, as steel which does not meet these specifications would not permit of the cold expansion necessary in the process of manufacturing expanded metal.

The first and foremost prerequisite for reinforced concrete design is that the reinforcing shall act as a binder of the concrete and expanded metal performs that particular function with unusual thoroughness. Being of uniform area throughout, with each strand an integral part of the whole sheet, it acts as a steel mat in the concrete taking the load from any one

it approaches very closely to the theoretic amount of steel required per unit of surface, at the same time providing a piece of steel in a flat sheet, so fabricated that the bond between the steel and the concrete is perfect.

There are, however, several other uses which are worthy of attention and which have been found to be of practical value. For the past few years many safe deposit vaults in the principal banks of the country have been built with their concrete enclosures reinforced with expanded metal, which is in reality reinforcing against any possible type of attack, whether it be the bur-

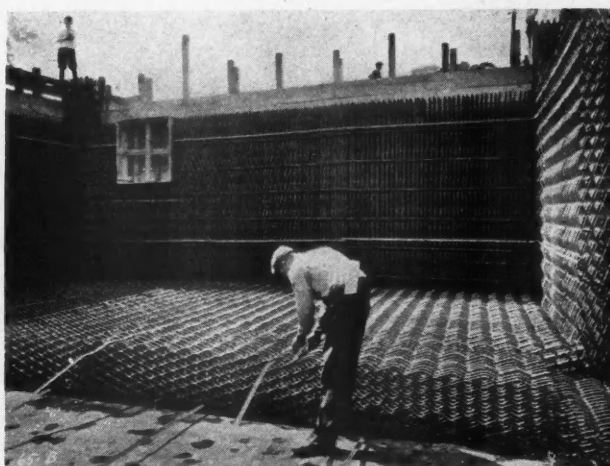


Fig. 2. Another Type of Expanded Metal Reinforcing Used in Bank Vaults with the Mesh Placed Vertically.

glar with his tools, the torch, and pneumatic hammer, explosive or the destruction of the entire building. Figs. 1 and 2 show different methods of vault reinforcing.

Fig. 1 is the type of reinforcing used in Federal Reserve Banks, and the larger banks of the country, in which the sheets of mesh in the walls are piled one upon the other so that the expanded metal forms a solid mat of steel embedded in the concrete. Fig. 2 shows another type of reinforcing in which the expanded metal is placed in a vertical position in the walls, making a very effective barrier against any form of attack. Fig. 4 shows a construction used for vaults, for fur storage and similar purposes in which also the mesh is placed vertically in the walls and floors and an additional sheet laid across this mesh with the whole mass of steel embedded in concrete. In each case the mesh employed is very heavy, weighing over $3\frac{1}{2}$



Fig. 3. Expanded Metal Has Proved Adaptable to the Reinforcing of Concrete Walls of Swimming Pools and Reservoirs.

pounds per square foot.

The adaptability of expanded metal to the reinforcing of walls for reservoirs or swimming pools, on account of its convenience in placing and the fact that the mesh remains in the position intended by the engineer once it is correctly placed, is shown in Figs. 3 and 5. This reinforcing material is also coming into favor for the reinforcing of stucco on buildings. This mesh has a smaller opening than some reinforcing mesh as used for concrete work, but is so designed that it holds the stucco with a strong bond and prevents cracks due to settlement or temperature changes.

Another very useful purpose to which expanded metal has been applied is the reinforcing of concrete fences, or walls, around industrial plants, recreation centers and large athletic fields. In walls constructed of concrete reinforced with expanded metal, light "H" columns are placed in a concrete base about 12

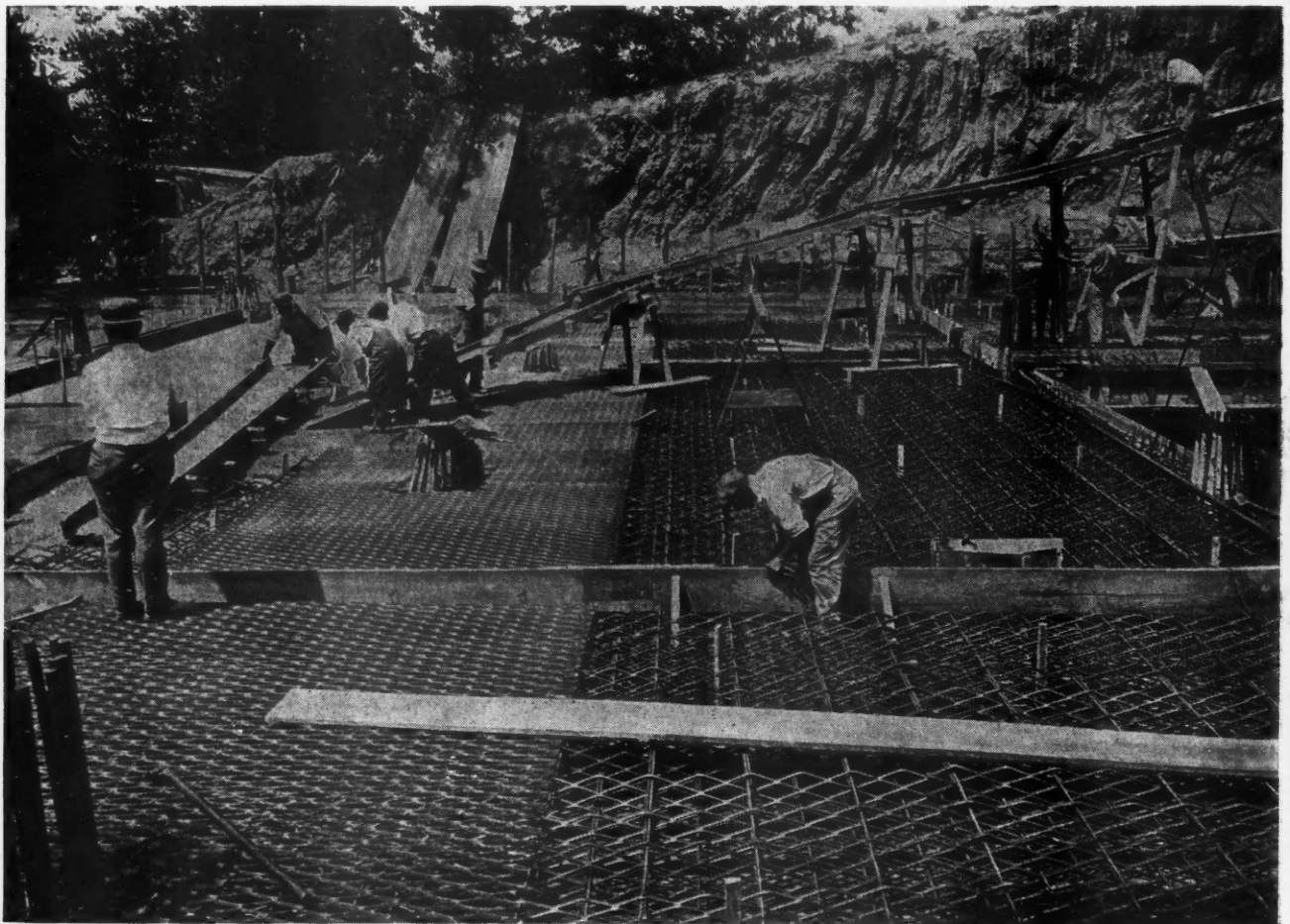


Fig. 4. This Type of Construction, with Expanded Steel Reinforcing in the Concrete, Is Used for Large Storage Vaults Such as Those in Which Furs Are Stored.

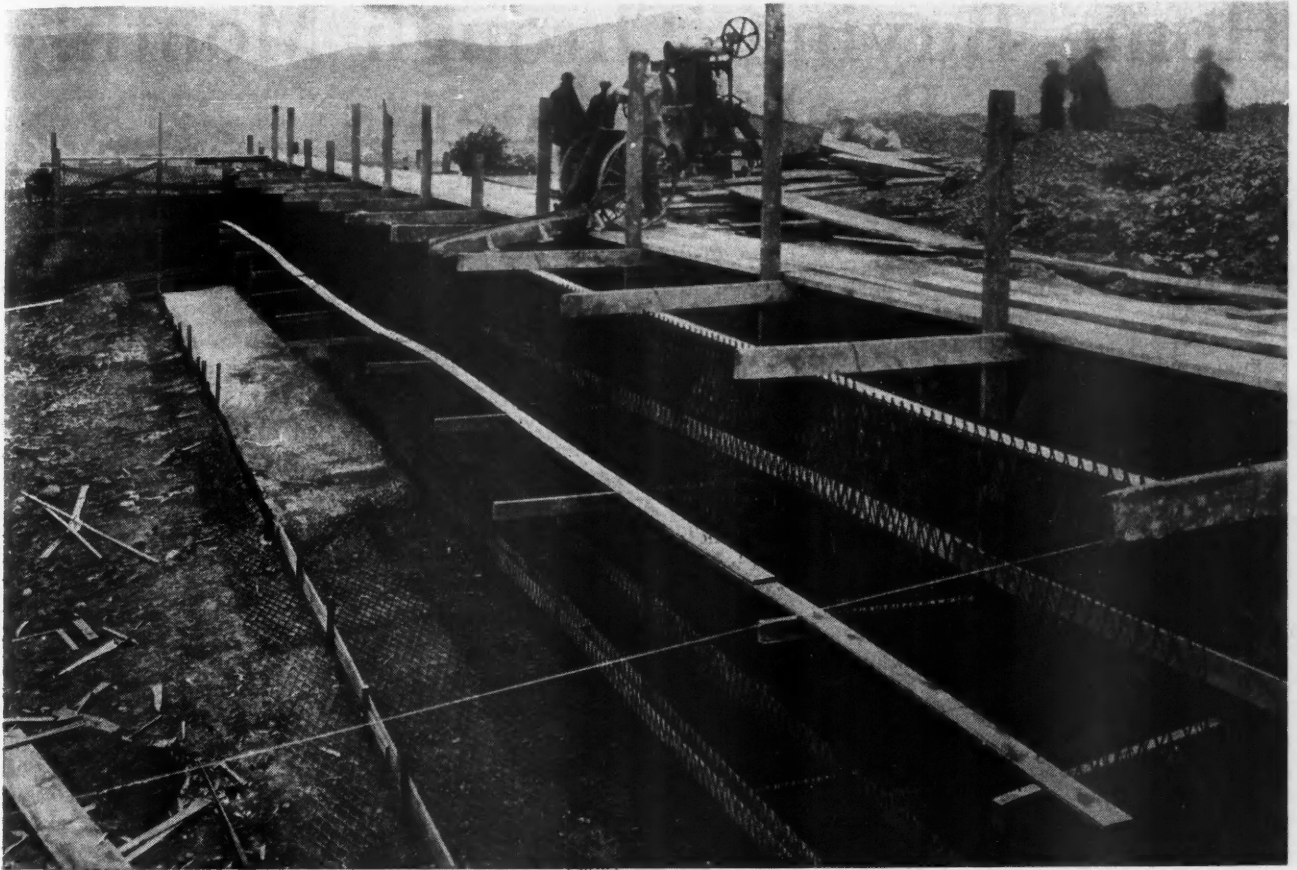


Fig. 5. When Used for Pool and Reservoir Wall Reinforcement, Expanded Metal Is Found Convenient to Place and Remains in the Proper Position After It Has Been Correctly Placed.

feet on centers, as shown in Fig. 6, and between these columns, solid reinforced concrete slabs are placed with a light derrick.

These slabs may be precast on the ground and placed between the columns after setting or the mesh alone may

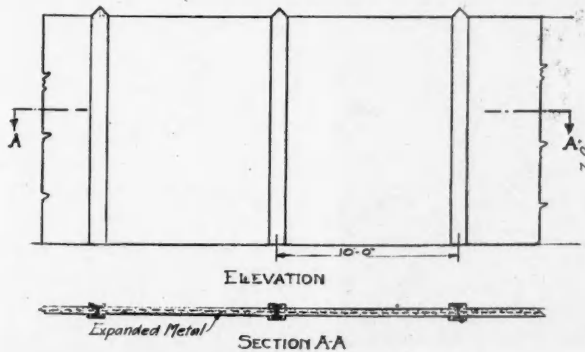
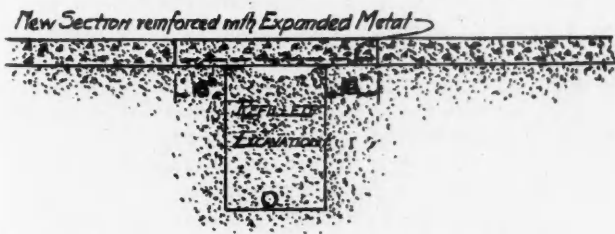


Fig. 6. Sketch Showing the Construction of Concrete Walls for Athletic Fields and Other Grounds with Light "H" Columns, Expanded Metal and Concrete.



REPAIRED ROADWAY REINFORCED WITH EXPANDED METAL

Fig. 7. The Repair of Excavations in Highways by This Method, Using Expanded Metal, Avoids Settling of Fill-Ins.

be placed between the columns and forms built up afterward. The columns are afterward enclosed with a form and concrete poured all around them and the top brought up to a point as shown. This wall will never require any attention on account of its strength and permanency. It is, at the same time, very attractive.

Garden furniture, made of concrete, also contains expanded metal to give it added strength and prevent cracks. Then, too, burial vaults are made of concrete with expanded metal as a strengthening factor. In these vaults the mesh is placed throughout as a means of reinforcing and also to prevent cracks which would cause the vault to lose its efficiency.

Fig. 7 shows a very useful application of expanded metal on highway repair work. Every motorist knows the reaction he receives when riding over a filled-in excavation along the road in which the replaced roadway has settled below the adjacent surface. Aside from this, the highway engineer will agree that such ruts are the forerunner of other disruptions to the adjacent surface and consequently cause increased repair bills.

To overcome this, the top section of the street is opened about 18 inches on each side of the excavation and when the repairs have been completed and the excavation filled in, a sheet of expanded metal is laid across the surface as shown in the illustration and the top layer of concrete finally poured. The expanded metal, in this case, provides a reinforcing for the top slab which will keep the surface of the street level and smooth despite the fact that the filled-in section beneath may have settled.

Many other effective uses of expanded metal in reinforcing concrete might be mentioned, including the floors of garages and porches of houses, pavements, sub-base for terrazzo floors, filter beds and all types of foundation work. In general, expanded metal will always prove a capable reinforcing in any concrete slab in which it may be placed.

Home Buying Through Monthly Bank Payments

A Simple and Safe Financing Method Proposed

By L. BRANDT

Housing Engineer

OWNING a home should be among the very first objects achieved in life. A home is a prized possession. It establishes standing and credit in the community. It is a mark of success, and can be handed down to future generations in the secure knowledge that it is a magnificent heritage. It is the place where children are born and reared, the hearthstone around which they will associate the glorious memories and recollections of their parents and their childhood days.

To assist and promote home ownership on the most prudent basis in a simple manner is the purpose of my "Certified Home Plan"—a complete financing plan for the purchaser so that after making a minimum down payment, all other payments to be made by the purchaser are combined in a fixed monthly amount, which he deposits with his local bank. This payment should include interest on first mortgage, interest and principal on secondary financing, fire insurance, taxes and a sinking fund for emergencies.

With a plan of this kind the purchaser can know and decide what monthly payment he can make. This in turn establishes the value of the house he can well afford to build or buy, and permits him to enter into the proposition with understanding and confidence.

The Certified Own a Home Plan

In the Certified Own a Home Plan, four interests are connected and co-ordinated. (1) The purchaser of the home, (2) the real estate operator who owns the land, (3) the local bank which handles all payments, (4) the loaning institution which supplies mortgage money.

Each principal performs his function as a part of the plan, and is fully protected and assured safety in his investment.

Particularly from the standpoint of the purchaser of the home, the Certified Own a Home Plan is the acme of simplicity. All of the many considerations to be taken into account in the purchase of a home have been so carefully worked out as to involve but one down payment at the time of purchase and one payment monthly thereafter to one source. All details concerning titles, mortgages, taxes, insurance, etc., are pooled and the purchaser has but one principal to deal with—the local depository.

The real estate operator who owns the land and builds the houses, deals with the purchaser, and a local bank or depository through which all monthly payments are cleared. On receipt of the purchaser's monthly payment, the depository distributes the installments so as to meet the neces-

sary payments on taxes, mortgages, insurance, etc., as they become due and payable.

The monthly payments involved in the Certified Own a Home Plan are the result of a carefully worked out arrangement to fit the rather complex and cumbersome home-buying methods of the past to the present national buying habits. The nation has been educated to make monthly payments. Rent, installments on automobiles, furniture, gas, electricity, household appliances are generally obtained on this basis. With the Certified Own a Home Plan, the home may be purchased under the same arrangement, everything involved being taken care of so that the family income need not be disturbed for semi-annual or annual withdrawals for taxes, interest, mortgages, insurance or other obligations.

In addition to the regular payments ordinarily required in the purchase of a home, the purchaser, under the Certified Own a Home Plan, builds up an equity in his home and at the same time lays aside an actual cash saving with the bank.

Besides the security and safety to the purchaser in the operation of this plan, the convenience of one down payment and succeeding monthly installments, there is no need for payment of fees for securing mortgage money which represents an appreciable saving on the initial purchase and financing.

Example

When a purchaser obtains a home under the Certified Own a Home Plan, he establishes his equity with a cash payment. This cash payment may be \$500.00, \$1,000.00 or \$1,500.00, according to the size and cost of the home. From that time on the plan provides for a combined monthly payment to a bank or a depository

to cover all the items of expense in owning and paying for a home. Ordinarily some of the items of expense in home owning calling for payments semi-annually or annually are sometimes lost sight of by the purchaser until they are actually due at which time he may not be prepared to meet them as he would on a monthly basis. In the Plan, the monthly payment is worked out to cover the following:

- A—Interest on first mortgage.
- B—Interest and principal on second mortgage,
- C—Fire insurance,
- D—Reserve for taxes,
- E—Savings account for emergencies.

It is impractical to show fixed monthly payments in this presentation as the amount of the monthly payment is



LEWIS BRANDT,
Housing Engineer, Pittsburgh, Pa.

controlled by local insurance and tax rates; however, the monthly payment in the purchase of a good substantial home may be \$50.00 to \$75.00 a month, and more or less according to the extent of the property purchased.

Evolution of the Certified Own a Home Plan

The Problems of the Purchaser

Keen competition between manufacturers of practically all necessities and luxuries of life has required them to so arrange the sale and purchase of their products that they may be readily purchased and easily paid for. The enterprising manufacturer takes advantage of every known factor of economic production in the making of his wares, employing the best minds obtainable. In addition, he generally arranges that his product may be purchased on terms which will be to the advantage of his customer, thereby overcoming sales resistance.

The manufacturer has approached the problem comprehensively as all problems should be approached, and he has solved it by eliminating, insofar as is humanly possible, the elements of speculation and guesswork. He knows before he begins to manufacture an article its probable future demand and the percentage of people who will most likely be interested in it. He knows exactly how its production, sale and ownership are going to be financed. The result is that the particular article is put on the market at a price and, because it may be easily purchased and paid for, without any question as to how long and how much will have to be paid, is easily and quickly sold.

Home production and selling on the other hand, have not generally been approached with this thoroughness. Present methods involve so many details to be worked out, and so many complications that the prospective home owner is too often confused. The result is that most people do not feel like putting forth the effort necessary under present practices in home owning, to work out the details on an understandable basis, or to undertake a problem that presents so many uncertainties and complications.

In working out this plan which simplifies building and owning of moderate cost homes, the various elements such as materials, labor, production, sales and financing have been gathered together, grouped and co-ordinated to the end that all uncertainties are eliminated. My Certified Own a Home Plan achieves what never before has been worked out or accomplished in the building industry.

Building Costs

It is not only the high cost of labor and materials that must be guarded against in home construction, but their waste which must be prevented. Land may be developed, utilities provided and houses built under well defined plans without due consideration being given to the ultimate cost factor. Due to custom and the established habit of years, when materials were plentiful and cheap, and labor costs low, many of the elements in final cost were lost sight of, and this has been the general rather than the exceptional case. This developed wasteful practices which are now receiving serious consideration in the work of housing associations, real estate organizations and loan institutions. These organizations while familiar with the problem, find

it difficult to solve since home building has been handled through so many different channels in effecting the complete home unit.

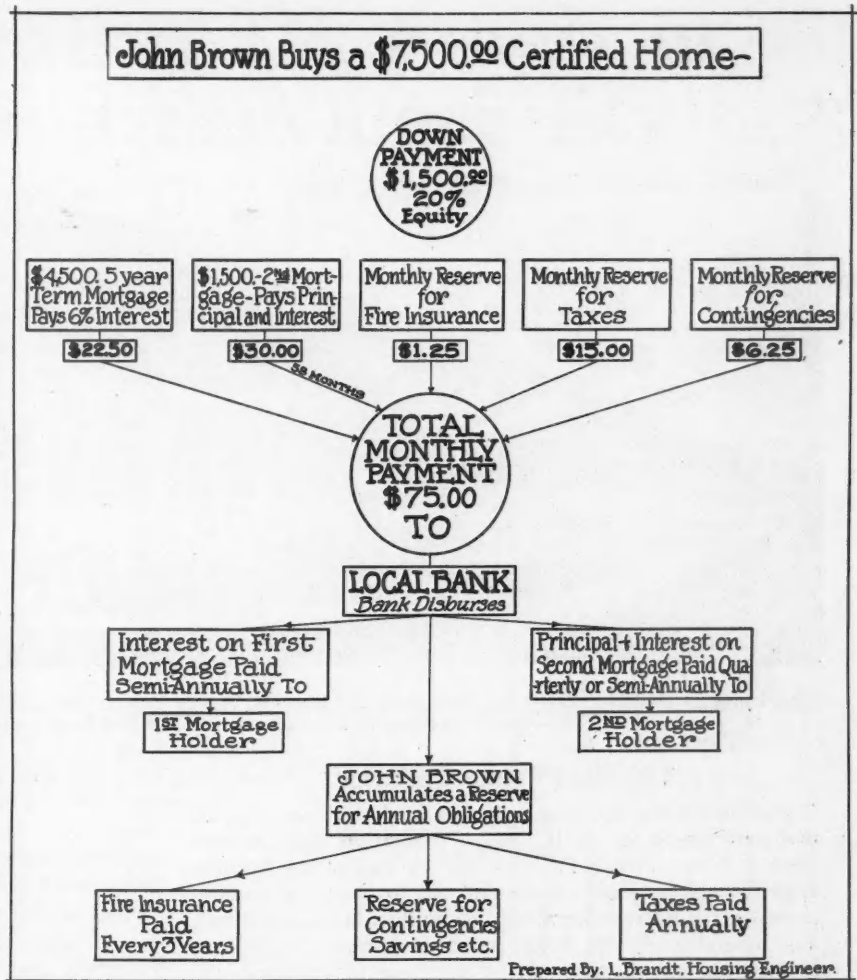
To meet these conditions satisfactorily, a co-ordinating service to develop plans and methods to handle the present complex and exasperating situation in financing, developing raw land, utilities and building problems is required.

During and since the World War, the cost of every element entering into home construction has increased. Improved building lots are scarce. The cost of developing building sites is high. Adequate financing is difficult to obtain since housing costs and sound values in many cases, are uncontrollable. This condition warrants the study of experienced and trained minds in its solution.

Simplicity of the Certified Own a Home Plan

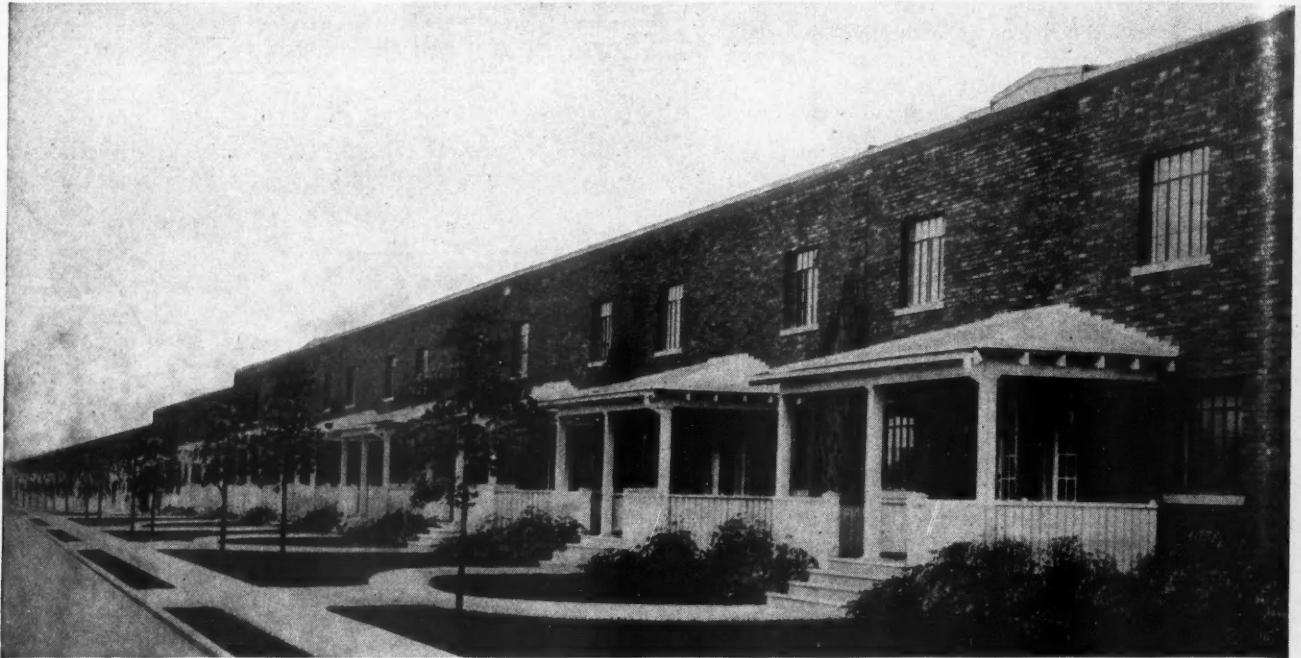
The problem of home building, selling, owning and financing will not be vexing or burdensome, when, through intelligent guidance, the proper co-ordination of the various agencies now employed in the work, has been effected. This co-ordination, however, is vital in arranging a proper set-up, and is most effective when employed on a wholesale or quantity basis. In this work the housing engineer makes the necessary appraisals, cost analysis, financing program, building site, plans, building improvements, contracts and effects supervision.

The chart shown on this page presents in graphic form a comprehensive plan for home owning and financing, in which the elements are co-ordinated and worked out in such a manner that the home owner can know with reasonable certainty, just how he is coming out.



This Chart Shows the Author's "Certified Plan" of Home Buying Through Monthly Payments to a Local Bank.

Prepared By: L. Brandt, Housing Engineer.



The Longest Building Used for Residence Purpose Is, According to the Builders, C. H. Harrison Co., of Ferndale, Mich., This Row of Houses in Pontiac. It is 1,296 feet long and was built in record time.

The Real Estate Operator

The real estate operator who has land to develop is the first interest to be dealt with in operating the Certified Own a Home Plan. Through the services of the housing engineer his property can be laid out to meet the requirements in the homes that should be built in his development. The operator should have sufficient working capital to finance the sub-division in the purchase of the land, the improvements of the streets, and the installation of utilities. He should have his lots clear of all encumbrances and established sufficient equity to secure commitments on first mortgages, and arrange with his local banking connections to function in the plan.

The First Mortgage

In applying for the first mortgage loans, the operator will present the housing engineer's cost analysis of the entire project which sets forth the sales prices, the cost of improved lots, and the cost of building the houses. The complete financial set-up proposed places construction on a cash basis so that the loaning institution is given full and definite information upon which they can make commitments.

The Bank

The local bank becomes, as it should, a very vital and important agency in the plan since the bank becomes the depository through which all payments are cleared.

The bank is an important factor at the beginning of the undertaking since it is consulted with reference to the advisability of carrying out the development and the part it may take in building and home owning in its community by acting as the bank for all interests. The local bank by functioning in the Certified Own a Home Plan, has a banking interest since it brings business to it and they have the accumulation of money collected for a period of time which in some respects has decided advantages over the average domestic account.

The Purchaser

The Plan will encourage and promote home ownership since the operator can establish a sales policy at the begin-

ning of his development offering purchasers safe and liberal terms with a minimum down payment. The monthly payment then completes the financing of the home for the purchaser, all his payments thereafter in owning and paying for a home being combined.

The monthly payment which covers all the expenses in buying and paying for a home safeguards all interests, especially the home purchaser since it puts him in position to understand the undertaking. From a monthly payment standpoint he can make his decision more securely than on the basis of total home cost as many people overburden themselves in the purchase of the home through a misunderstanding of total expenses involved.



The Portland Cement Association, 33 West Grand Ave., Chicago, has published a sheet of "Specifications for Making, Placing and Curing Concrete in Cold Weather," which is described as "Supplementary to the regular concrete specifications and to be added thereto," and which, if backed up with intelligent inspection, will give satisfactory work.



The Longest Residence

THE C. H. HARRISON CO., of Ferndale, Mich., builders of the row of houses illustrated here, states that this building which it has erected in Pontiac, Mich., is evidently the longest building used for residence purposes in the world and that it was also erected in the shortest length of time. At least it is certain that it measures up very close to both of these records.

The building was started on September 22, and there were families living in it just 40 working days later and the entire project of 72 units in the first building, together with 31 units in the second building, was completed and ready for occupancy on December 15, making a total of 65 working days after deducting Sundays and days when the men were unable to work because of weather conditions.

The length of the completed building is 1,296 feet and it contains, in all, 103 residential units which the owners have been most successful in renting.

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Demonstrating the Finest in Beauty and Serviceability

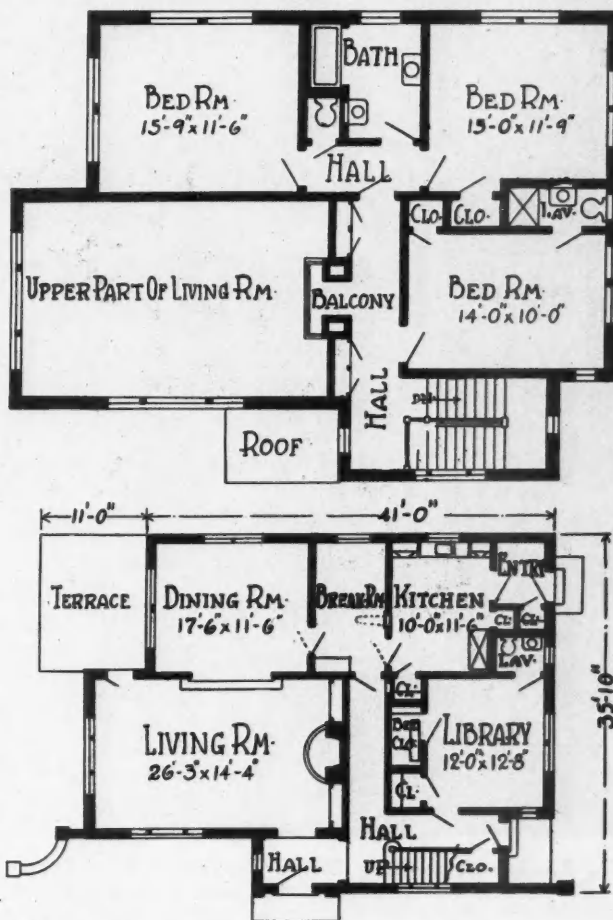
THE Beaumont Ideal Home represents the combined efforts of the Beaumont, Texas, building interests to demonstrate to the people of their city the very finest, in beauty and serviceability, in home construction. It was the culmination of a series of homes undertaken by the Beaumont Building Material Company in fostering the better homes movement and was sponsored by the Beaumont Enterprise and Journal with architects, contractors, material dealers and merchants co-operating.

The house which was the result of this undertaking, and which is pictured on this page, represents the best in design, materials, construction, decoration and furnishing, from foundations to roof. In it a particular effort was made to demonstrate what can be accomplished with fireproof construction materials in which the Beaumont Building Material Company specializes.

Foundations are of solid, reinforced beam construction on concrete piling every six feet, giving a positive assurance against wall cracks and settling. The solid concrete sub-floors are overlaid with two inches of water-proof material on which the hardwood floors are laid, guaranteeing non-warping doors and non-squeaking floors. The tile, used in flooring the living room, bathrooms and kitchen, was selected and laid by experts from the factory and all other floors are of quarter-sawed red oak.

The basement, 24 by 22 feet, was designed primarily to house the steam heating plant, but is sufficiently large so that it may also be used for storage. Walls and floors are waterproofed with several layers of an asbestos felt and hot asphalt water-proofing material and in addition a waterproofing compound was used integrally in the concrete. This assures an absolutely water-tight room and the floors above the basement are built of reinforced concrete to minimize the fire hazard.

Outside walls are built of an interlocking, hollow tile which affords a high degree of insulation against cold in winter and heat in summer. They are faced with a face



One Feature of the Plan Is a Two-Story Living Room with a Fascinating Balcony Over the Fireplace.



The Tall Window, Extending from First to Second Floor, Is an Impressive Part of the Front Elevation of This Beautiful Home. In it Belgian glass of varying colors was used most effectively and this is typical of all of the details of the Beaumont (Texas) Ideal Home.

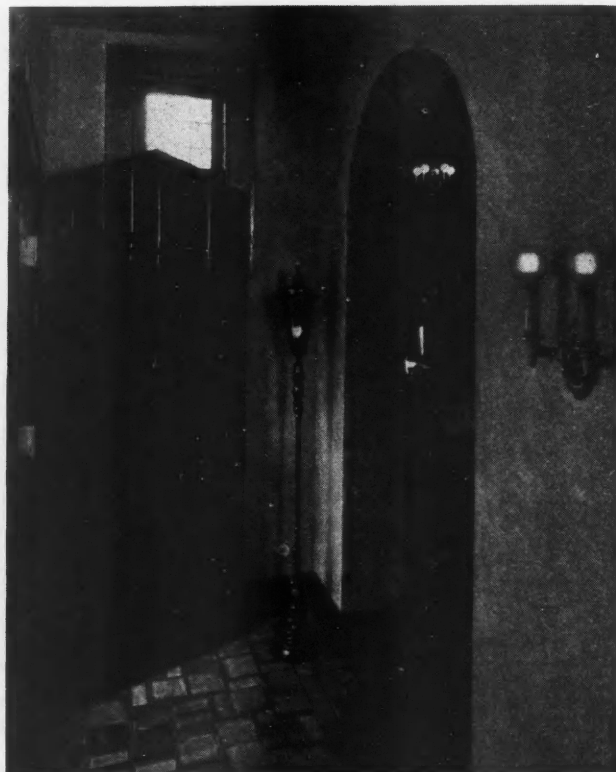


The Spacious Two-Story Living Room with Its Balcony Above the Fireplace, Heavily Beamed Ceiling, Beautiful Tile Floor and Low Steps Leading Up to the Dining Room at the Right.

brick known as smoked rug while the roof is of selected asbestos shingles of a darker color than the brick, but blending with it and shaded to a dark brown or umber tone. This roofing material was selected without regard to price on the basis of its high rating by the underwriters and its beauty and adaptability to the style of the house.

The architectural treatment, by Livesay and Wiedemann, Architects, of Beaumont, is Italian in style. Since Italian architecture is best reproduced by light variegated colors of either stone or stucco, a brick was selected for the facing which most closely approached this scheme.

Passing to the interior, it will be noted that the waterproofing composition used over all sub-floors not only excludes all dampness, but is also fire and vermin proof and acts as an insulation



Even in the Entrance No Detail Has Been Overlooked in Making the House Artistically Complete.

against noise. Very little sound is produced in walking over any of the floors. The tile flooring of the living room is all handmade and after it had been laid the man in charge of the job defied anyone to find two tiles that were exactly alike. It was said that this was the most elaborate pattern ever turned out by the factory making this tile. The colors in all the tile floors are absolutely permanent. In the main bathroom the floor tiles are of a dark blue with a baby blue on the side walls and white overhead. In the other bathrooms pink tones with white overhead are used. All of the bathroom fixtures are of the built-in type and include shower baths in both bathrooms.

The interiors of all rooms are plastered over metal lath and finished with a plastic material which permits practically any texture and color that the decorator may con-

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ceive. In the living room this has been used to obtain a reproduction of the water-soaked and stained walls of those century old buildings for which Italy is renowned. This spacious room is two stories in height with a fascinating balcony above the fireplace and heavily beamed ceiling. The floor is covered with random tile and all doorways are arched.

From this living room there are two steps up into the adjoining room, the furnishings of which, by a local merchant, are one of the most striking features of the house. All of this dining room furniture is hand carved from solid walnut in an exact duplication of the furniture of the sixteenth century, Italian Renaissance. At one side of the dining room is a terrace, sheltered from the street by the projection of the living room, while at the other side is a



A Glimpse of the Dining Room from the Living Room Shows the Charming Effect of the Approaching Steps Leading Up to a Doorway of Irreproachable Design.



Bathrooms Completely Tiled and Equipped Are Found Above Stairs with Dark Blue Floor, Baby Blue Walls and White Ceiling in This One.

breakfast nook forming, also, a passage from the kitchen.

On the first floor, too, there is a library with a bed closet and lavatory which make it readily available as an extra bedroom when required. From an interior hallway stairs ascend to the second floor and over these stairs there is a long window extending the full height of the two stories. Belgian glass of varying colors was used in this window and the color scheme is a work of art, a striking and impressive feature of the home.

On the second floor there are three bedrooms and two bathrooms. The same perfection of finish, decoration and furniture, seen on the lower floor, are carried out in these upper rooms and the large master bedroom overlooks a beautiful garden linking up with the perfectly appointed garage

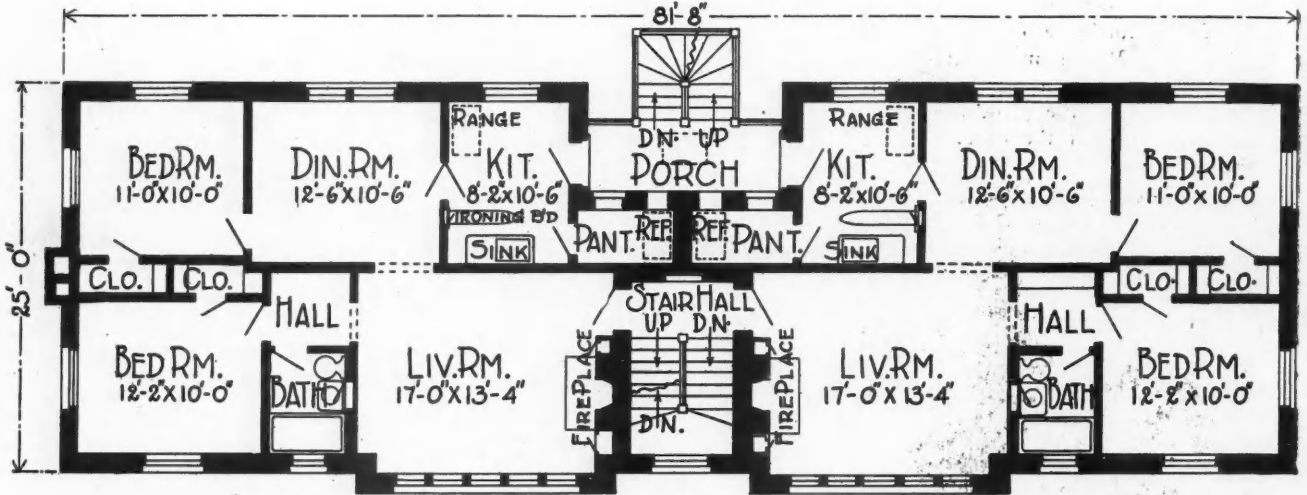
and servants' quarters at the rear of the lot. All of the numerous closets are cedar lined to protect the contents against the invasion of moths. There are radio plugs provided in certain of the rooms and built-in niches for telephones, while an electric refrigerator in the kitchen assures a constant supply of ice and perfect preservation of foods.

One interesting item which illustrates the very complete equipment of this house is the master key system used. One master key will unlock every door, inside and out.



The Ceiling Fans Seen in Nearly Every Room Are a Feature Particularly Appropriate to a Complete Home in This Texas City Where the Summers Are Long and Warm.

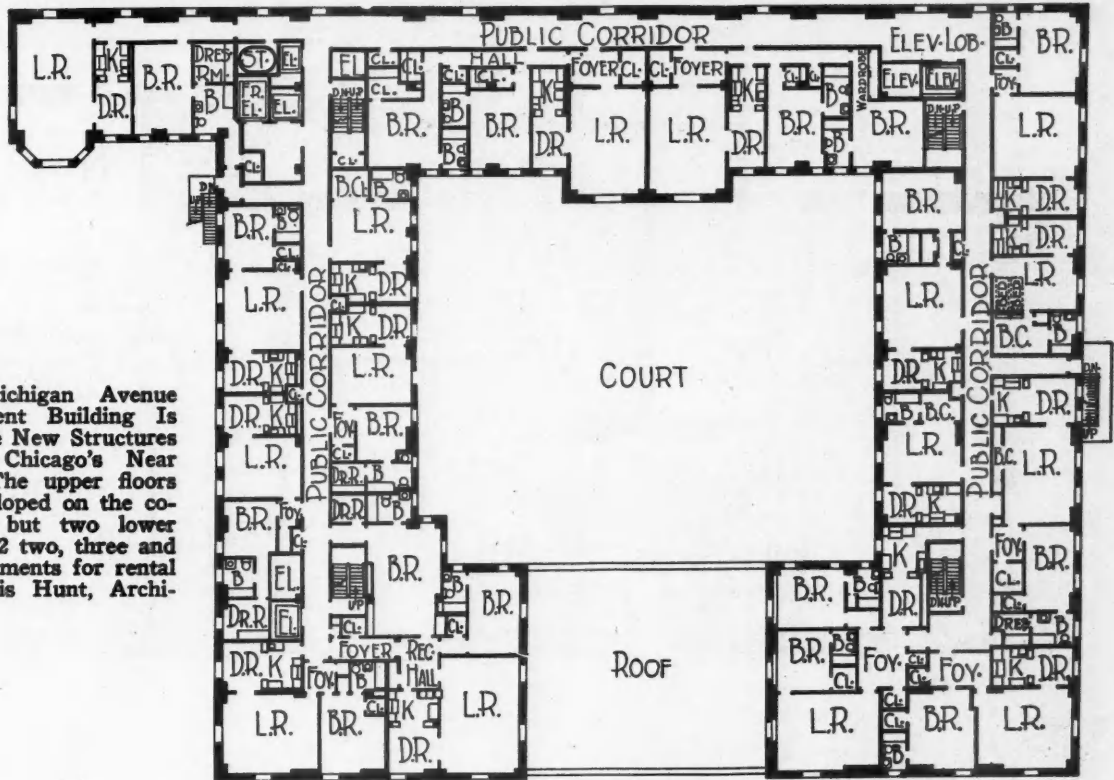
APARTMENT HOMES



These Five-Room Apartments Are Exceptionally Well Planned to Provide Attractive and Comfortable Homes. They are compact but roomy, and are light and airy with cross ventilation in all bedrooms. They boast that highly desirable feature, so rare in apartments, a fireplace in the living room.

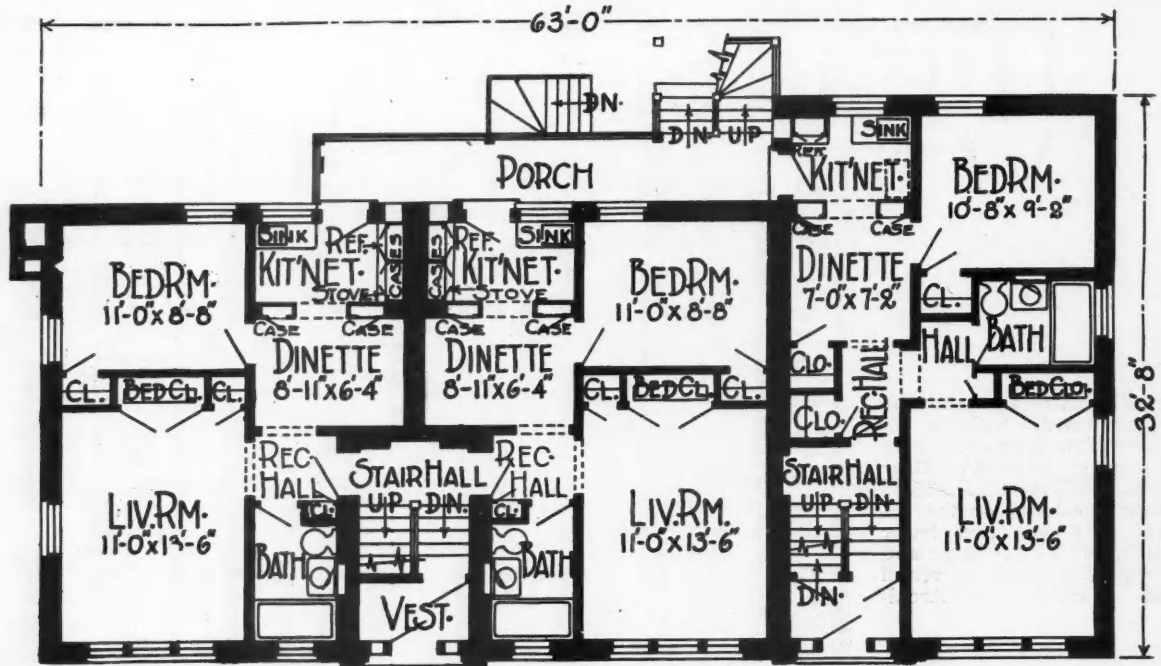


For the Wide, Shallow Lot, a Building Such as This One, Which Was Designed by Bernard L. Roos, Architect, of Chicago, Is an Excellent Type of Improvement. Though Simple of Exterior, It Is Attractive in Appearance and Provides a Group of Highly Desirable Homes.



The 900 Michigan Avenue North Apartment Building Is One of the Fine New Structures Which Grace Chicago's Near North Side. The upper floors have been developed on the co-operative plan but two lower floors provide 32 two, three and four-room apartments for rental purposes. Jarvis Hunt, Architect.





Another Apartment Building Suitable for the Development of a Wide Shallow Lot Is This Three-Story Building Designed by Bernard L. Roos, Architect, Chicago. Each floor contains three compact dwellings, providing living room, bedroom, bath, dinette and kitchenette.



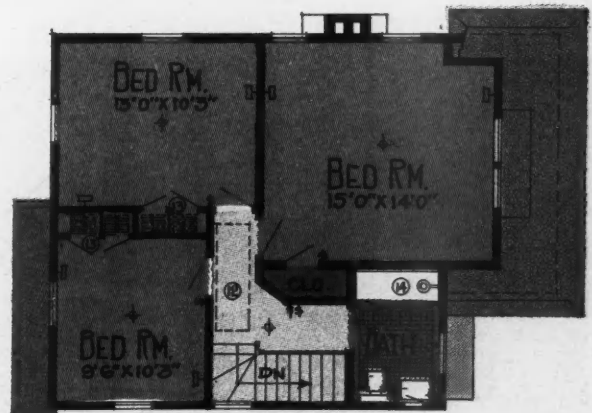
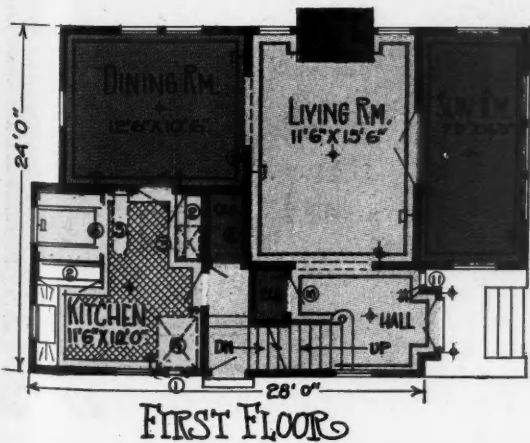


The FALLSTON

A PERMANENT home on a narrow lot containing six rooms and bath besides the big solarium. This home is designed for a maximum of light and cheerfulness.

COLOR KEY TO PLANS

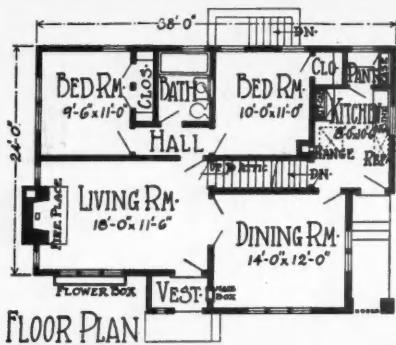
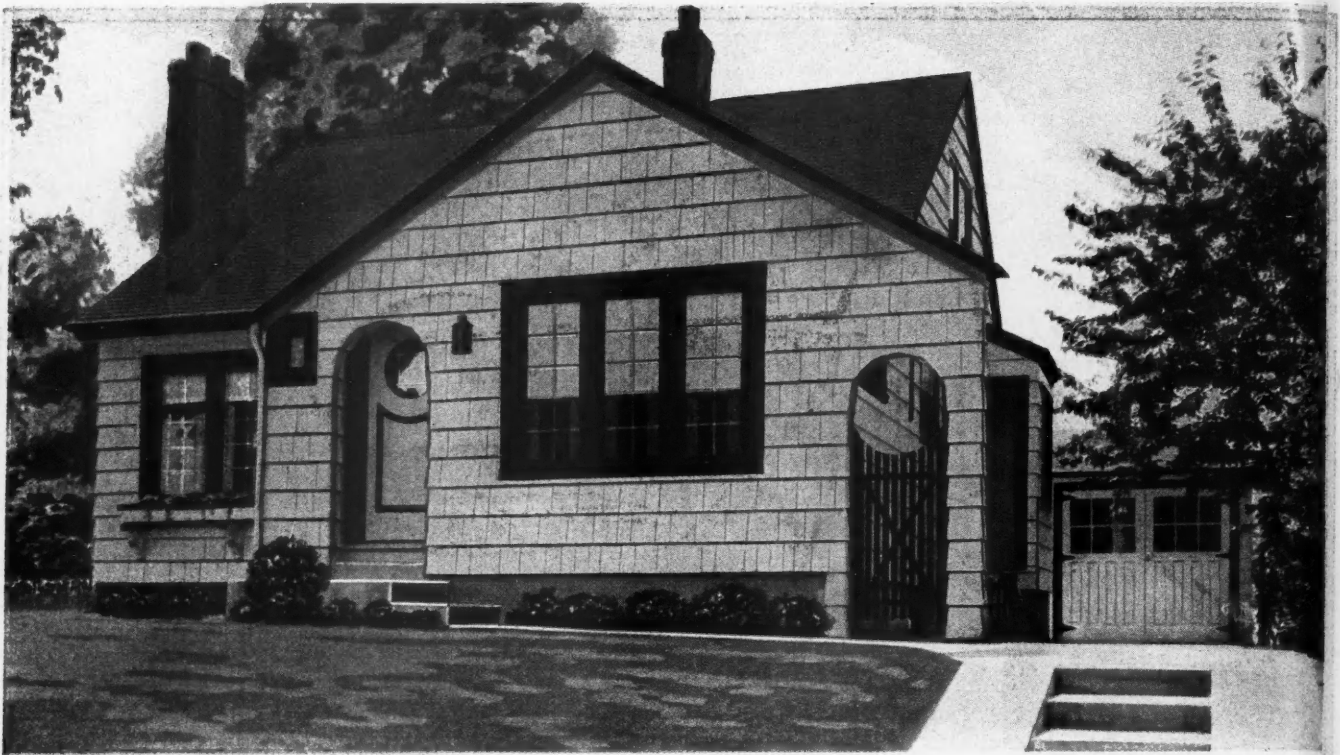
	LIVING ROOM		CLOSET
	DINING ROOM		BED ROOM
	KITCHEN		BATH AND LAV.
	PANTRY		PORCH
	HALLS		ROOF



SECOND FLOOR

Key to Equipment

- | | | |
|-------------------------------|------------------------|---------------------|
| ① Ventilating Fan | ⑫ Disappearing Stair | Washing Machine |
| ② Kitchen Cabinets | ⑬ Space-Saving Closets | Clothes Drier |
| ③ Refrigerator | ⑭ Tub Shower | Coal Chute |
| ④ Range | Weatherstrips | Heating Plant |
| ⑤ Ironing Board | Storm Sash | Hot Water Supply |
| ⑥ Breakfast Nook | Screens | Water Softener |
| ⑦ Thermostat | Lighting Fixtures | Garbage |
| ⑧ Broom Closet | Convenience Outlets | Incinerator |
| ⑨ Fireplace Throat and Damper | Electric Panel | Radiant Gas Heaters |
| ⑩ Mirror Door | | Casement Windows |
| ⑪ Built-in Mail Box | | |

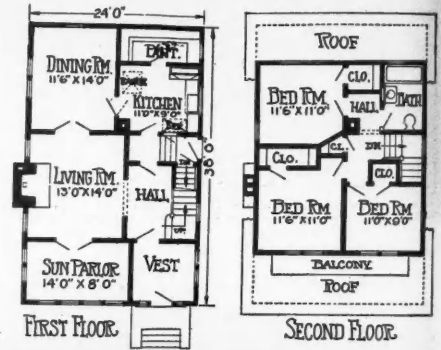


The GILEAD

Above and to the left is a delightful five-room house, small and inexpensive but making a delightful home.

The GILTEDGE

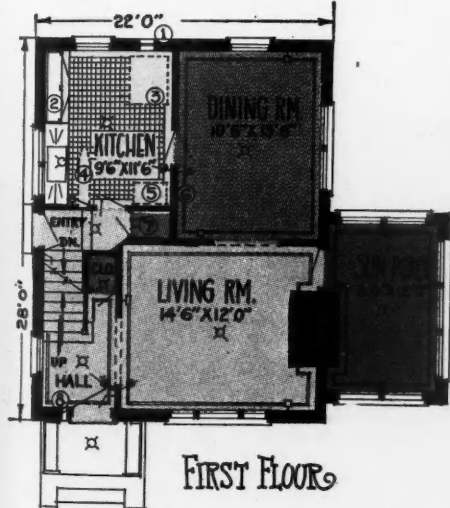
Below and to the right is a most popular six-room home, really seven rooms counting the sun parlor. This layout, 24 x 38 feet, goes on a narrow lot and makes a very satisfactory home.





The FLETCHER

A POPULAR design for close-in city construction is the six-room brick home pictured above. Where space permits the sun room addition is worth all that it costs. Such a home can be made very attractive.



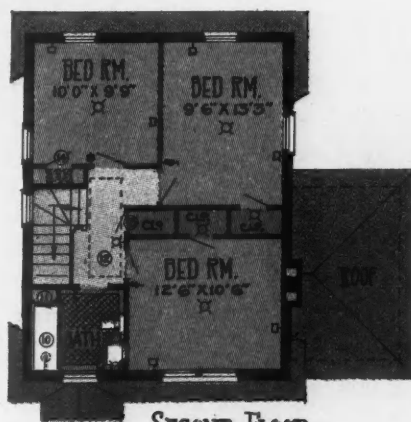
FIRST FLOOR

Weatherstrips
Storm Sash
Screens
Lighting Fixtures
Convenience
Outlets
Electric Panel
Washing Machine
Clothes Drier
Coal Chute

Heating Plant
Hot Water
Supply
Water Softener
Garbage
Incinerator
Radiant Gas
Heaters
Casement
Windows

COLOR KEY TO PLANS

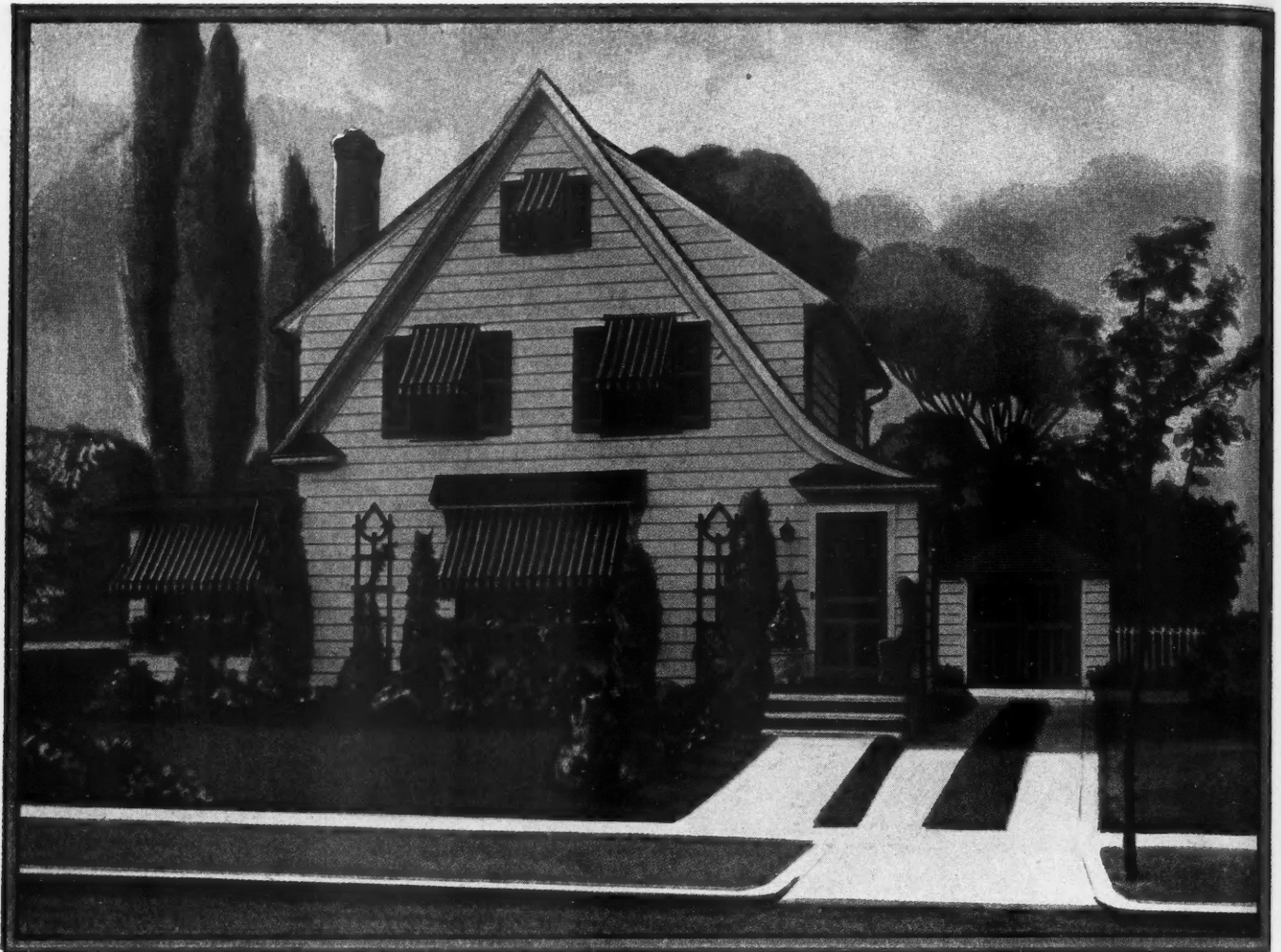
	LIVING ROOM		BED ROOM
	DINING ROOM		BATH AND LAVATORY
	KITCHEN		PORCH
	PANTRY		ROOF
	HALLS		
	CLOSET		



SECOND FLOOR

Key to Equipment

- ① Ventilating Fan
- ② Kitchen Cabinet
- ③ Range
- ④ Ironing Board
- ⑤ Refrigerator
- ⑥ Thermostat
- ⑦ Broom Closet
- ⑧ Built-in Mail Box
- ⑨ Fireplace Throat and Damper
- ⑩ Tub Shower
- ⑪ Linen Case
- ⑫ Disappearing Stair
- ⑬ Moth-proof Closet

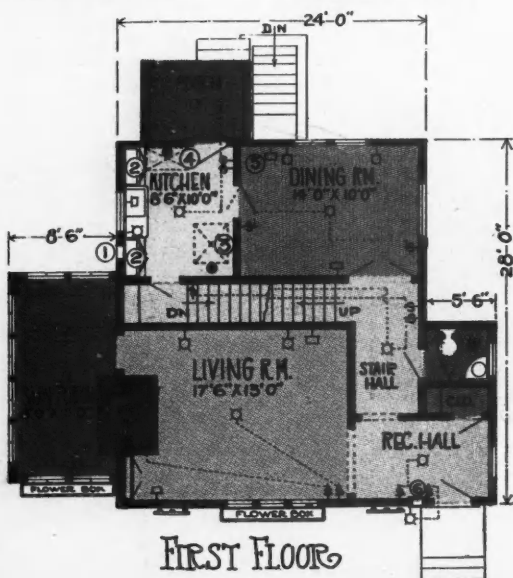


The FREDERICK

HERE is a very artistic home of six rooms, bath and sun porch. The reception hall, stair hall and adjoining lavatory are a special feature of this design. These ColorKeeD Plans deserve close study for the wiring and equipment suggestions they present.

COLOR KEY TO PLANS

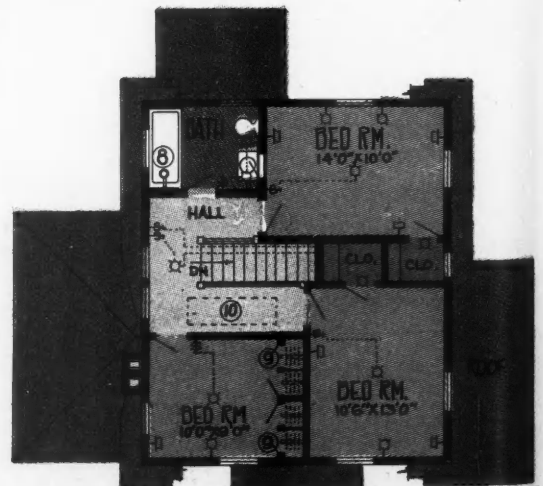
	LIVING ROOM		CLOSET
	DINING ROOM		BED ROOM
	KITCHEN		BATH AND LAVATORY
	PANTRY		PORCH
	HALLS		ROOF



FIRST FLOOR

Key to Equipment

- ① Ventilating Fan
- ② Kitchen Cabinets
- ③ Range
- ④ Refrigerator
- ⑤ Thermostat
- ⑥ Built-in Mail Box
- ⑦ Fireplace Throat and Damper
- ⑧ Tub Shower
- ⑨ Efficiency Wardrobe
- ⑩ Disappearing Stair



SECOND FLOOR

- Weatherstrips
- Storm Sash
- Screens
- Lighting Fixtures
- Convenience Outlets
- Electric Panel
- Washing Machine
- Clothes Drier
- Coal Chute

- Heating Plant
- Hot Water Supply
- Water Softener
- Garbage Incinerator
- Radiant Gas Heaters
- Caseament Windows

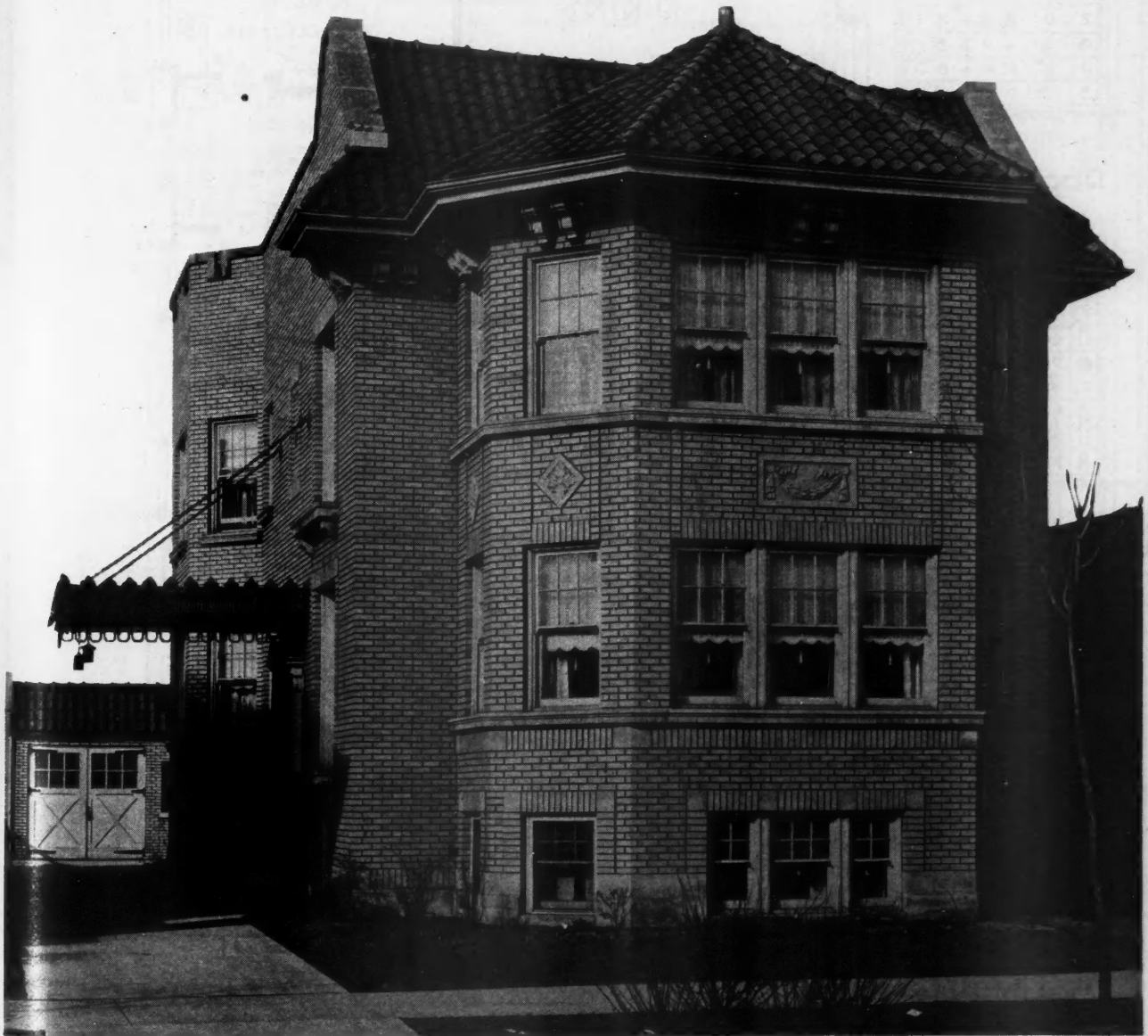
OUR FRONT COVER HOME



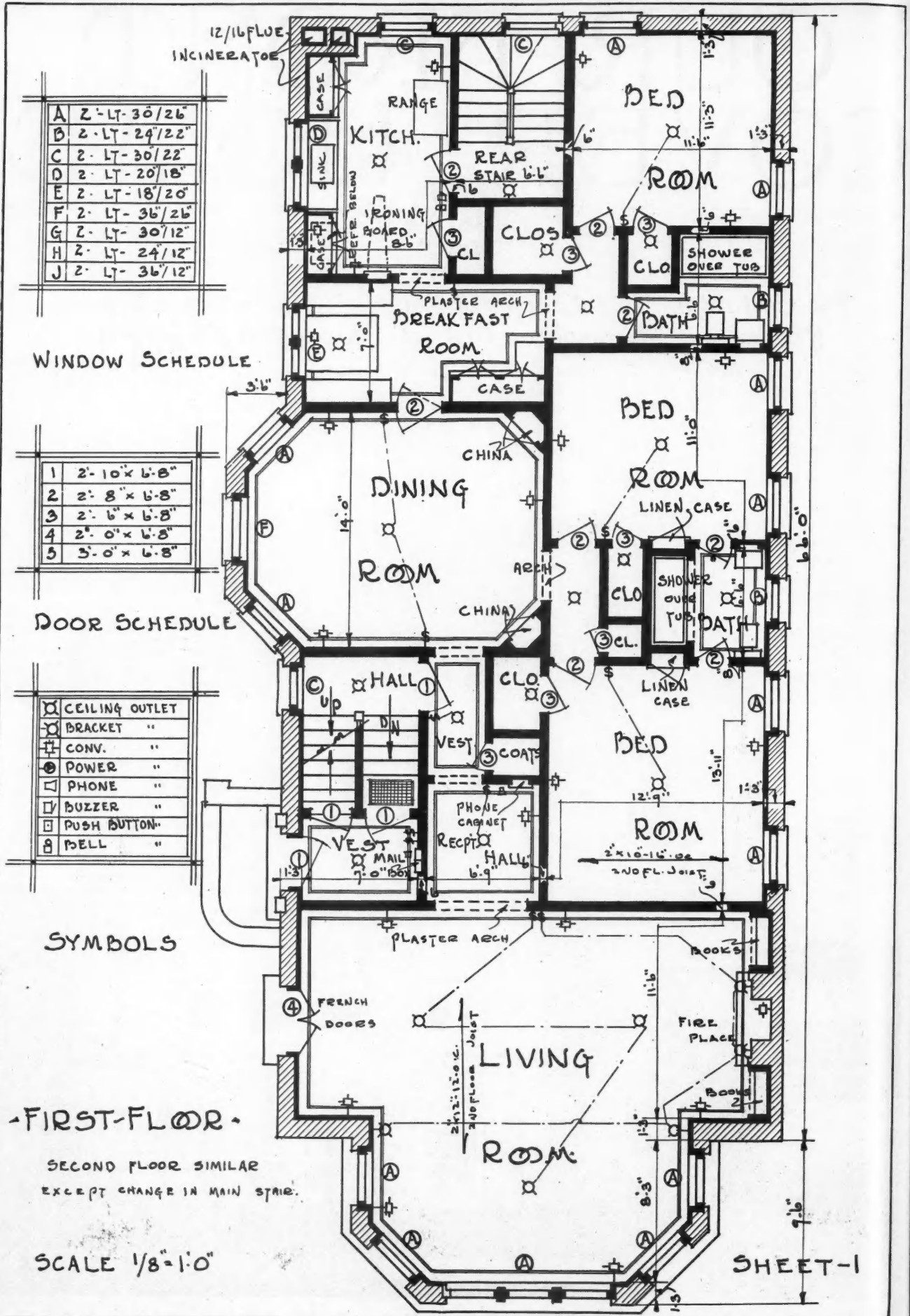
The Up-to-date Two Apartment Building is a Preferred Type of Residence in Metropolitan Districts Throughout the Country

THE truly modern type of two apartment building, such as the one selected for Our Front Cover Home, offers the tenant a real home with almost every feature to be had in the single family residence and certain conveniences not available in a house. That this is actually

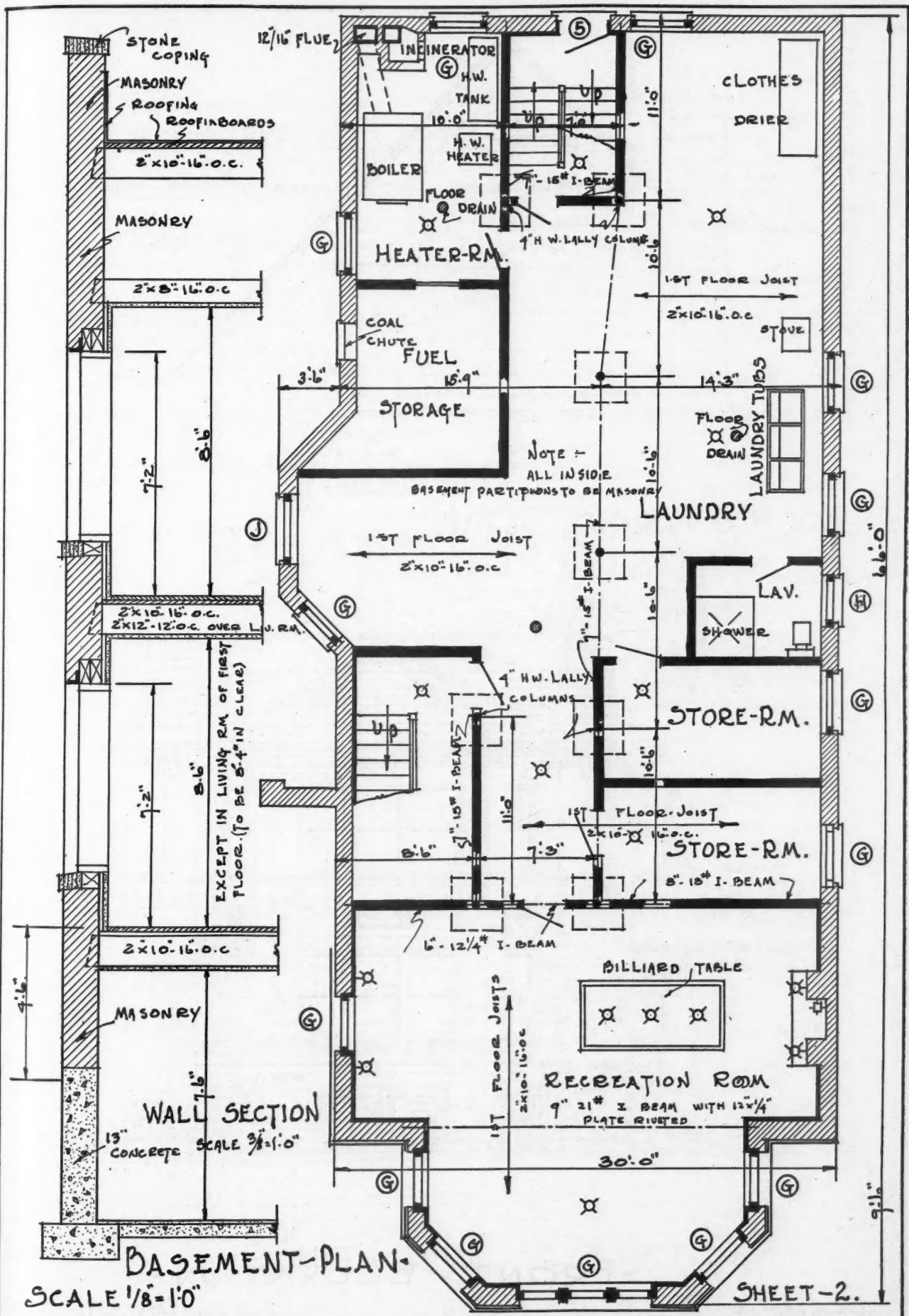
so may be seen by reference to the four pages following this on which are reproduced, to scale, complete working plans for this building. The second floor plan is not shown, but is the same as that for the first floor except for the necessary change to accommodate the main stairway.



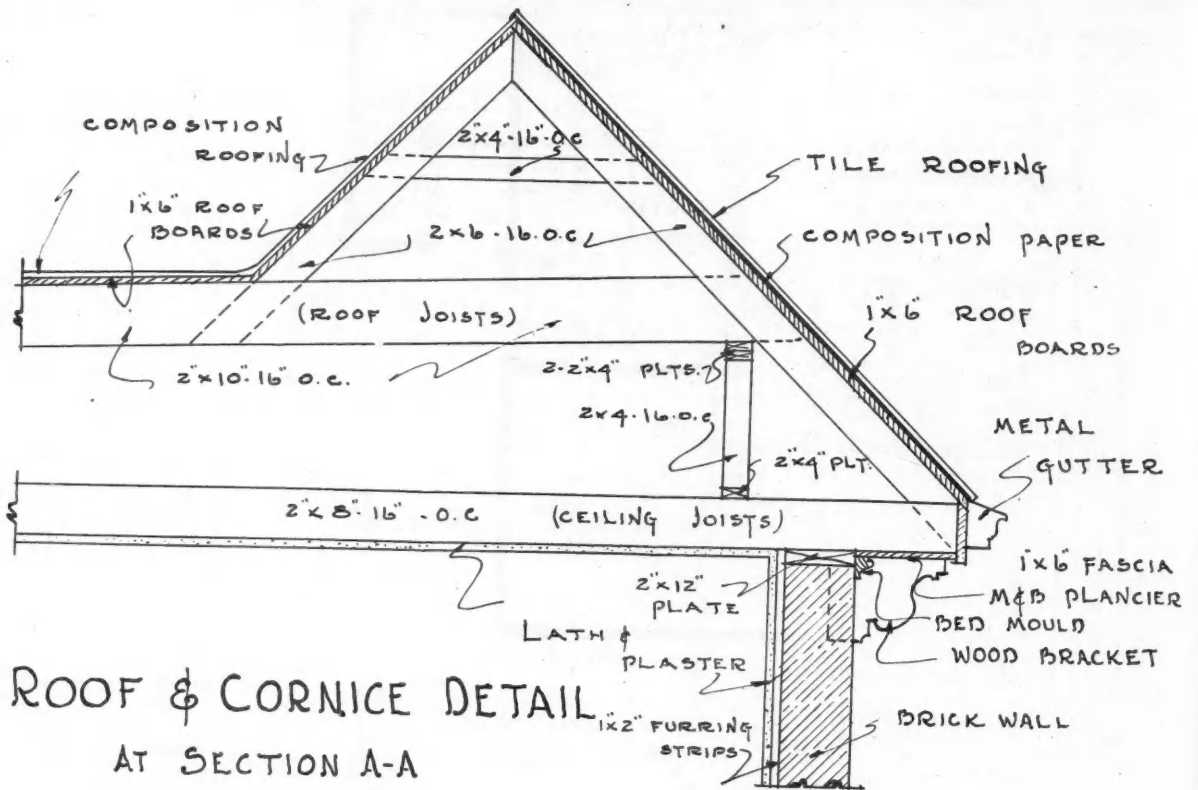
This Is the Type of Apartment Building Which Is Doing so Much to Beautify the Residential Sections of Our Cities.
It is shown in full colors on the front cover.



This First Floor Plan of Our Front Cover Home Also Applies to the Second Floor.



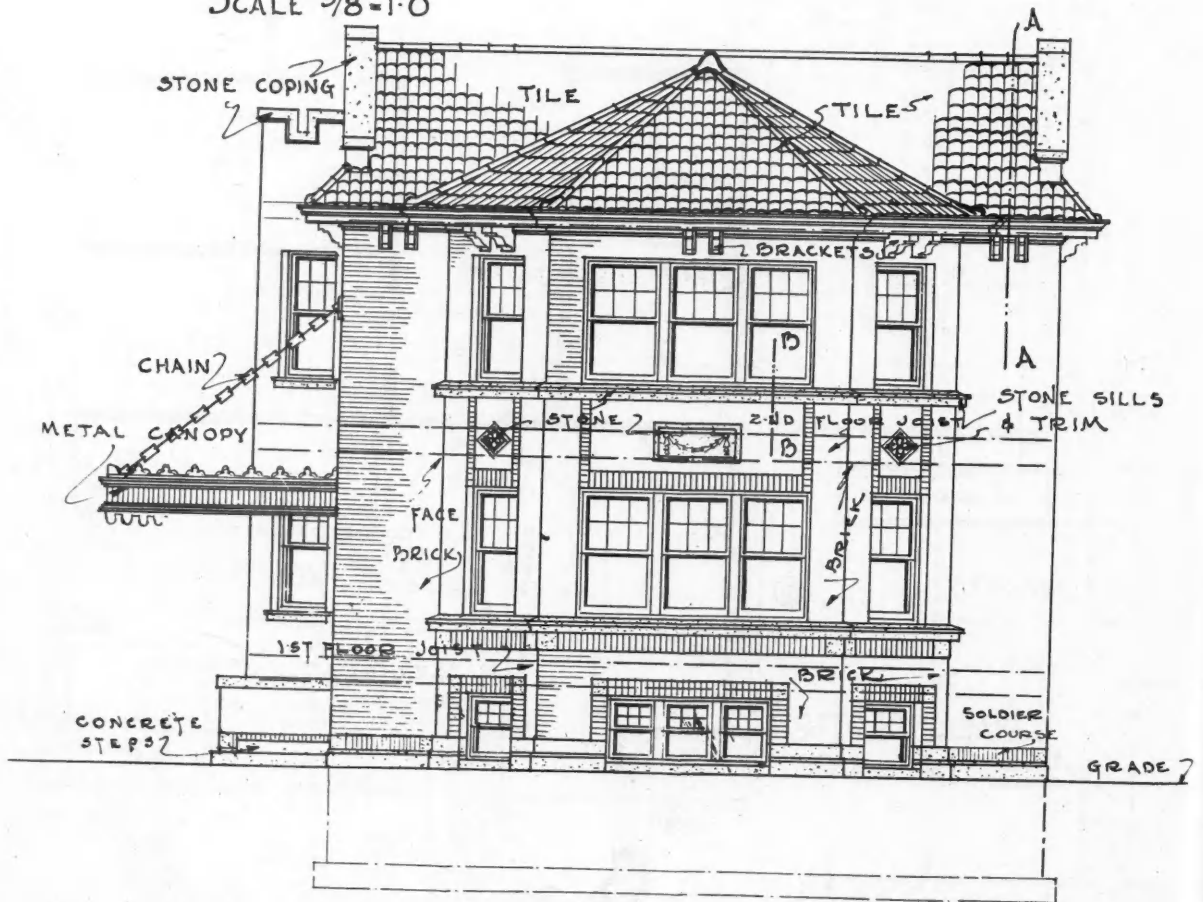
The Basement Contains, in Addition to the Usual Laundry, Store Rooms and Heating Plant, a Recreation Room.



ROOF & CORNICE DETAIL

AT SECTION A-A

SCALE 3/8"=1'-0"

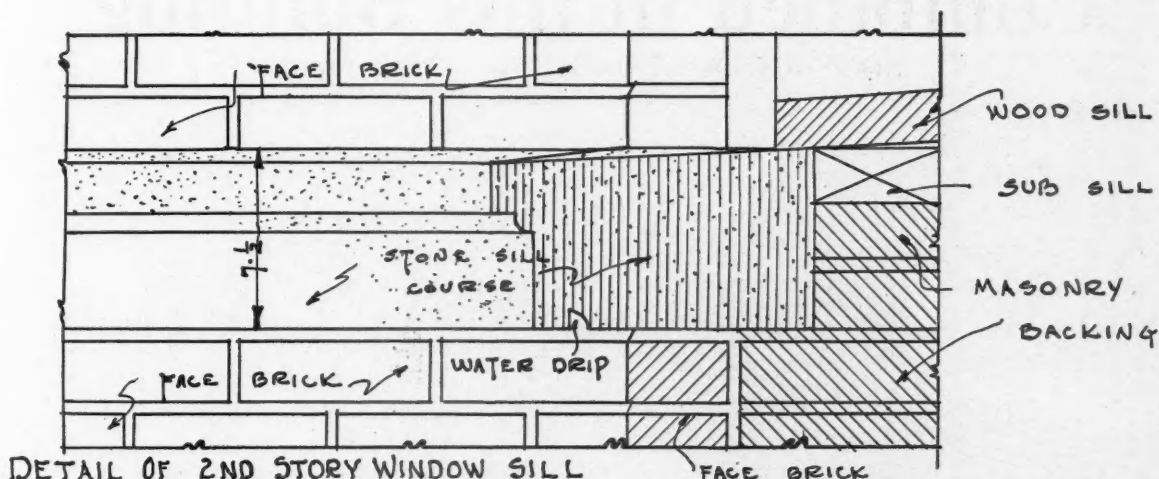


FRONT - ELEVATION

SCALE 1/8"=1'-0"

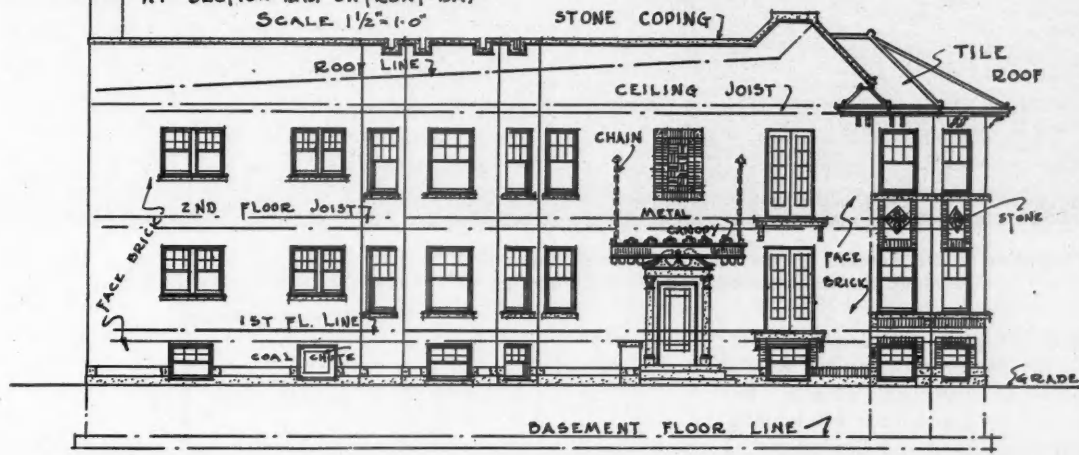
SHEET - 3.

Front Elevation and Roof and Cornice Details of Our Front Cover Home Two-Apartment Building.

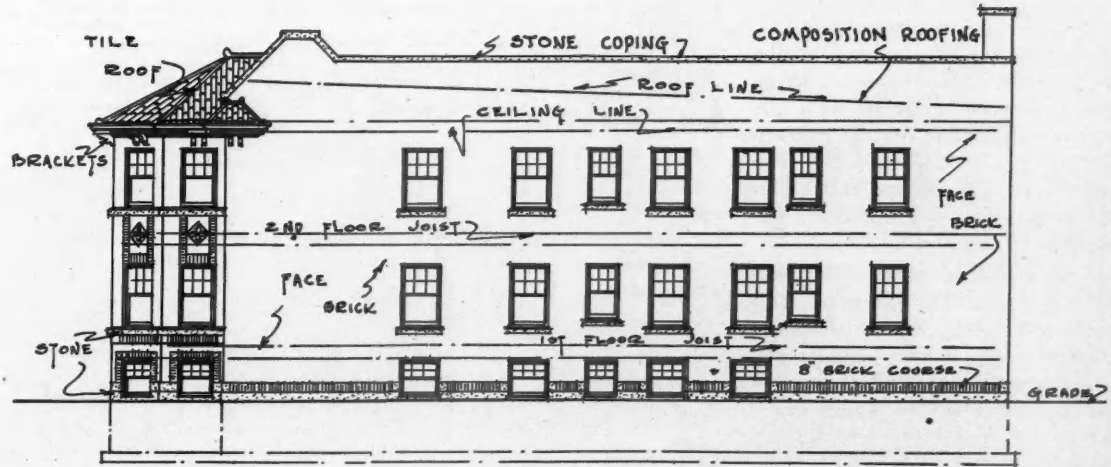


DETAIL OF 2ND STORY WINDOW SILL

AT SECTION B-B. ON FRONT BAY
SCALE 1/2"=1'-0"



◀ LEFT - SIDE - ELEVATION ▶



◀ RIGHT - SIDE - ELEVATION ▶

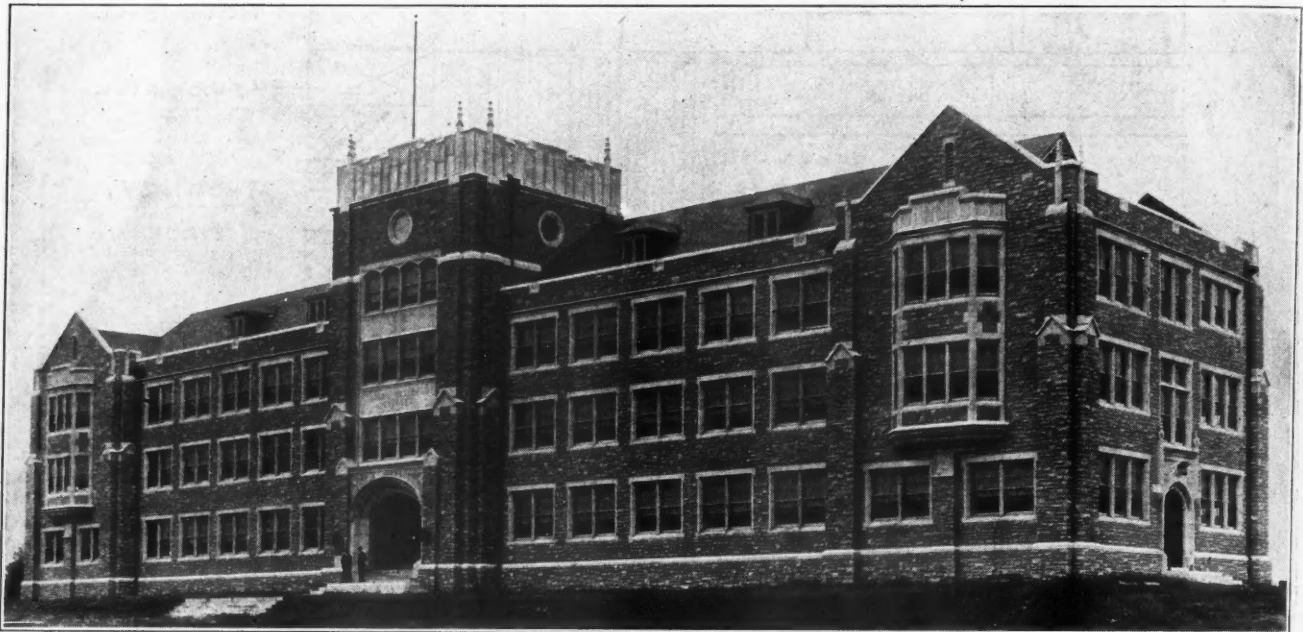
SCALE 1/16"=1'-0"

SHEET-4:

And Here Are the Side Elevations and a Detail Drawing Showing the Masonry Construction of Our Front Cover Home.

Auditorium, Stage and Gymnasium Combined in this Building

BONSACK & PEARCE, Inc., Architects



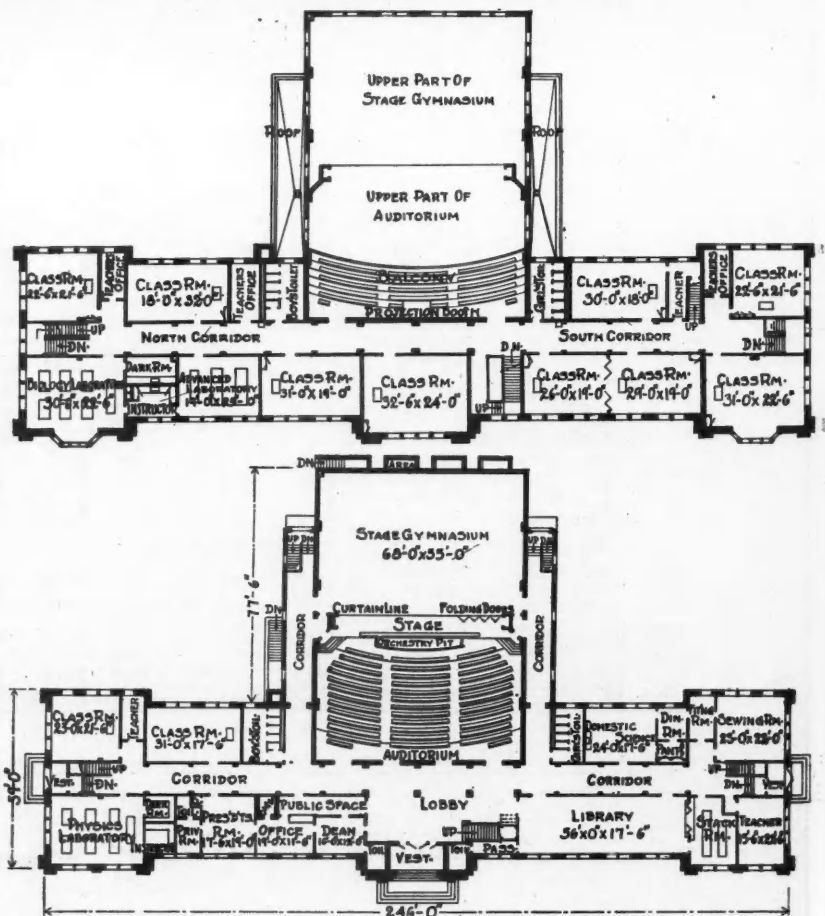
The First Building to Be Erected on the New Campus of the Ozark Wesleyan College, at Carthage, Mo., Was Built of Carthage Stone Obtained from Local Quarries and Producing an Effective Exterior.

OZARK Wesleyan College, a co-educational institution operated by the Methodist Episcopal Church, has recently moved its home from Marionville, Mo., to Carthage, Mo., and has erected a new and modern college plant. Bonsack & Pearce, Inc., of St. Louis, Mo., were selected as the architects, and designed the building shown on this page, the first to be erected on the campus.

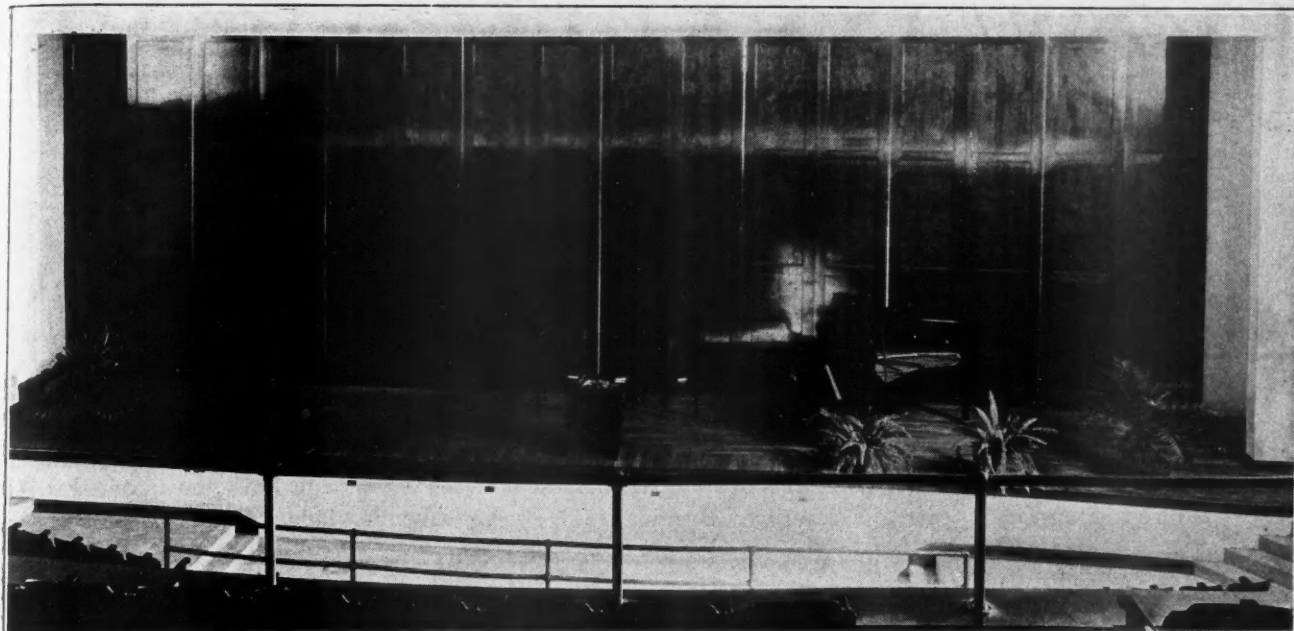
This building is done in the Tudor Gothic style of architecture from Carthage stone, a product of the quarries located in the vicinity of Carthage, Mo. The construction is fireproof, reinforced concrete with the Carthage stone walls laid up in random ashlar. The roof is of slate and the trim of Carthage stone. The cost of this building, without equipment, was slightly in excess of \$250,000.

The building contains, on the first floor, the general offices of the institution, college library and stock room, domestic science department, physics department, two large recitation rooms and the necessary toilets. On the second floors, there are nine recitation rooms of various sizes, the biological laboratory, incorporating the general laboratory and supply room, instructors' rooms and an advanced laboratory.

On the third floor are the chemistry department, with general and advanced laboratories, the instructors room, dark room and lecture room, three recitation rooms



First and Second Floor Plans of the Building Show the Arrangement of Various Departments and of the Unusual Stage and Gymnasium Combination.



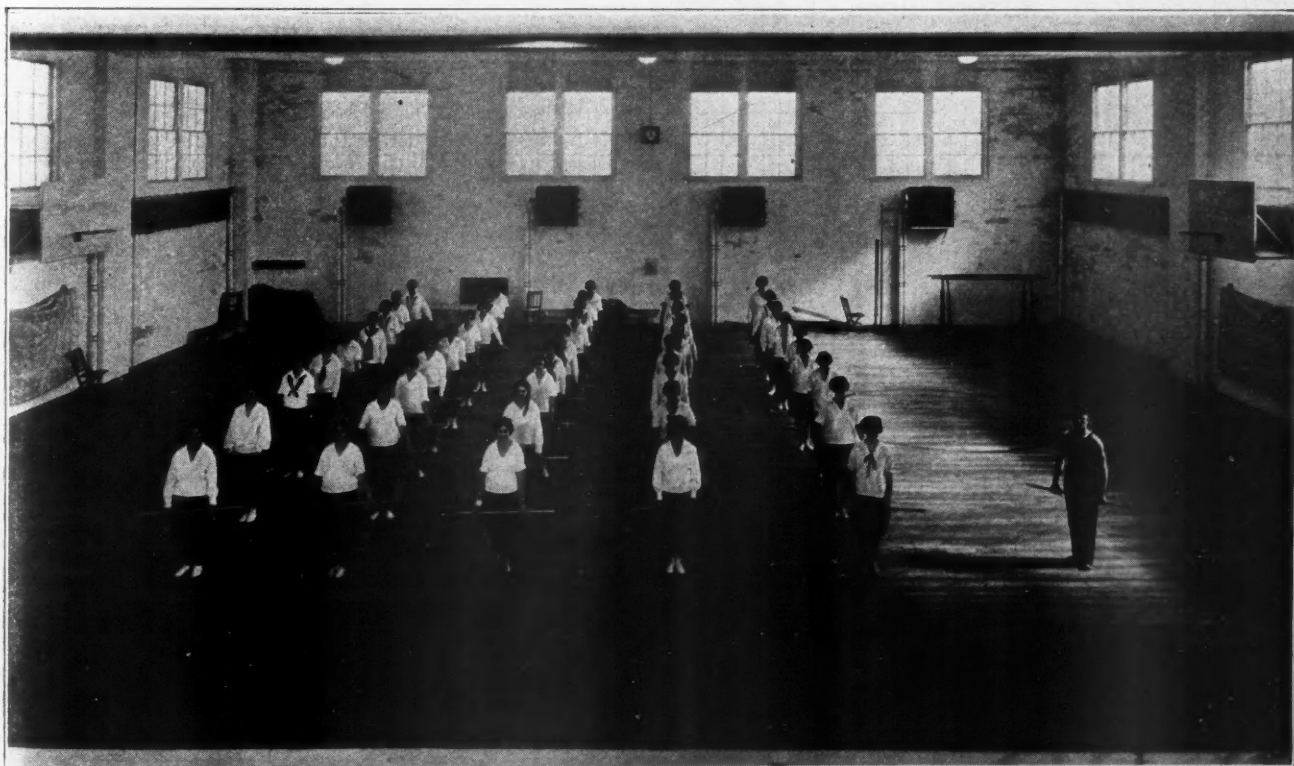
With the Folding Doors Closed the Auditorium Stage, of the New Ozark Wesleyan College Building, Resembles Any Other Stage to Be Found in a School or College Auditorium, but the Doors Can Be Folded to the Sides, Completely Out of the Way, to Reveal the Gymnasium, as Pictured in the View at Bottom of Page.

and a museum, teachers' rest rooms, four studios and nine music practice rooms and a lecture hall with a motion picture machine for general use.

Through the main entrance of the building the auditorium is reached. This hall seats one thousand persons. The stage is one of the outstanding features of the building. It measures 45 by 68 feet and is so arranged that the rear portion may be cut off by means of folding doors, to make a stage of ordinary size for general use, facing the auditorium. When the doors are opened the rest of the space becomes

a part of the stage and this space provides a small, standard basket ball floor and gymnasium. Underneath this stage locker rooms, showers and toilets are provided.

In the basement there is also a large cafeteria and kitchen, and the boiler, fuel and fan rooms. Teachers rooms and toilets are provided on each floor. The first floor corridors and entrance have marble floors and wainscot, as have all the toilets. Other corridors have composition, monolithic floors with sanitary cove base and the rooms are floored with maple.



The Stage Gymnasium Measures 68 by 55 Feet, Not Large but of Sufficient Size to Provide for a Standard Basket Ball Floor, as Well as for the Usual Physical Training Apparatus. When in use, the auditorium proper provides seating for 1,000 spectators.

HOW DAN DOES IT



A Department for Passing "Life Savers" along to other Builders

\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is editor of this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it. Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

Using the Plumb Bob

AFTER reading Nels N. Oie's method of using the plumb bob, in the October issue, I decided to send in my method. Take a strip $3\frac{1}{2}$ inches wide and three feet long. Cut a slot 2 by 5 inches, 4 inches from the bottom and scribe a line up the middle of the strip from the top of the slot.

Fasten the cord on this line a short distance from the top of the strip and, slightly below it, drive a staple to hold the cord a trifle way from the strip. A short distance above the slot drive a similar staple, leaving about $\frac{1}{4}$ -inch play behind which the cord is strung. Use the gauged line for a guide.

JOE C. BOYER,
Star Route, Park Falls, Wis.

For Framing Garage Doors

IN the September issue, Mr. Tacinelli described a weather-proof garage door. I approve of his door and use this style of construction right along but form the

step with a piece of $\frac{1}{4}$ by 3-inch iron, thus forming a hard edge, straight and square, which will not break off.

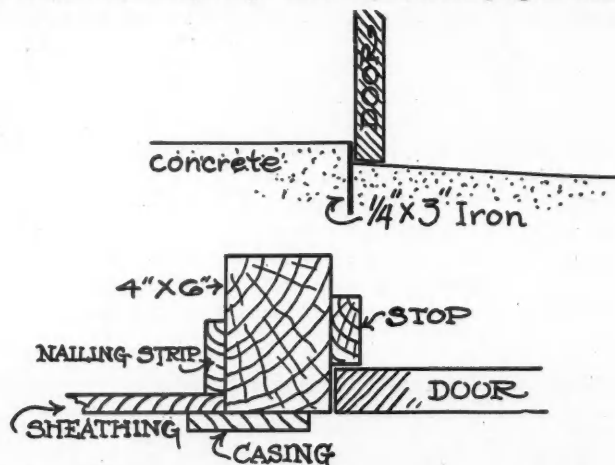
I also offer a simple, rugged jamb construction which makes one job of jamb setting and framing the opening. Make the jambs from 4 by 6 fir stock and place them flush with the outside of the sheathing. Then case to cover the joint. This makes a solid foundation for the butts and frames the opening and jamb in one operation.

TRYON G. BENHAM,
Box 660, New London, Conn.

Plug That Won't Pull Out

I HAVE always noticed that plugs driven into brick or concrete, to receive screws or nails, nearly always come loose in time

or as soon as the wood plug shrinks. Therefore, when drilling for a wooden plug, I always drill the hole as a dentist drills for a filling in a tooth, larger at the inner end than at the opening. After my wooden plug is made,



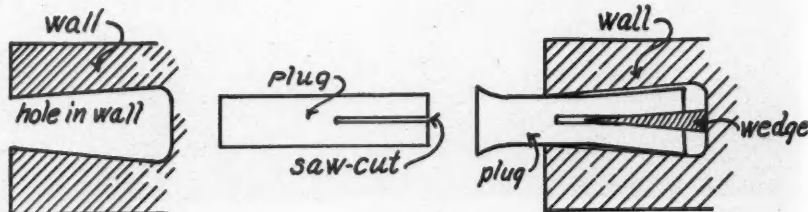
This Type of Construction for Garage Doors is Simple and Rugged and Makes a Really Weatherproof Door.

I make a saw cut in the end that goes in first and put a small wooden wedge in the saw cut. As the plug is driven, the wedge is also driven, into the plug, and spreads the end of the plug so that it cannot come out when it shrinks.

TED GREVILLE, 5128 34th St., San Diego, Cal.

Method of Ageing Shingles Given

IN response to a request made to the Bureau of Information on how to treat Western red cedar shakes and shingles to get a weather-beaten effect, Otto Hartwig, paint specialist for the Bureau, recommended the following treatment:



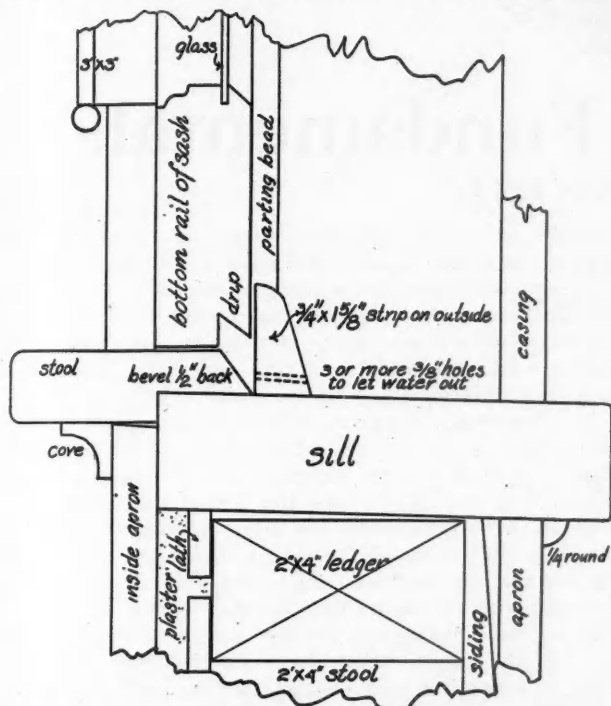
When Inserting Wooden Plugs, for Nailing or Screws, in Concrete or Brick, the Fault of Future Loosening of the Plug Can Be Overcome by Making the Hole Larger at the Inner End.

A priming coat of lead and oil with a touch of raw umber and lamp black should be used. From six to seven pounds of lead to one gallon of raw linseed oil, or, better still, some fat oil, with the lamp black and raw umber added, will give a fairly good driftwood effect.

Some painters prefer to coat the wood with lime. This process is completed by oiling the shingles when the lime coat is thoroughly dry. ❀

Leakproof Casements

I AM enclosing a sketch showing in detail my method of treating the bottom rail of a casement sash to prevent leaking. I make the frame the same as for double hung



This Drawing Fully Illustrates a Method of Handling Casements to Assure Against Leaking.

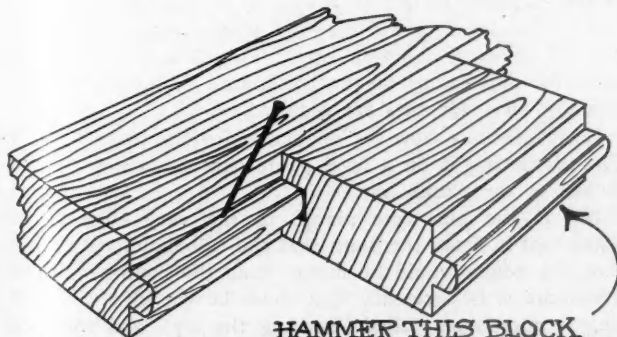
windows except that the length is 5/8 inch longer than the sash and the pulley stiles are reversed. Stock material can be used throughout.

H. J. ACKERMAN, 11218 S. Normandie Ave., Los Angeles, Cal.

A Flooring Laying Aid

I N laying flooring you should never hammer the flooring that you are laying in order to get a tight joint. Get a short piece of the same material, just a few inches long, place this against the edge of the flooring as shown in the illustration, and hammer it. You can hit it harder without marring the flooring and get a good tight joint.

ARNOLD FLEER, La Grange, Mo.

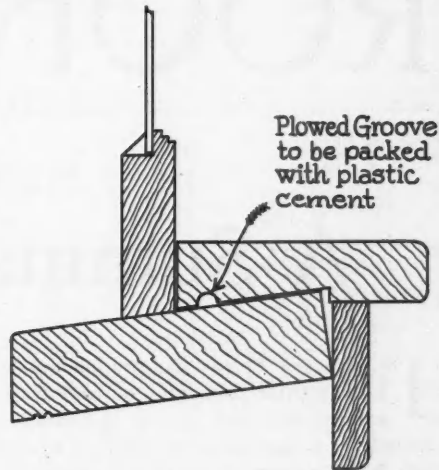


HAMMER THIS BLOCK

The Use of a Small Piece of Flooring Material for Hammering Flooring Joints Tight Prevents the Damaging of the Flooring Material with the Hammer.

Stopping Window Leaks

I AM sending a sketch of a method I have found successful in stopping window leaks when, due to a driving rain or ice forming on the outer edge of the sill and later thawing, water backs up under the stool. Except on new work it is necessary to remove the stool to apply this remedy. Plow a groove in the stool a half inch or so from the outer edge, using a half round cutter preferably. Pack this groove very full of plastic cement, such as used on roof flashings, and replace the stool. Upon reailing, a small quantity of the cement becomes spread between the stool and sill which, with the packed groove above, makes a water tight seal. Do not use so much cement that it will ooze out and stain the visible portion of the wood.

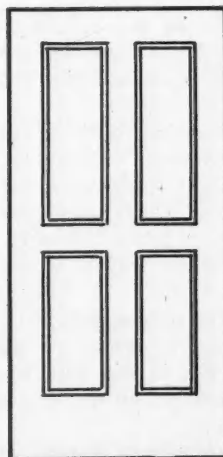


Window Leaks Can be Stopped in Either New or Old Construction, by Means of a Groove and Plastic Cement Used as Described Here.

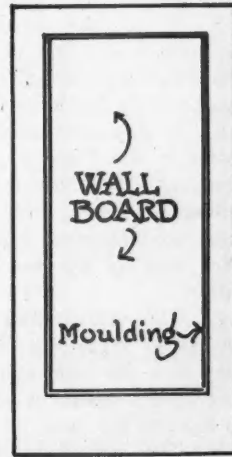
ERNEST GUSTAFSON, 31 Spruce Ave., Kane, Pa.

Repairing Old Doors

I N most old doors, particularly the cheaper, panelled doors, the panels sag, slip out of place, split and crack. If you wish to repair such doors with little expense here is a method that will make a good looking door. Get enough wall board to cover the entire door except four inches all around, square it up and tack onto the door.



OLD DOOR



NEW DOOR

Old Doors with Panels Cracked, Sagged and Out of Place Can be Satisfactorily Repaired by the Use of Wallboard and Moulding as Shown Here.

This covers all the panels. Put a narrow strip of moulding all around the wall board. Treat both sides of the door in this way and then give it a good coat or two of paint and you will have an expensive looking door with a long panel the entire length. This may be used for all interior doors and for the inside of doors that open outside. I have saved a good many dollars by using this method.

KATE A. BATSON, Wiggins, Miss.

INSTRUCTIONS *in* ROOF FRAMING



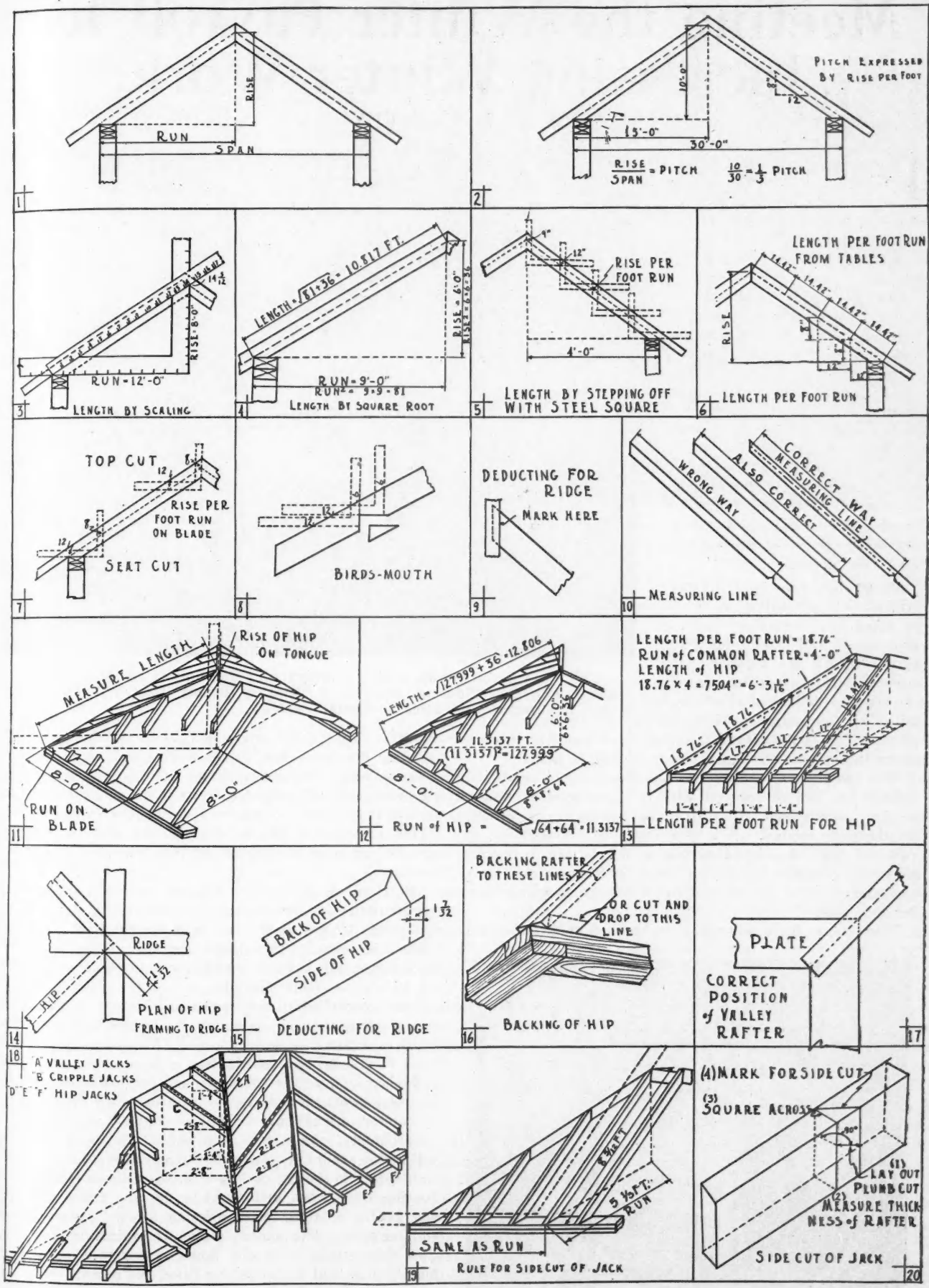
A Summary of Fundamentals

By JOHN T. NEUFELD

IN each one of the paragraphs which follow one of the fundamental principles of roof framing will be briefly summarized and, on the opposite page, it will be illustrated by a sketch corresponding by number in the lower left hand corner.

1. This shows what is meant by the run, rise and span of the rafter. Note that the run is one-half of the span where both sides of the roof are even.
2. Pitch is the slant or slope of the roof. It is expressed as a ratio of the rise to the span such as $\frac{1}{4}$, $\frac{1}{6}$, etc., meaning that the rise is $\frac{1}{4}$ or $\frac{1}{6}$ of the span. A second way to express the pitch is to give the rise per foot run. The illustration shows a rise of eight inches per foot run.
3. The length of the rafter may be found by scaling. Take the run of the rafter on the blade of the square and the rise on the tongue, letting one inch represent one foot; then measure the distance between the two points.
4. The length may also be found by square root. Square the run, then square the rise; add the products and take the square root of this to find the length of the rafter. This gives a very accurate answer.
5. If we take the rise per foot run on the tongue of the square and the 12 representing 1 foot of run on the blade we may step off the length of the rafter, applying the square once for each foot of run.
6. A very satisfactory way of finding the length of the rafter is the "length per foot run" method. Tables are prepared where the length per foot run is given for the different pitches. The carpenter then selects from the table the length per foot run for the given pitch and multiplies this by the run in feet, to get the length of the rafter.
7. The rise per foot run taken on the tongue and 12 on the blade gives the cuts for the common rafter; or we may take the total run and the total rise in feet and, letting inches represent feet, use these numbers on the square to lay out the cuts.
8. The cut shown in Fig. 8 is sometimes known as the birdsmouth. It is laid out by the same numbers as the other cuts. The horizontal part of this cut should be enough to give proper bearing for the rafter.
9. The length of the rafter as generally figured is to the center of the building; therefore if a ridge board is used allowance must be made for this. The allowance is not one-half of the thickness of the ridge from the length of the rafter, but one-half of the thickness of the ridge on a level or horizontal line. This can easily be done by taking a piece of wood of the same thickness as the ridge and using it to mark for the allowance for the ridge.
10. It is also important to know the correct line to measure on. Some carpenters prefer to measure on the edge of the rafter while others mark a line known as the measuring line through the point of the rafter that strikes the edge of the plate. This is theoretically the correct line but we would not venture to advocate it above everything else as we have learned some time ago that it is not wise to assume that there is only one best way for everybody.
11. The methods used to find the length of the common rafter may also be used to find the length of the hip rafter. Figure 11 illustrates an imaginary square placed so that the edge of the blade forms the run of the hip and the edge of the tongue forms the rise. This shows that we can scale the length of the hip by taking the run on the hip and the rise on the tongue. It is best to use a square and rule with the inches divided into twelfths so that one inch on the building may be represented by $\frac{1}{12}$ th of an inch on the square and ruler. To find the run which must be found first, we also measure on the square. For example, in Fig. 11 the run of the hip may be found by measuring between the points 8 on the blade and 8 on the tongue.
12. Square root is also one of those necessary evils that comes very handy, providing you are not afraid of it. First the run must be found and then the length as shown in Fig. 12.
13. Tables giving the length per foot run of the hip rafter are based on the length of the hip per foot run of common rafter. This is illustrated in Fig. 13. Note that the run of the hip is 12 inches for each foot of run in the common rafter. This is for all pitches as long as both sides of the hip roof are of the same pitch. The length of the hip per foot run of common rafter varies with the pitch of the roof. Tables giving this are found on steel squares and in books on roof framing. To find the length multiply the given length per foot by the run of the common rafter, as shown in the illustration.
14. The framing for the hip at the ridge end varies. Fig. 14 shows a common way. This is a plan view and gives the dimensions on the horizontal. We also see from this that two side cuts are required.
15. Note here how the deduction for the ridge is made. The measuring is on a level plane (horizontal) or perpendicular to the plumb line.
16. If the hip were placed to the very edge of the plate, that is, from the point that the calculations are made, then the edges would be higher than the common rafters. Therefore it is necessary that these be cut off. This cutting is sometimes called "backing the hip" and we could give a number of fancy rules for obtaining the line to

(Continued to page 100)



This Group of Sketches Illustrates the Various Principles of Roof Framing Summarized on the Opposite Page. The numbers, in the lower left hand corner of each sketch, correspond with the paragraph numbers.

Meeting the Winter Payroll by Increasing Winter Work

By W. L. CLAFFEY

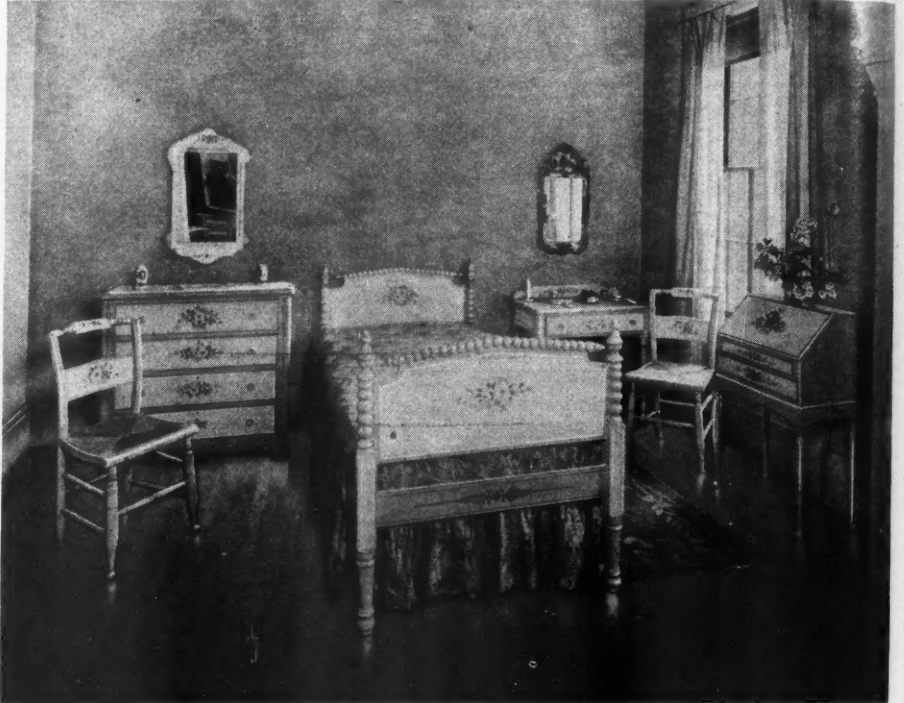
IT has been said, had Rip Van Winkle been either a builder or general contractor he could never have climbed to his particular niche in the hall of fame, even though this niche is purely a literary one.

Mrs. Van Winkle's famous son might have slumbered peacefully through the springs and summers, and even the falls of those twenty years during which he was supposed to have slept without interruption, but with the approach of each winter, had he been in the building business, there would have come to harass his slumbers and disturb his oblivion, hideous nightmares concerning the winter payroll and the keeping of his organization intact through the long idle months.

When the raw cold weather, with its curtailment of work out of doors begins to show signs of abatement and the coming of spring signals the approach of a new season of building activity, the average builder finds himself with his organization shot to pieces. This is the natural result of the necessity of holding down the payroll through a season of little activity.

This has always been one of the perplexing problems the builder has had to contend with in those sections of the country where outdoor construction has not been carried on the year around. It is practically an impossibility to carry through the closed months a full strength organization. If a builder is able to keep his foremen and their assistants on the payroll, without a lay-off now and then, he does well.

There is at least one means of materially helping this



The Same Floor Shown in the Photograph at the Bottom of the Page, When Covered with Oak Flooring, Becomes a Thing of Beauty That Will Outlast the House and Increase Its Sales or Rental Value.

condition. The relief lies in a field to which not enough attention has been given in the past—the work of modernizing and renovating old buildings. The time to begin figuring on a practical method to keep the organization morale up and the payroll losses down during the winter is early in the season and the builder will do well to begin at once to seriously investigate the possibilities of this inside work.

The Home Modernization Bureau, a national organization representative of various standard building material interests in the United States, has recently announced, after an exhaustive survey, that there are more than 10,000,000 dwellings in this country which, for one reason or another, are in need of modernization.

This modernization may mean anything from putting in a new foundation, a basement or a new wing, to new lighting fixtures or oak floors. This range of possible work for the winter months is a wide one, but as flooring is the last item mentioned above, and because of the particular possibilities thereof and the ease in which the field may be entered, discussion here will be confined thereto.

Carpenters, contractors and specialists in floor laying will find it profitable to solicit systematically odd jobs in old homes for the laying of $1\frac{3}{16}$ -inch, $\frac{3}{8}$ -inch and $\frac{1}{2}$ -inch oak flooring over worn and obsolete floors. There are various grades of these sizes offering a wide range of cost and purpose. The winter season is preferable for laying this thin stock over old floors which are then thoroughly dry and in good condition to receive it. It is important that old floors be level before installing oak floors.

From an office canvass and an examination of realtors' lists of offerings, a sufficient number of prospect names



An Old Rough Floor, No Matter How Carefully Kept Painted, Requires Endless Hours of Labor to Keep It Clean, as Every Housewife Knows.



Oak Flooring of Various Sizes and Grades Can Be Laid Over Worn and Obsolete Floors with Results Equal to Oak Floors Laid in New Construction and Such Work Offers the Contractor an Important Field of Work, Especially in Winter When Work Is Needed to Hold the Organization Together.

should be obtained to begin solicitation. From that time on, the keen salesman should never know the need of new prospects. A little discreet questioning in each home visited as to neighbors and friends will keep his list growing all the while.

In the way of sales arguments the salesman will have two distinct appeals—one to the housekeeper and one to the house owner.

Keeping her house clean is one of the trials of the average woman's life. Keeping it attractive is her constant ambition. To these ends she spends many hours of thought and labor. The floors of a house are first to claim the attention of a visitor. If they are of soft spongy wood, painted or carpeted, they are one of the principal burdens of the housekeeper's life. The desire to live in a house with hardwood floors is a part of the dream of every housewife. Those living in houses with obsolete floors long for the day when they can make the change. Those who already have floors of oak would not consider moving to a house which does not have them.

The salesman will have a willing listener in the housewife. He can assure her that the new floor can be laid with but little interruption to the regular home routine. The work can be done one room at a time if necessary. None of the woodwork need be disturbed except the quarter-round at the base board. The new floor, laid over the old, will be found as sound and attractive as if oak had been used when the house was built.

When the last shaving is swept up and the new oak floor is ready for use the floor will no longer represent to the housekeeper many unhappy hours of labor. It will be a source of joy, a great pride and an economy. She knows what a change comes with oak floors. No crevices to accumulate dust or dirt, a surface requiring a minimum amount of attention; just a little refreshing at frequent intervals and the floor is bright and cheery at all times. A notable authority on home economics has said oak floors are one of the greatest blessings modern women enjoy; they are the emancipation of women who do their own work or who supervise that of others.

Oak floors not only add to home satisfaction—they add to home enjoyment as well, for when a little relaxation is in order, the rugs may be turned back, the radio turned on or the Victrola started for an impromptu dance.

To the man of the house whose responsibility it is to keep the family budget out of the red, more hard-boiled reasons than convenience and beauty must be offered and substantiated in the argument for oak floors. He has to think in terms of dollars and cents, regardless of what he would like to provide for the comfort and convenience of his family, and in just such terms the sales talk must be presented.

The principal reasons for the desirability and superiority of oak as the modern and always satisfying floor are in the facts that his investment will be greatly enhanced, the cost need not exceed that of a perishable floor covering, and the new floor will be a permanent one, outlasting the house itself. It never needs replacement and it adds real value to the house for rental or resale. Oak floors are nature's beautiful product, improving in mellowness with age.

The salesman will find a ready ally in the realtor and rental agent. From this source may be obtained convincing proof that a change from soft perishable wood or carpeted floors will be an investment certain to bring substantial returns should the house be offered for rent or sale.

No standard of costs of installing oak floors can be called general throughout the country. Local wage scales and freight rates will affect prices to some extent, but in no instance should the cost be a prohibitive one. In practically all cases it will be found less than the cost of a new carpet of good quality and but little more than the cost of new perishable floor coverings.

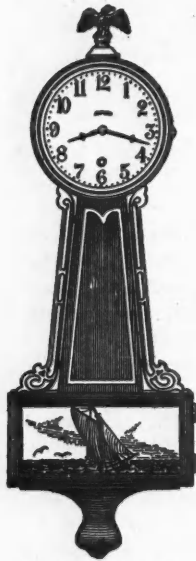
It is a good business, easily estimated with safety and holds a good margin of profit. Furthermore, once approached intelligently, it should develop rapidly in volume and provide each year substantial help in meeting the winter payroll and holding the organization together until a new spring activity opens with the advent of weather that is "fair and warmer."

NEWS of the FIELD



Build Clocks for Xmas Gifts

THE American Chime Clock Company, 1659-1669 Ruffner St., Philadelphia, Pa., which during the past 50 years has built up an extensive business in Grandfather clocks,



The Popular Banjo Clock is Easily Made. It makes a handsome decoration or gift or can be sold at a good profit.

furnishing works, parts and plans to both amateur and professional clock builders, has now brought out a novelty which has a particular appeal at this time when the selection of suitable Xmas gifts is a problem. In response to a demand resulting from a popular revival of Banjo clocks this company has designed a Banjo clock. It is illustrated in the accompanying sketch.

Clock builders, whether amateur or professional, can adapt the making of this clock to their skill. They can obtain the blueprints only, and later the works, or they may purchase the works and receive blueprints with them. The less skillful may secure the drum already shaped, glued and sanded. This is the part most difficult for the amateur to make. Again, they may secure all the parts in knock-down form ready to assemble and finish. These parts are sold at a moderate cost and those wishing to make clocks for profit will be able to establish a paying business with this design.



Equipment Company Expands

ANNOUNCEMENT was recently made by Philip A. Koehring, president of the National Equipment Corporation, of the acquisition by that firm, of the Parsons Company, of Newton, Iowa, manufacturer of power trench excavators, and the Insley Manufacturing Company, of Indianapolis, Ind., manufacturers of steel towers for hoisting and pouring concrete. Both companies will continue under their present management as divisions of the National Equipment Corporation. H. C. McCardell, president of the Parsons Company, and W. H. Insley, president of the Insley Manufacturing Company, become vice-presidents and directors of the parent corporation.

With the addition of these two companies the National Equipment Corporation becomes a leader in the construction machinery field. It now owns, in addition to these two companies, the Koehring Company and the T. L. Smith Company, both of Milwaukee, Wis. It has total assets of \$9,000,000 and its 1928 sales will be close to \$10,000,000. Headquarters of the corporation are located

in Milwaukee. The Koehring Company manufactures a broad line of concrete mixers, paving machines, power shovels, cranes and draglines. The T. L. Smith Company is one of the largest manufacturers of concrete mixers in the world.

The National Equipment Corporation is expanding along lines similar to the expansion of General Motors. The divisions of the corporation are operated as independent units, with close co-operation in engineering matters, standardization of production methods, warehousing, service and other angles where savings can best be realized.



Instructions in Roof Framing

(Continued from page 96)

which the edge must be worked. But the illustration shows a simple way of knowing how far to cut. It is not necessary to hold the hip rafter on the plate to find this line, but just take a piece of timber cut square and hold it under the seat cut of the hip and thus mark how far the hip must be beveled off.

Very often the hip is not beveled off but is lowered by cutting it off to the line shown in the illustration. It will not do to move the hip forward unless it is cut off sufficiently at the upper end.

17. The length of the valley rafter is found in the same way as the length of the hip.

18. Jack rafters lie in the same plane as common rafters. Therefore we can find the length in the same way by various methods that are used for finding the length of the common rafter. The run of the jack rafter is usually the same as the distance of the seat from the corner of the building. Thus if rafters are placed 16 inches on centers the first one may be 16 inches from the corner and would therefore have a run of 16 inches. Multiplying the length per foot run by the run in feet gives the length. The length may also be found by taking the length of the common rafter and subtracting from it the difference in length of each succeeding jack rafter. There are three equal spaces between rafter "D" and "G" and there are four equal spaces between the corner of rafter "G."

Rafter "D" is $\frac{1}{4}$ th as long as rafter "G".

Rafter "E" is $\frac{1}{2}$ as long as "G".

Rafter "F" is $\frac{3}{4}$ ths as long as "G". Roof framing tables usually give the difference in length of the jack rafter for the different pitches; both for rafters 16 inches on centers and for rafters 24 inches on centers.

19. A rule for the side cut of the jack rafter is take the length of the common rafter on the body of the square and the run on the tongue of the square and mark along the body. In this illustration the square is placed in such a position that the body coincides with the common rafter and the tongue with the plate. The distance from the foot of the common rafter to the corner of the building is the same as the run of the common rafter, therefore the term "run of common rafter" is used in the rule given. Thus to lay out the side cut for the rafter shown we would use the numbers $8\frac{5}{12}$ and $5\frac{1}{3}$, marking along the arm of the square on which the $8\frac{5}{12}$ is taken.

Another rule for the side cut is to use the length per foot run on the body of the square and 12 on the tongue and mark along the body.

20. This figure shows a very common method of getting the side cut of the jack rafter. It is based on the fact that the bevel of the side cut always makes a 45-degree angle with the side of the rafter but, of course, the angle on the back of the rafter changes with the pitch. Follow the steps of operation in the order named in the figure.

Contractor-Built Houses

Distinctiveness and Originality Are Found in Many Contractor Built Houses Being Erected Today

THE common place and the endless repetition of old styles and manners are unfortunately associated in the minds of many people with houses built by contractors without other plans than those derived from their own experience or from the plan-books of various agencies.

Often this association is justified and more by the actual work done. But that artists and men of good taste and originality exist among contractors is demonstrated almost daily, in residences in all sections of the United States.

And why shouldn't this be so? Before the Middle Ages there were no architects, so called. There was no tradition gathered into books of reference. Great cathedrals lifted their spires or domes into the air out of nothing but the chief builders' experience and taste, plus the taste and ambition of the time. "We will make it so-and-so," they said, and made their drawings as best they could.

Stresses and strains were calculated by rule-of-thumb, out of individual experience, and the experience that had been handed down by builders who had gone before. A good building, pretty much, was one that stayed up, and a bad one was one that fell down. And it never was a ten to one bet that any building would stay up. Yet these architectural monu-

ments compel our acknowledgement of their beauty, they serve as models or inspiration for much of present-day building, and we continually are exhorted to return to the careful craftsmanship of those times.

That this tradition of good taste, originality and crafts-



An Unusual Living Room in a Contractor-Built House, the Residence at 1111 Colfax Ave., Evanston, Ill., David Oliver, General Contractor, in Which the Dominating Feature Is the Use of Curves Where Angles Are Ordinarily Used.

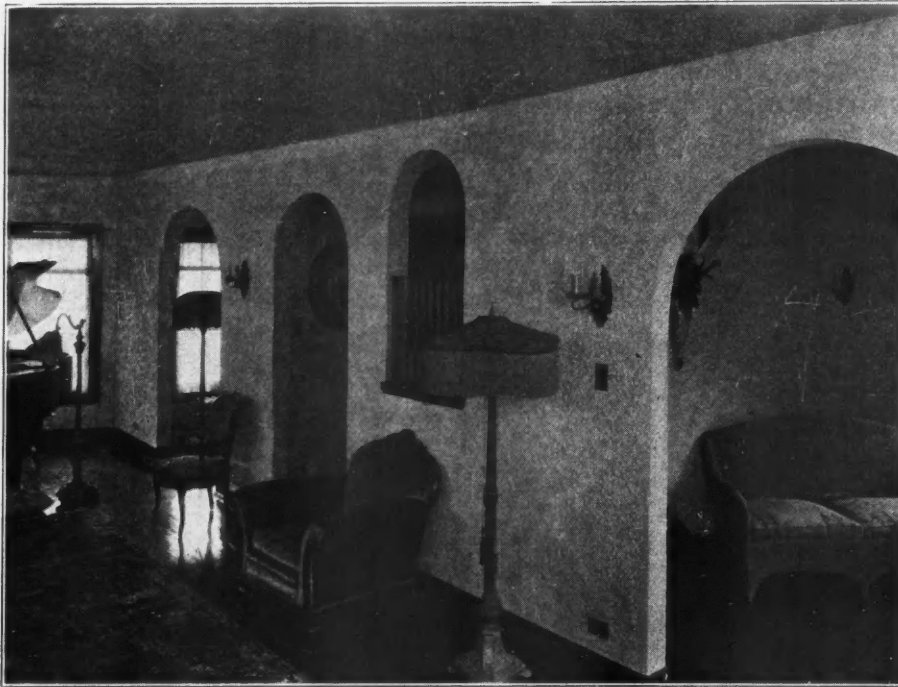


Here Is an Unusual Treatment of the Entrance Problem in a Contractor-Built House. All the space has been utilized for the living room yet there is a distinct air of separateness about the entrance. The residence of E. G. Lewis, 638 Fair Oaks Ave., Oak Park, Ill.

manship is being carried on by contractors of today can be discovered by an investigation of their work in almost any community. Interior views of two such examples, found in a casual visit to two of Chicago's suburbs, are used to illustrate this article.

One is the residence, at 1111 Colfax Avenue, Evanston, Illinois, designed and built by David Oliver, general contractor. Study of the photograph will reveal just how far out of the commonplace this house is and yet with what restraint the whole has been executed to keep it within the bounds of good taste. The dominating feature of this interior is the use of curves where angles ordinarily are used.

In the living room, with the exception of the framing of the case-jamb windows and the soffit and jamb of one small window, soffits of all recesses and doors die away into the jambs in graceful curves. Then to bring the whole room into harmony the ceilings are



The Living Room of the E. G. Lewis Residence, Which Was Built by the Contractor from Ideas and Suggestions Furnished by Mr. Lewis. The arched doorways and opening into the stairway are interesting features and an example of originality in a contractor-built house.

covered. To sharpen the effect of the curves the fireplace lines are straight and emphasized with a course of tiles.

Virtually the same treatment has been carried out in the dining room achieving practical usefulness as well as the decorative effect in the recesses. No small part of the effect of this interior is due to the use of rough-textured walls for which plastic paint was used as the medium. Lawrence and Danielson of Evanston were the decorators.

The second residence visited is that of E. G. Lewis, 638 Fair Oaks Avenue, Oak Park, Illinois, which was designed by the contractor from ideas and suggestions furnished by Mr. Lewis.

In this residence the conventional vestibule has been done away with. And while this in itself is not a novelty the treatment of the entrance is decidedly original. Entering, one steps upon a landing about 5 feet across, down from which two steps lead to the living room proper. Thus the effect of a distinct entry-space is obtained while, at the same time, the space is utilized to lengthen the living room.

Doorways are arched, as are openings into the stairway from the living room and hall to the kitchen, and through these openings can be seen a smaller arched opening from the stairway into the sun room. That this makes an effective picture can be seen readily. The two larger of these stair openings have iron grilles of simple but effective design. The fireplace is of brick, and like the house built by David Oliver, the walls are rough-textured, both the texture and color having been obtained with a single coat with plastic paint.



Houses Fit for Heroes

(Continued from page 70)

are provided in 80 per cent of the houses and the bathroom are the three greatest boons which have been conferred on the tenants who have been fortunate enough to secure the new homes. The "battle of the bath" ended in 1924 by the inclusion in the Housing Act of that year of a provision to the effect that every municipal housing

or private enterprise scheme must, in order to secure the grant of financial aid from the government, include in the accommodation to be provided a bath in a separate bathroom.

The Battle with the Slum

But, while the "battle of the bath" was ended in victory, the greatest of all the housing battles which have to be waged in Great Britain has not yet been commenced in earnest. Despite all the efforts made since the war closed, we have not yet conquered the housing famine which still continues to perplex the local authorities of many of our great centers of population. It has been estimated that before we can claim that normal condition of a pre-war kind are again secured another 500,000 houses must be built.

These figures, moreover, leave entirely aside the work of cleansing British cities of the slums which disgrace only too many of them and the ridding of our small towns

and villages of groups of wretchedly unfit survivals of the "Jerry" housing activities of the earlier part of the nineteenth century. It is not possible to look back on that period of unexampled industrial expansion without an acute sense of shame that men, in their keen search for wealth, should have been so blind to the evil conditions which were growing up side by side with their factories and mills. Between 1830 and 1870 40,000 back-to-back houses grew up in Birmingham courts and alleys and provide homes for 200,000 people. Leeds, Manchester, Liverpool and London all have terrible records of a similar kind. What bad housing means in Liverpool can be seen from one of the accompanying photographs. The writer is especially fortunate in being permitted to use this actual photograph because the Liverpool City Council have quite recently swept this court away and have made provision for the rehousing of 95 per cent of the dispossessed tenants.

The unpalatable truth must be told frankly and the writer has no hesitation in doing so because he knows that the British people are determined to rid the country of slums. What is the extent, then, of British slums? In answer it must be said that there are at least a million houses unfit for human habitation in England and Wales. To provide for the overcrowded families in these slums at least a million and a quarter new houses are needed and must be built as speedily as possible. During the past nine years our slums have had a further lease of life—because it has been quite impossible to close houses so long as a housing famine existed throughout the country. This estimate of a million applies only to England and Wales. A Scottish Royal Housing Commission has reported that a quarter of a million houses are needed in Scotland to secure a clean bill of housing health there.

It is the duty of the British building industry to act as the executive hands of the state in dealing with this great problem of national honor and well-being. Despite all that has appeared in various reports that have crossed the Atlantic, the writer desires, through the *AMERICAN BUILDER*, to tell the leaders of the Great American building industry that their British fellow workers have fulfilled the duty placed upon them with vigor and good-will.

Here's to a Prosperous New Year

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In all sincerity, we wish you a Merry Christmas and success in 1929. That our greeting is genuinely meant is certified by our constant endeavor, throughout the entire year, to supply you with the finest interior finishes that can be made. Further proof is our offer of wholesale prices through your painting contractor.

We heartily thank you for your appreciation of our efforts, as shown by your letters, and for your unfailing co-operation.

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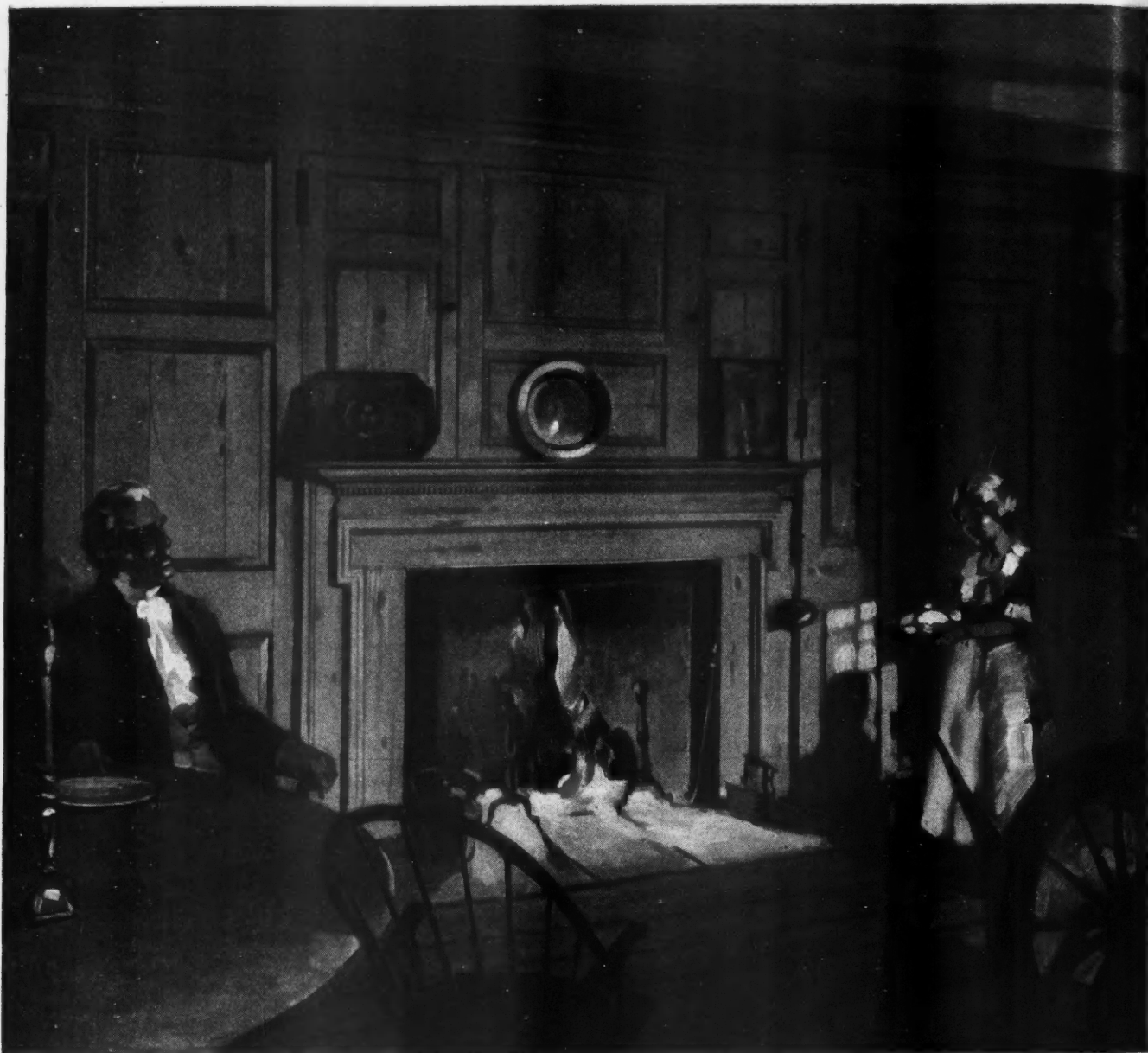
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Please send me your wholesale price list and tell me how I can get a Johnson Electric Paint Burner free.

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Pine Construction is the Most Economical

THE modern trend in home construction away from the raw, cold plastered walls to the rich, warm Pine panelled walls, which grow more attractive as the years pass, is an indication of the study made by architects and builders to obtain, economically,

the most in home enjoyment for their clients.

The illustration above shows the Pine panelled walls in the dining room of the Webb House which was built about 1753 at Wethersfield, Connecticut. Since early colonial days, dwellings

SHEVLIN PINE

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



The Governor Wolcott House, built in 1753 and the oldest house now standing in Litchfield, Connecticut, is a convincing example of the economical long life of Pine construction.

built of Pine have given the most years of real home comfort for each dollar expended.

There is no shortage of the proven building material of our ancestors as there are sufficient stands of carefully selected Shevlin Pine to build the nation's homes for decades.

Shevlin Pine Reduces Building Costs

Although Pine may cost a trifle more than some other lumber, Shevlin Pine reduces building costs by speeding up construction.

Carpenters and painters work faster with Shevlin Pine because it works with them. It is light in weight and easy to handle. It fashions under tools willingly, quickly takes and holds nails, absorbs paint readily and retains it tenaciously.

"Certified by Centuries of Service"

There is no guesswork about a home properly constructed of Shevlin Pine. The nation's oldest homes testify to the

centuries of service given by Pine like this—real American homes like the Governor Wolcott House shown on this page which was built for one of the signers of the Declaration of Independence.

Leading lumber dealers throughout the nation can supply you with Shevlin Pine. There are five varieties: Shevlin California Sugar Pine, Shevlin Northern White Pine, Shevlin California White Pine, Shevlin Norway Pine and Shevlin Ponderosa Pine.

Send for Data about Pine

The thirty-two page booklet, "Specify Shevlin Pine", contains information about Pine that should be of value to you—the characteristics, physical properties, allowable stresses and other data.

The coupon below is for your convenience in obtaining a copy. Just fill it out, send it to us today and the booklet will be sent to you immediately.

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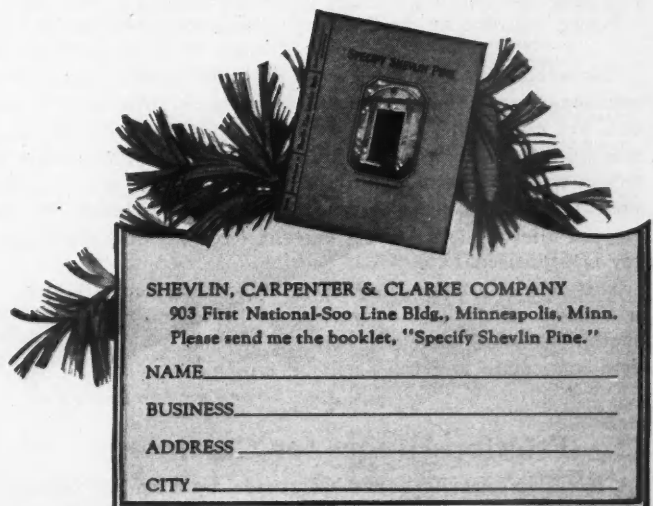
903 First National-Soo Line Bldg., Minneapolis, Minn.

Chicago Sales Office: 1866 Continental & Commercial Bank Bldg.

San Francisco Sales Office: 1028 Monadnock Building.

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Sold in New York by N. H. Morgan, 1205 Graybar Bldg.



SHEVLIN PINE

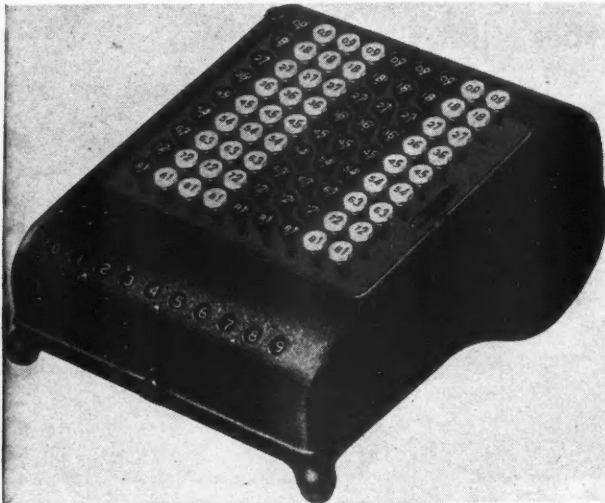
WHAT'S NEW ?



EDITOR'S NOTE: *The AMERICAN BUILDER does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address AMERICAN BUILDER Information Exchange, 1827 Prairie Ave., Chicago, Ill.*

Electric Calculating Machine

AN electrically operated calculator, capable of speed beyond the skill of any human operator has recently been placed on the market. The electrical operation, it is claimed, reduces the actual physical effort on the part of the operator to a short depression of the keys. The light key touch, which is uniform for all keys, actuates the motor and the motor instantly completes the operation. This new key touch, with the motor doing the work, results in greater operating efficiency and greater production per operator, according to the manufacturers.



The Speed of This Electrically Operated Calculator Will Be Found Valuable by the Building Contractor or Architect.

Another advantage claimed for the new machine is positive key action. Errors due to incomplete strokes of the keys are impossible, as the operator cannot short-stroke or otherwise misoperate a key. The new calculator is similar in size to the company's other machines of this type. The small motor is entirely enclosed within the case and operates on alternating or direct current. It runs only when a key is depressed.

This new calculator, in 10 column totaling capacity size, is already on display, deliveries are being made and production is being increased steadily so that within a short time immediate deliveries will be possible.

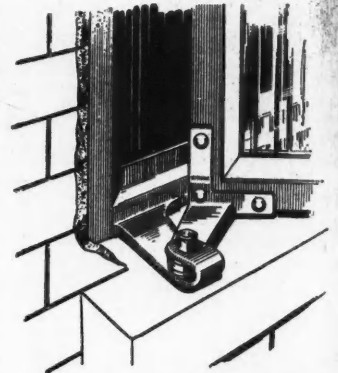


Friction Hinges for Casements

ANNOUNCEMENT has been made, by a leading manufacturer of steel casement windows, that its engineering department has developed a new type of friction hinge which makes the use of staybars and sliding adjusters obsolete on residence casement windows. By means of this hinge the casement ventilator remains at any desired point in the opening arc. Even in strong winds the

hinge friction is sufficient to hold the ventilator steady, yet a simple pressure of the hand on the ventilator will swing it at will.

This new friction hinge, which is shown in the illustration, contains a series of friction washers in the joint, so placed that the ventilator movement is retarded. Adjusters of various types are sometimes necessary when insect screens are applied to the casement opening and accordingly all this company's casement ventilators will be tapped so that these adjusters may be applied when desired. Hereafter the friction hinge will be standard construction on this company's casements and all staybars and adjusters will be classified as special.



With This Friction Hinge, Casement Windows Hold at Any Desired Position.

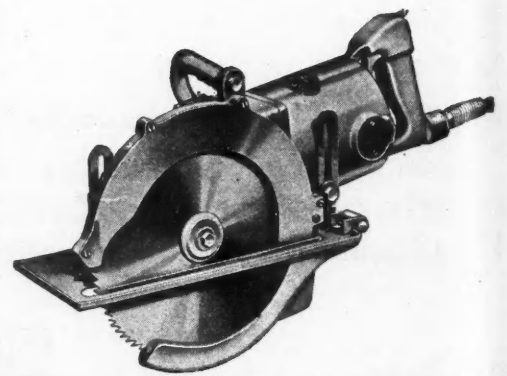


Heavy Duty Electric Hand Saw

THE new, portable, electric, hand saw shown here was primarily designed for heavy work to meet the demand for a saw with a greater cutting capacity. This new model will cut any wood up to 3¾ inches in one cut. It also cuts or scores other building material such as limestone, cement blocks, asbestos, etc. It operates from any electric light socket.

One important feature of this saw is the wide, adjustable and tilting base for bevel cuts. It will cut through rafters on the steepest roofs even though two-inch, rough lumber is used. Another feature is the approved safety guard which fully protects the operator from the saw blade.

This new saw weighs only 24 pounds, yet develops one horsepower, to rip and cut any wood neatly and accurately. It will cut 10 times faster than the old-fashioned hand saw, it is stated. This company manufactures its portable hand saws in four sizes.



Here Is a Portable Electric Hand Saw That Will Cut Any Wood Up to 3¾ Inches.

A Frame for Every Kind of Building



Houses sell easier if Andersen is stamped on the window frames

Every house that pleases its owner increases the reputation of its builder.

One sure way to please owners and attract prospects is to use, whenever possible, nationally advertised equipment and materials—the brands that the public knows mean superiority and permanence.

That is why it is important for you to be particular about the window frames you specify for your buildings. That is why we want to tell you how

to be sure you are getting the best kind of window frames.

The Andersen Trade Mark is die-stamped on every sill. It is our guarantee to you and your guarantee to your customers of *quality material*. The sills and casings of every Andersen Frame are made of genuine white pine, the wood that never warps or rots or splits.

Use the Andersen Frame prestige to make homes sell easier. Fill out and mail the coupon below.

SUPERIORITY
GUARANTEED
by this trade mark

Andersen
Genuine
White Pine
Sills and Casings

White Pine for PERMANENCE
Weather-tight for HOME COMFORT
Standardized Quantity Production for ECONOMY

Styles and Sizes for BEAUTY
Available at dealers for CONVENIENCE

Andersen

Distinctive Features

- 1 Patented, noiseless, long wearing Andersen pulleys used exclusively.
 - 2 Genuine soft White Pine sills and casings—last a lifetime.
 - 3 Patented, exclusive weather-tight features including groove for wide blind stop.
 - 4 Absolute accuracy of milling.
 - 5 A Frame up in 10 minutes.
 - 6 Standardized styles and sizes, convertible for all architectural needs.
 - 7 Nationally known and distributed.
 - 8 Dependable because guaranteed by a reliable manufacturer.
- Sold by Leading Building Material Dealers

Andersen FRAMES

ANDERSEN LUMBER COMPANY

Box 2112, Bayport, Minnesota

Please send me without cost or obligation the material checked in squares on this coupon.

Set of folders describing construction and uses of Andersen Frames.

"How to Make Your New Home More Comfortable"—an illustrated booklet of interest to all home builders.

Name _____

Business _____

Street Address _____

City _____ State _____

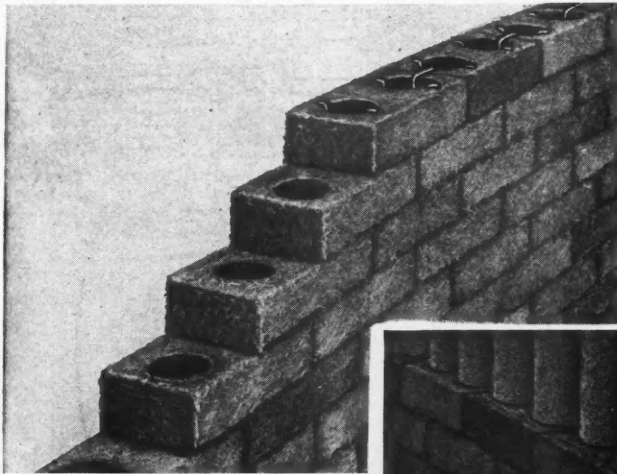
Name Lumber Dealer _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Economical Building Units Serve as Form for Reinforced Concrete and as Wall Insulation

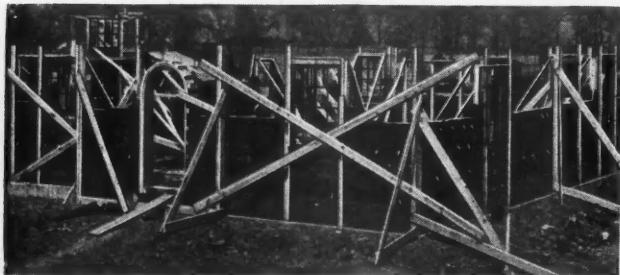
TWO functions are served by the building material illustrated on this page. The first is to serve as a mould or form for reinforced concrete construction. The second is to serve as an insulating material. Its use in home building under all climatic conditions, during the past five years, has demonstrated the efficiency with which it serves both of these functions.

This building material is composed of long, tough, wood fibers, fireproofed and held together by a permanent, mineral cement in the form of a block or mould. It will not carry moisture, it is vermin proof and it becomes more permanent with the years. Any plastic material will adhere to its surface so the plaster or stucco can be applied directly to it.

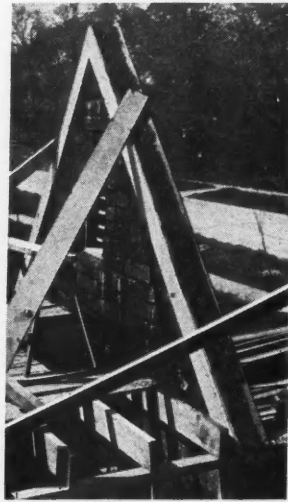


Columns of Holes, Formed by the Mould Blocks, Are Filled with Reinforced Concrete.

Although never used as a load bearing material these units are quite strong. It is stated that they have four times the strength of cork board in cross breaking and three times the crushing strength. Though the illustrations reproduced here show this material only as it is used in the construction of exterior walls, it has a large number of other applications in the building field such as the building of partitions, acoustical correction, floor construction and roof insulation.



A House Under Construction Showing the Window Sash and Arched Doorway in Place. No expensive operations are involved.



Gables Are Quickly and Easily Constructed, the Moulds Being Cut to Proper Pitch and Then Fitted Together.



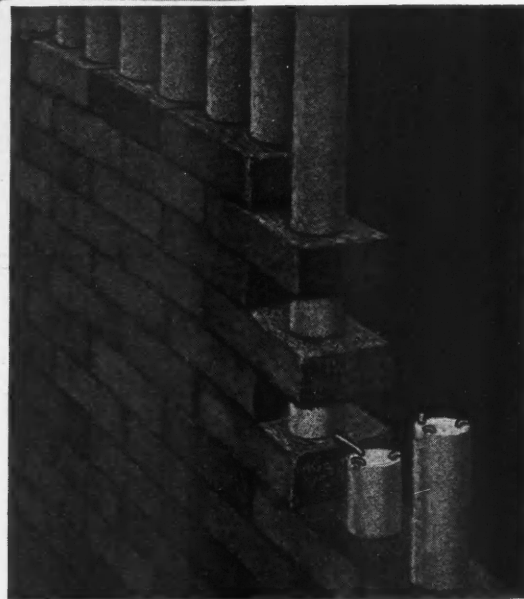
Space for Large Pipes Is Provided During Construction While Small Pipes Are Set by Raking Out a Depression.

The blocks or moulds measure 16 by 8 by 4 inches, the equivalent, in size, of eight bricks, but weighing only as much as a single brick. They are built up brick fashion but without mortar so that there are no mortar joints or cracks to be penetrated by heat or moisture. Each unit has two holes through it and these holes, when the units are laid up, form a continuous column from the top to the bottom of the wall.

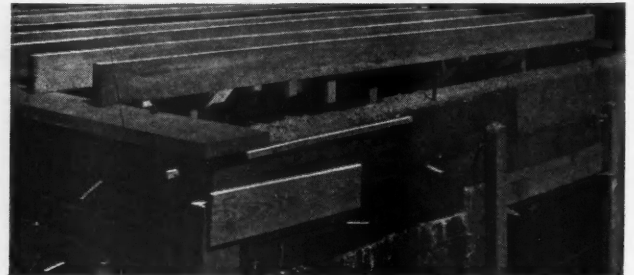
The openings are filled with concrete, properly reinforced, as the wall is laid up. The result is a strong reinforced construction with the form, or moulds, left in place to serve as insulation within the wall.

In addition to the moulds already referred to this material is supplied in slabs, 32 by 16 by 2 inches and 32 by 8 by 2 inches, which are used in forming concrete girths at the foundation, floor and roof lines, and about window and door openings and similar points.

Because of the resiliency of this material it is said to take up any expansion or contraction which may occur and practically eliminate all danger of cracks. Because of the excellent insulating qualities of the material, houses of which it is built are cool in hot weather and are easy



The Reinforced Concrete Columns, Surrounded by the Insulating Material of the Moulds, Form a Strong Wall Resistant to Heat and Cold.



Galvanized Brick Ties Protruding Between the Moulds Are Embedded in the Concrete Columns and Tie the Brick Veneer Firmly to the Wall.



Famous quality products help sell homes

Every famous product or material that you use in the homes you build is an added selling feature. This is true of the heating plant—the plumbing. It is also true of paints, varnishes, enamels, etc.

SWP House Paint and other Sherwin-Williams finishes increase the desirability of the homes you build—*make them easier to sell*. The majority of home buyers recognize the superiority of Sherwin-Williams products. To use them is to command buyer-confidence—belief in the quality of other

materials and fixtures throughout the house.

Hundreds of builders have been using Sherwin-Williams finishes because they are economical and because they make the house look richer and more attractive. Now these men know that Sherwin-Williams quality is a wonderful selling point.

Whenever you wish the advice of a painting specialist, write our technical staff. These men are at your service. Address

THE SHERWIN-WILLIAMS Co.
601 Canal Road, N. W.
Dept. 450 Cleveland, Ohio



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PAINTS
VARNISHES

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ENAMELS

and economical to heat in cold weather. The method of construction is simple and economical.

Houses built by this system can be finished, on the exterior, in any style desired—stucco, brick veneer, siding or shingles. It lends itself readily to half timbering. The interior, too, may be finished in any manner desired. Unusual architectural effects are easily obtained with it and the eight-inch wall makes possible the beauty of deep reveals without extra expense.

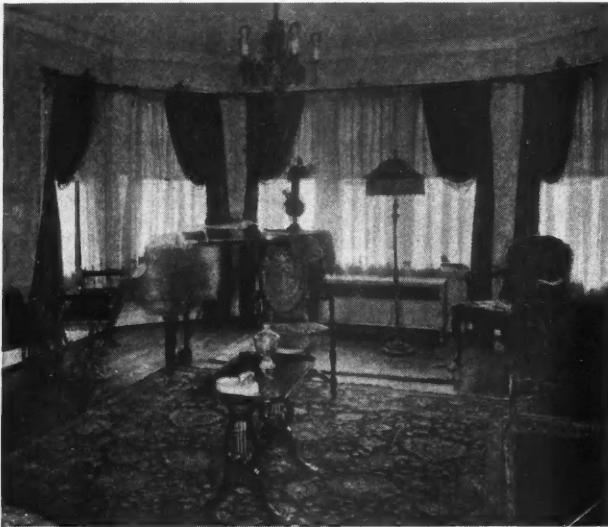


Modern Heating Units

THE accompanying picture shows a room heated by a cabinet heating unit of the most modern and efficient type. This heater consists of two parts which are entirely separate, a cabinet of the finest furniture steel which can be finished to match the room decorations, and a heating unit over which it is placed.

The heating unit is a section composed of a series of flat, horizontal tubes $1\frac{1}{8}$ of an inch high and $\frac{3}{8}$ of an inch wide, running the entire length of the section and arranged in vertical tiers on 1-inch centers. These are held securely in place by copper fins, spaced five to an inch of tubing, and set perpendicular to the tubes.

This section is nested securely in bronze metal, end tanks or headers which act as manifolds for the entering heating element and returning condensation. The special arrangement and copper construction of the fins and tubes assures a maximum of heating efficiency, it is stated.



A Room Equipped with One of the Modern Type of Heating Units Which Are Not Only Highly Efficient, But Decorative as Well.

The shape and design of the tubes preclude the possibility of freezing. The tubes are coated with tin on the inside, producing a glass-smooth inner surface, eliminating the danger of corrosion and clogging.

The cabinet is set over this heating unit, but is not attached to it so that it may be lifted off for cleaning. The room air enters the cabinet at the bottom, is heated in passing through the heating unit and flows upward through the cabinet, being delivered through the grille out into the room entirely by convection. The upper part of the cabinet contains a water pan extending the full width of the cabinet and so designed that the heated air circulates over its surface providing sufficient evaporation to maintain good humidity in the room and greater comfort and health at moderate temperatures. The water pan is not fastened to the cabinet and can be removed and cleaned at any time.

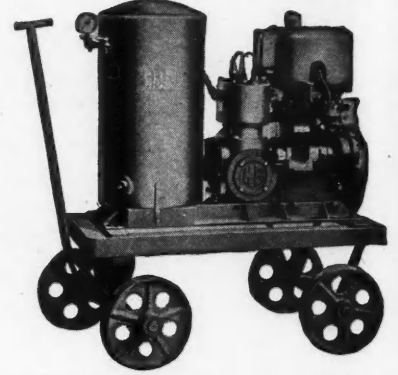
These heaters are designed and constructed for use with vacuum, vapor, air line and one pipe steam systems.

Where concealed radiators are preferred, a similar heating unit can be obtained with a wall cabinet.



Spray Outfit for All Finishes

FOR applying oil paints, water paints, stains, varnishes and even the new plastic finishes, on big jobs and little, inside or outside, this paint spray equipment meets the requirements, it is claimed. Further, it is said, that it enables contractors to save four-fifths of the time and labor required by even the most expert brush work. It is very compact and may be had either mounted on a truck as shown in the illustration or without the truck. The truck is sturdily built of steel with a convenient handle and big broad tread iron wheels. The outfit may be removed from the truck at any time by simply removing four bolts.



Any Kind of Decorative Material from Water Paints to Plastic Materials Can Be Applied with This Equipment.

The powerful, yet economical gasoline engine, insures absolute independence of local current supplies or high test gasoline shortage. It is built directly into the twin cylinder compressor and, with an ample reserve tank, assures a dependable air supply at all times.

Silent, spiral, bevel transmission connects the engine and compressor. There are no belts or chains. This outfit is guaranteed to operate two large guns continuously.

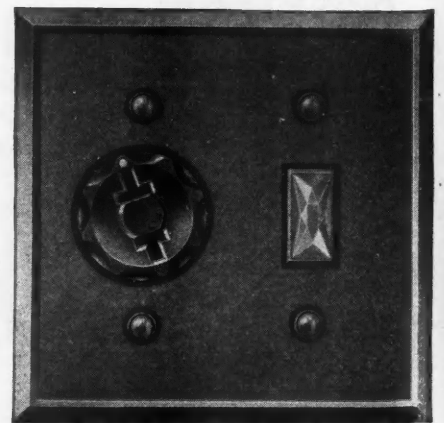


A New Electric Device

THE accompanying illustration shows a new development in electrical equipment in the form of a combination switch-tap and pilot light in a duplex plate. In the one unit is combined a switch, an outlet and a signal light. A two-gang box takes the whole device, thus affecting a worth-while saving.

This unit is adaptable for appliances, radio and remote control lights. It comes in two styles. In the one adapted to appliances and remote control lights, a quarter turn of the finger grooved outlet controls the remote lights and the jewel warns when the lights are on. The "Tee" slot outlet is independent of the switch and is always alive, ready for appliances.

In the style adapted to appliances and radio, the "Tee" slot takes the radio or appliance attachment plug, the finger grooved outlet controls the current to the "Tee" slots and the jewel warns that the current is on.



Here Is a Single Electric Unit in Which Are Combined a Switch, an Outlet and a Signal Light.



This house at St. James Wood, Piedmont, California, illustrates the pleasing effects easily obtained by the use of Johns-Manville Asbestos Shingles. Architect—Miller and Warecke, Oakland, Cal. Roofing Contractor—General Roofing Company, Oakland, California.

Profits are Greater, Sales Quicker with Johns-Manville Asbestos Shingles

THE Johns-Manville national advertising campaign is seeking out the prospective house builder in your neighborhood. It will give him new information about the importance of roofs. It will help him to choose his roof from materials that will provide safety from fire, permanent beauty, and long wear. To the prospective house builder, Johns-Manville

Rigid Asbestos Shingles mean that the house is well built from top to bottom.

Try Johns-Manville Asbestos Shingles on your next job, and let them help you sell your houses. Send the coupon for full information concerning the way in which Johns-Manville Rigid Asbestos Shingles have been successfully used by builders everywhere.



MASTER of ASBESTOS
Johns-Manville
Rigid Asbestos Shingles

JOHNS-MANVILLE CORPORATION
New York, Chicago, Cleveland, San Francisco
Branches in all large cities
Canadian Johns-Manville Co., Ltd., Toronto
(Mail this coupon to branch nearest you)

Please send me information about using Johns-Manville Asbestos Shingles on houses built for sale.

Name

Address

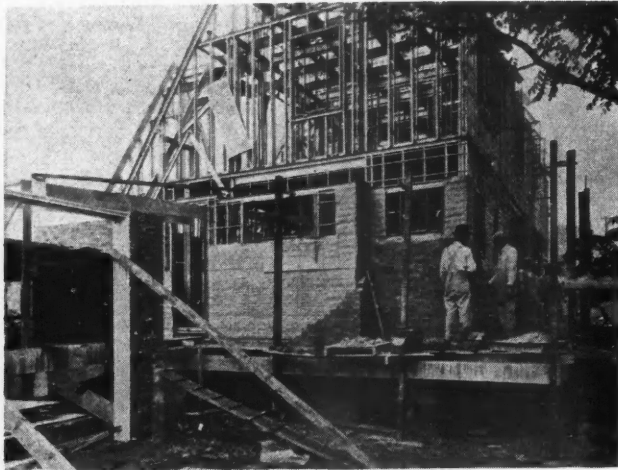
City.....State.....

R-3-12

Steel Windows in Steel Frame House

NATIONAL interest in the model steel frame house now nearing completion in Pittsburgh has been aroused not only by the possibilities of reduced costs from the use of steel materials but also by the promise of large savings in labor payrolls. Louis Brandt, noted housing engineer, in a recent address before the Better Home Builders' Association, at Columbus, Ohio, pointed out that field labor in the construction of a house represents upward of 45 per cent of the total cost and that, to guard against unproductiveness of labor, men should be hired on a basis of normal output.

In connection with the model steel frame house, Mr. Brandt says that because a large part of the work on the materials has been done in mill and shop, and because the



The Cost of Installing the Steel Windows in This Model Steel Frame House Was Even Less Than in the Conventional Frame Building.

units are larger and lay up faster, and are more simple to assemble by men having a little experience, the amount of labor time is very materially reduced. In addition, the normal labor output per man can be easily fixed and actual productiveness checked.

The windows used in the model steel frame house are of a well-known steel casement type. Reaching the job complete, with swing leaves hung and hinged in the frames, and with a priming coat of paint already applied, these windows are lifted into the wall openings and quickly anchored in bucks. The cement backing of the brickwork makes them weathertight, and future caulking is necessary. According to Mr. Brandt, the cost of installing windows in the steel frame house is much less than it is even in the conventional frame building.



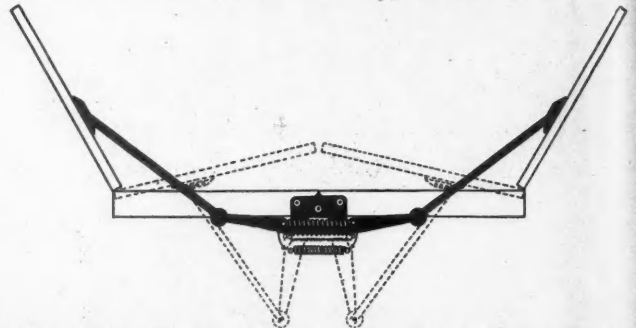
Positive Control of Garage Doors

HERE is a garage door control which is inexpensive and can be easily and quickly installed on any garage having outside swinging doors, but which will prevent the swinging, banging and slamming of the doors in any wind, will hold them wide open when they should be opened and keep them shut when they should be shut. This control automatically opens both doors when you pull either door open and automatically closes both doors when you push either door shut. It fits doors of any width.

This control eliminates the bother of continually getting out of your car to re-open doors while driving in or out of the garage and prevents possible damage to fenders or finish from slamming doors. It also eliminates one of the dangers of monoxide gas poisoning because the doors

of the garage cannot blow shut while you are working on the car with the engine running or warming up.

Installation requires merely the driving of three lag screws and four carriage bolts. Once installed the control can be forgotten, it requires no oiling or greasing, and will last a lifetime, as it is of all metal construction. It comes



Outswinging Garage Doors Are Completely Controlled by Means of This Simple Inexpensive Equipment.

completely assembled ready for installation, and takes about twenty minutes to install. It is not affected by rain, snow, ice or wind.

This control consists of channel iron arms which are attached to the tops of the doors and operate on pivots from two segment gears. A sturdy steel spring is attached to the arms so that it oscillates from front to back of the axis of the segment gears. The tension of this spring comes into play either in front or in back of the axis. In other words, when you want to open or close the doors, you push or pull one door until the spring moves past its "hump" or point of greatest tension. From then on the spring takes up the load and opens or closes the doors automatically and holds them in position.



New Rule Simplifies Estimating

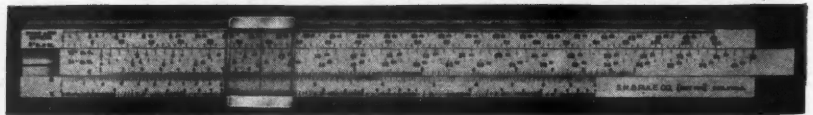
THE illustration shows a new estimating rule which should prove of value to builders by eliminating guesswork and errors and making difficult calculating easy. It is used to take off rapidly quantities of lumber from plans; to find the area of surfaces rapidly, by logarithmic scales; to obtain the cubical basis for any given dimensions quickly and to save time on all calculations.

This rule has 11 different scales. Three of these are logarithmic scales and eight are equally divided scales for finding the number of joists, boards, flooring strips, etc. The operation of the rule is simple. By sliding the glass indicator to the necessary dimension the exact number of joists, boards, etc., are instantly found.

The main scale is a foot and inch scale, that is, 1/4 inch equals a foot and each 1/4 inch is divided into 12 equal parts, representing inches. This may be called a log, and from this log all the various items of lumber are determined. Six of these scales are also marked for use when taking dimensions direct from plans.

Six-inch and four-inch lumber may be exactly determined without adding any waste as the fact that they are dressed down to smaller size is already taken into consideration on the rule.

Two auxiliary marks on the rule for checking lumber lists are an added convenience and by the use of these marks the exact amount of lumber required in any size building can be determined by one simple operation.



This New Rule Makes the Calculation of Lumber Quantities from Plans a Simple, Quick Job.

Holt Bid

*Figures Costs
Easily*

Spend Less Time —Estimating—

Use the Modern Up-to-Date HoltBid Service Method

Copyrighted and patents pending

A building starts with an estimate.

An estimate means tedious hours of labor, trying to anticipate the cost.

Figuring, checking, counting. Listing dimensions, pieces and prices.

Countless chances for mistakes and omissions.

Uncertain of this and doubtful of that.

Is the bid too high? or, Are my costs too low?

The relief from all this grief is HoltBid.

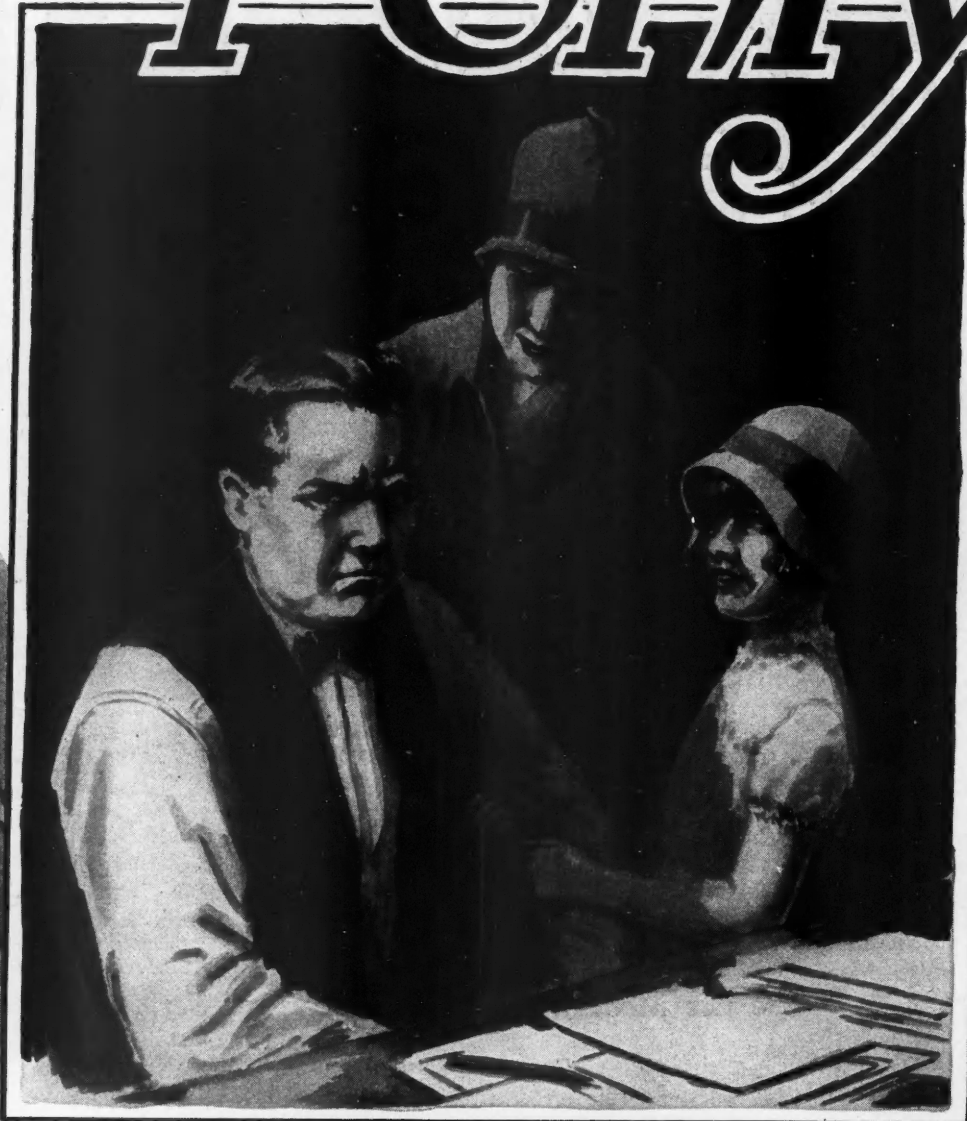
No long tiresome hours with Holt-Bid system. Simple, easy to use and absolutely accurate.

Can be applied in eight hours. No study, no problems in mathematics or rules to memorize.

No complicated specifications. HoltBid is complete—Includes all structural material and labor costs.

HoltBid will give accurate building costs on Homes, Apartments, Flat Buildings, Stores, Barns, Garages or any other ordinary building in less than an hour.

"If I Only



HOLT BID
solves
estimating
problems
in a hurry

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



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“*had time*”

That's a Poor Excuse

*When **HOLTBID** will take care of your estimating and leave time for recreation*

There is time for enjoyment when you use the HoltBid method for figuring your costs. You can add extra hours to your day.

Think of it! One third of your time to spend as you like without injury to your business. Only 30 to 50 minutes are required to estimate ordinary buildings.

There is no need to spend your leisure hours getting out estimates for “hurry-up” prospects. With HoltBid you can save from three to five hours on every job you figure.

You owe it to yourself to use HoltBid. The tiresome evenings spent over material lists and specifications are wasted. These could be your “play time” hours and still you could make more money—do more business—if you were a HoltBidder.

HoltBid enables you to make a detailed *accurate*

bid in a fraction of the time it requires to figure the same total by the old methods of estimating.

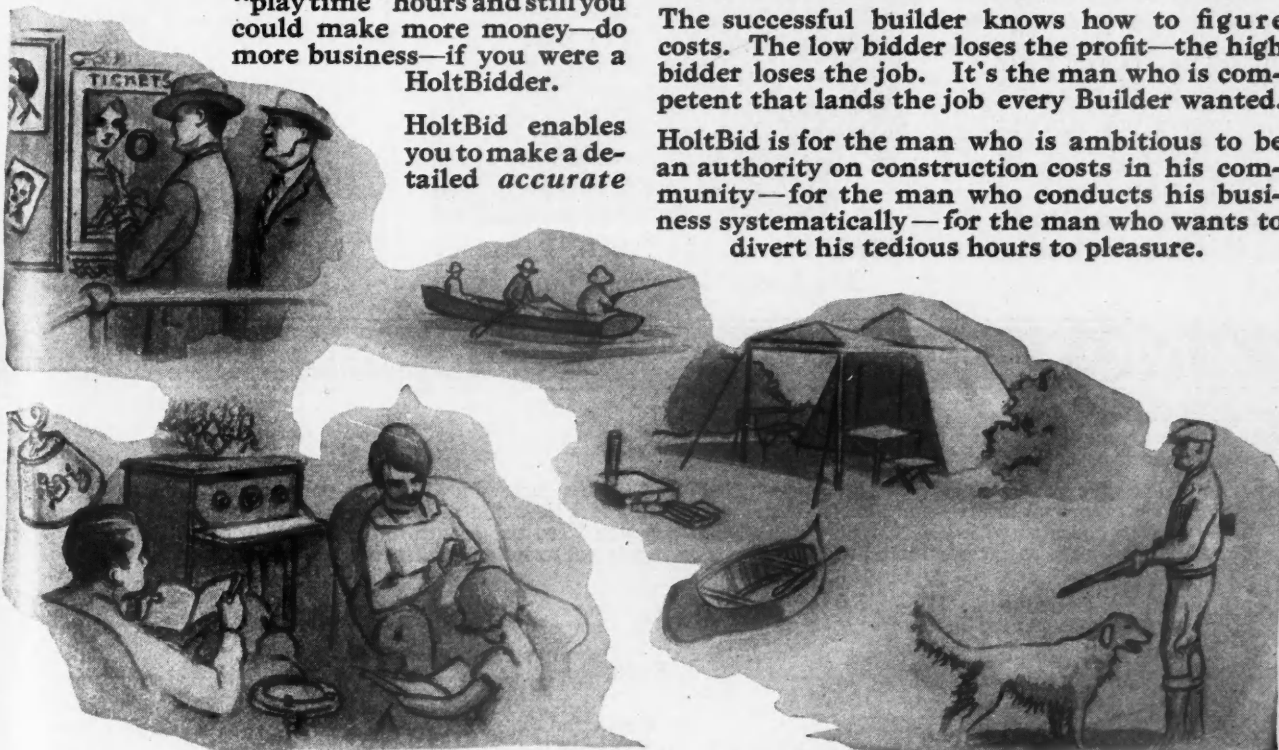
It also enables you to change your bid in a few minutes if the customer wants to alter the original plans or selects an entirely new plan.

HoltBid will give you unsurmountable advantage over competitors—it will save your time—it will save your money—and it will banish the uncertainty that goes hand in hand with every bid.

HoltBid will enable you to get the bigger—and more profitable job. HoltBid will increase your ability to discuss building problems—clients will come to you more and more for consultation.

The successful builder knows how to figure costs. The low bidder loses the profit—the high bidder loses the job. It's the man who is competent that lands the job every Builder wanted.

HoltBid is for the man who is ambitious to be an authority on construction costs in his community—for the man who conducts his business systematically—for the man who wants to divert his tedious hours to pleasure.



HoltBid

Sent for Only

\$ 1.00



My Personal

I GUARANTEE that the HoltBid Method of Estimate Building Costs will be satisfactory to you in every respect. All I ask is that you give it a fair trial, and that is the only condition. If at the end of thirty days you do not find the HoltBid Method exactly as represented, I will refund the small down payment you have made.

Guarantee

During the thirty days of free examination it is understood that our corps of expert HoltBidders will hold themselves in readiness to answer any question, and to give you true appreciation of the great value of the HoltBid Method. In accepting your order I place my full confidence in your intentions to give the HoltBid Method a fair trial.

WILLIAM A. RADFORD, President
The HoltBid Service Company

PIN A DOLLAR BILL TO THIS COUPON AND MAIL TODAY

William A. Radford, President,
HoltBid Service Company,
1827 to 1901 Prairie Ave., Chicago, Ill.

I would like to give your HoltBid Method a personal trial. I enclose herewith \$1.00 that you may send me the complete service on 30 days' approval under your money-return guarantee. If I keep the material more than thirty days it is understood that I wish to continue with HoltBid Service and will pay you \$5.00 per month until the full price of \$85.00 has been paid. The shipment I am to receive includes all units and a year's subscription to American Builder.

Name

Town State

Street Address..... Occupation

Note:—The service must be entered in the name of the individual and not the firm.

A.B. 12-28

(Without the American Builder, we shall deduct \$1.00 from the total purchase price. If you already are a subscriber, we can readily extend your subscription for a year.)

Utility Saw With New Features

A NEW utility saw recently patented and now being offered to the public, differs substantially, it is stated, both in design and construction, from other machines of this type now being sold.



This Saw Is Said to be Quite Different from Other Machines of Its Type Due to Its Latest Improvements.

The quadrant or swivel block in this new machine is also a hinge block which causes the table to tilt parallel with the guides, regardless of which end is elevated. This feature is distinctive.

Made of the best materials, this machine compares favorably with the highest priced machines on the market and embodies features that are found only on machines sold at many times the price, say the manufacturers. Among the outstanding features are a saw spindle running in semi-thrust, dustproof, ball bearings. The table has a slot or throat three inches wide, enabling the operator to use a dado set or joiner head, also allowing one to place moulding cutters in

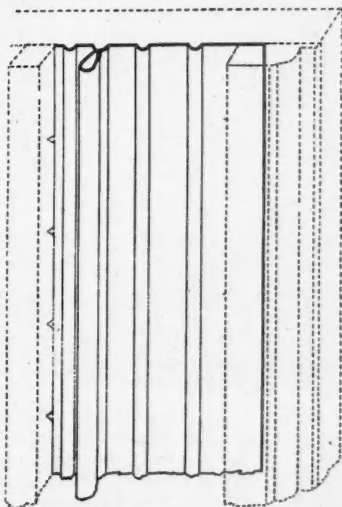
place of joiner knives for making any straight moulding.

The table can be elevated at both ends, making possible work with the table level or tilted. The table can be tilted to any desired angle with the side of the saw blade and still remain in perfect alignment with the saw blade, irrespective of the angle of inclination at either end of the table. The guides are mechanically correct and in perfect alignment with the saw blade at any elevation or any regular relation of the table to the saw blade.



Metal Weatherstrips Improved

THE illustration shows an improvement in metal weatherstrips of the rib type whereby quicker installation can be made. This is accomplished by means of a saw tooth extension on runway strips which enter the parting stops, doing away with the tedious job of kerfing or nailing and holding the strip in the proper place. It is said that this has a decided advantage over the old method and is already gaining popularity. The manufacturers state that installers can do 25 per cent more work by this method, making it quite economical.



Quicker Installation of This Rib Type Metal Weatherstrip Is Made Possible by a Saw Tooth Extension.



Kalamazoo to Hold Home Show

THE Kalamazoo, Mich., Real Estate Board, at a recent meeting decided to hold its Fifth Annual Complete Home Show some time early in 1929, probably in February, as in the past 10 years. The coming show promises, on the basis of inquiries and other indications, to surpass any previous show sponsored by the Kalamazoo Board.

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PATTERN
No. 621

HANGS LIKE
WALL
PAPER



Oil-Textd
New —

Reg. U. S.
Pat. Off.

**Permanent—
Textured—
Wall Covering
Most Serviceable
Decoration Obtainable**

Washable—Decorative—Easily Applied—Inexpensive—Built up in Linseed Oil—No Surface Cracks—Easily Repaired—Can be removed, permitting any other type of decoration.

The wall is finished in one operation without smudging the woodwork and a uniform texture is assured. Applied to any smooth surface like wall paper.

Made in any color and in a variety of designs suitable for any room in the home, public hall, stores, etc.

FREE SAMPLES and literature sent upon request.

Width of Roll 19 1/2 Inches Trimmed

PRODUCT OF

Lincrusta-Walton Co.

Hackensack

New Jersey

Ornamental Iron Work

Plays an Important Part in the Design of Handsome Modern Homes

UNTIL quite recently ornamental iron work has been a much neglected medium for the achievement of beauty and utility in this country, but the modern trend in building and home design shows a new appreciation which is very rapidly taking hold of the whole country.



Grace and Sturdiness Are Combined Most Successfully in the Wrought Iron Terrace Railing of This Washington Highlands Residence in Milwaukee, Wis.

Europe has for many years, in fact for centuries, made extensive use of ornamental iron work and the cities and hamlets of Europe are full of carefully preserved examples of this art. An authority on the



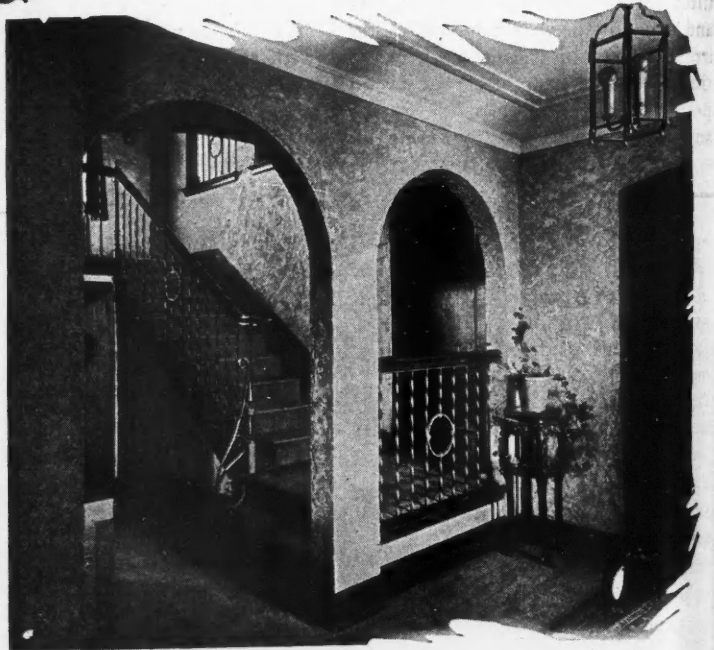
Ornamental Iron Is at Last Receiving Its Proper Recognition in This Country. An example of the excellence of American ornamental iron is seen in this wrought iron door grille and railing produced by the Badger Wire & Iron Works for the residence of Dr. Tainter, of Milwaukee, Wis. A. C. Sehrt Co., designers and builders.

subject, writing about the ornamental iron work of Germany, recently said:

"The truth is that Germany is hardly second to Italy, and easily superior to France, in the variety and individuality of the treasures it has to show the tourist. One finds perhaps more impressive, graceful or charming, beauty in the small towns or hamlets than in the large cities, and so I should like to tell the ones who have the urge to travel to get off the highways and visit the byways.

"It is surprising how much, quantitatively, Germany has to offer in ornamental bronze and iron work, ancient and modern, and it is at times touching to know what care is expended to preserve particularly the ancient work. I had occasion to watch the repair of the railing around the fountain at the Roemer in Frankfurt. Rather than make entire sections new, as much as possible of the old railing is preserved and pieces are spliced and riveted or welded in place with the utmost care and the new work is given the appearance of the old by hammering, forging and heating."

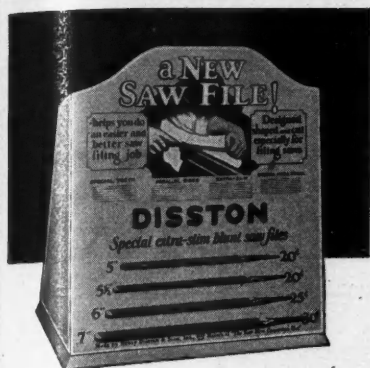
This indicates clearly the appreciation of this type of art which thrives in the older centers where time is taken for the full appreciation of beauty and the building industry has not been swamped with the purely utilitarian task of providing sufficient space under pressure of meeting imme-



Nothing Could Harmonize More Completely or Be More Serviceable Than This Beautiful Wrought Iron Balustrade Railing in the Gordon Osborn Residence at Sheboygan, Wis. C. W. Weeks, architect.

diate needs.

But a new period has arrived in American building activity. No longer do we allow the pressure of absolute need to dominate. It is not necessary for those who would find beautiful ornamental iron work to go to the older countries of Europe. Today our American manufacturers are producing ornamental iron work which rivals, if it does not surpass, the finest to be found in Europe. The American public has discovered ornamental iron and the designer and builder who would keep in step with progress must give it constant consideration.



You will want these new Saw Files

YOU want saw files with the right bite, cut and steel—files of Disston quality.

But never until now have you been able to get files such as the new Disston Special Extra Slim Blunt Saw Files.

No taper, but the same thickness from tang to end, giving a level, uniform stroke.

File "finds its bearing" against the tooth more quickly; extra slim, so you can see just where and how the file is cutting.

Special cut, with plenty of bite, which cuts smoothly, lasts longer.

Made of the same tough Disston Steel that Disston puts into the files used in filing Disston Saws.

Your own test will prove to you that these new Disston Files will outwear two ordinary files. You can get them now at the store where you buy your Disston Saws.

SEVEN LIGHTWEIGHT SAWS IN THE NEW DISSTON LINE

... and Eight Regular Pattern (Standard Width) Saws

GREAT improvements have been made in hand saws. DISSTON has made them!

You will realize how much these improvements mean to you, as soon as you go to a hardware store and take a new Disston Hand Saw in your hand.



Lighter blades, thin yet stiff, which cut faster, run smoother, and save your strength at every stroke. Made lighter by Disston true-

taper grinding, which removes all unnecessary weight without making the saw limber. You get a thinner blade, with better clearance, better balance—a blade stiff and sturdy, with tough temper, perfect tension and the "hang" and "feel" that only Disston can put into a hand saw.



You get new beauty in a hand saw: a higher polish, a finer finish. Handles of new design, with larger hand-holes and with the new Disston weatherproof finish.

Choose your next saw from the seven new Disston Lightweight (ship) patterns or the eight new Disston Regular (standard width) patterns.

HENRY DISSTON & SONS, Inc.
Philadelphia, U. S. A.
Canadian Factory: Toronto



D-15 Lightweight Straight Back



D-12 Lightweight Straight Back



D-23 Lightweight Straight Back



D-20 Lightweight Skew Back



D-16 Lightweight Straight Back



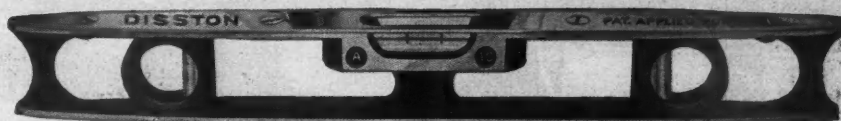
D-8 Lightweight Skew Back



D-7 Lightweight Straight Back

DISSTON

"THE SAW MOST CARPENTERS USE"



You'll like this new Disston Pocket Level

IT is the Disston A-10 Featherweight—length 9 inches, weight only 2 ounces—the lightest and handiest little level on the market.

Made of the same aluminum alloy

as used in airplanes. Top plate polished. Body black rubberoid finish. Etched lines on level glass and on two plumb glasses are proved and guaranteed accurate. Your dealer can supply it.

MOTOR TRUCKS *and* TRAILERS



Some Pointers on the Care of Motor Trucks

PROBABLY the best explanation that can be given as to the care of a truck would be a comparison with our own daily lives.

We all know—or should know—that our personal health is largely a matter of resistance. Systematic eating, enough rest, and the right kind of food keep us in good physical condition. A motor truck needs systematic lubrication, humane treatment and good lubrication oil as much as we need the things just mentioned.

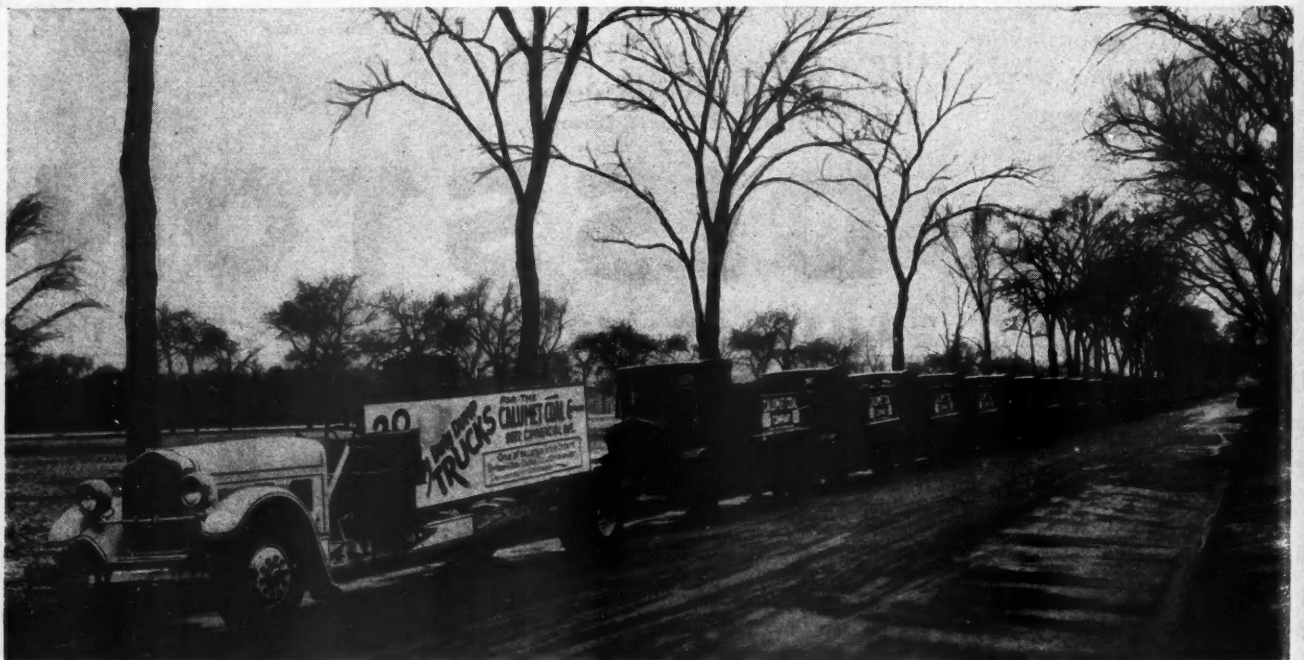
We all take extra precautions against seasonal conditions. And a motor truck needs the same kind of care, a sort of readjustment and general tuning up to meet the different climatic conditions. Most of us are pretty careful not to overwork ourselves or to attempt to carry more work than nature has provided us with facilities for shouldering. We need to keep within our bounds of capacity and so does a motor truck. We can keep on overloading a motor truck just the same as we can keep on overloading ourselves with work, but sooner or later there's going to be a heavy doctor's bill, to say nothing of a protracted sojourn to the repair shop. And if there comes a time when an emergency demands that we take on more work, we know, or,

that is, we should know, that we have to take care of ourselves accordingly if we are to expect the wheels to keep on turning.

Then again, there is that element of good old common sense plus a certain knowledge of "what makes the wheels go around." Now, the majority of people have at least a smattering of knowledge on the subject of anatomy and medicine. If we know the preventatives of illness and apply them conscientiously we may avoid serious complications. And the same thing holds true if we know what to do when symptoms of illness appear.

For instance, when we get a cut or bruise, we apply an antiseptic, or when we feel the symptoms of a slight cold, we prescribe a corrective for ourselves. But when something of a serious nature develops, we know that it is far better to call in a physician, or specialist. The point is, however, and this applies to motor trucks, too, that we must know something about the physical makeup in order to be able to recognize symptoms, to know whether they represent small or serious troubles, and to take care of them if they are small ones.

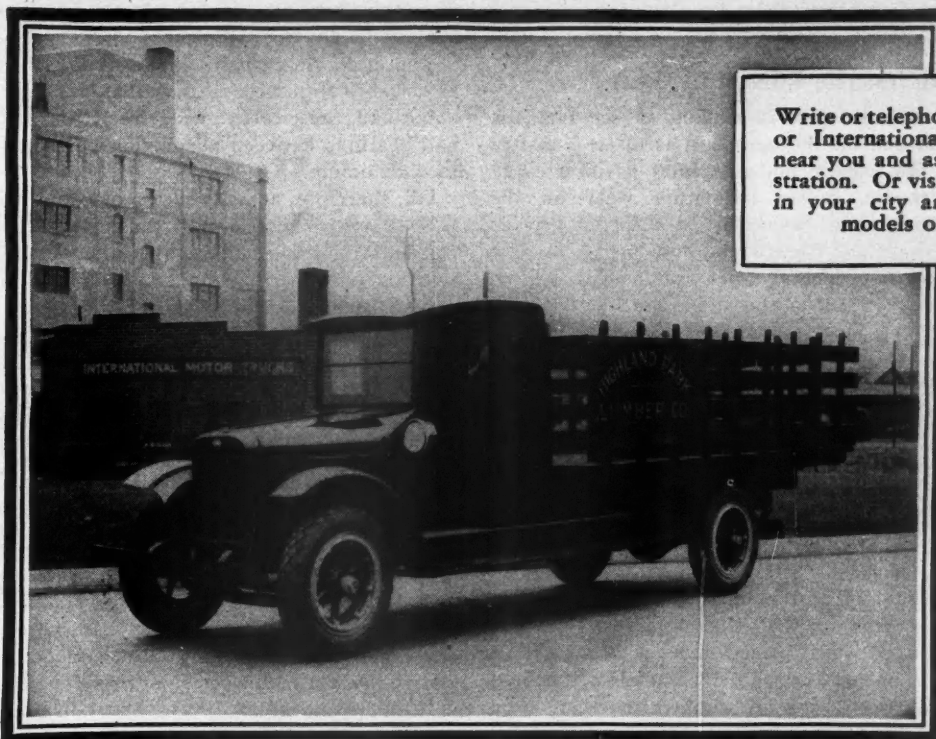
Doesn't it seem, therefore, that every man who is en-



Thirty New Trucks, of One Make and Model, Were Recently Delivered to the Calumet Coal Company, of Chicago, for the Delivery of Building Materials and Coal and for Road Building, in Accordance with a Policy of Standardization for the Purpose of Economy.



The International line of Speed Trucks offer a wide choice of bodies and equipment. Each body is designed to contribute the utmost in service, appearance and utility.



Write or telephone to the Branch or International Truck dealer near you and ask for a demonstration. Or visit the showroom in your city and examine the models on display.

Announcing Important Improvements in INTERNATIONAL Speed Trucks

⌘4-Wheel Brakes Now on Every Model for Safety⌘



Always in the front rank in truck engineering, the International line of Speed Trucks is now offered with important improvements throughout, in design and construction.

Greater economy in operation, roomier bodies, new cabs, greater driving ease, fuel and air cleaners, longer and stronger frames. The same reliable spring suspension as before, and four-wheel brakes on every model! One of the examples of International advanced engineering

is the Six-Speed Special — the only Heavy-Duty Speed Truck built with 6 speeds forward and 2 reverse.

Capacities range from 3/4-ton to 2 tons, and all 1 1/4, 1 1/2 and 2-ton models are available with either 4 or 6-cylinder engine. There are bodies for every kind of work a truck must do, from economical excavation to delivery de luxe. There is speed for good going, plenty of power for bad, and sturdy stamina to stand up under every load. Trucks easy to ride and drive, easy to look at, easy to like!

And every International Speed Truck is all truck — not a rebuilt passenger car in the line. Every one of them is built for work — and famous for it. And they are better trucks now than ever!

These NEW-Improved models now on display!

THE SPECIAL DELIVERY is a speedy and sturdy 3/4-ton truck, of 124-inch wheelbase, and admirably adapted for most any light-haul requirement.

THE SIX-SPEED SPECIAL is a 1-ton job with 6 speeds forward and 2 reverse. A speed for every need; power for every emergency.

Model S is a general-purpose truck for regular hauling and delivery of 1 1/4-ton loads. Supplied with either 4 or 6-cylinder engine.

Model SF-34, 4-cylinder, and **Model SF-36**, 6-cylinder engine. Both of 1 1/2-ton capacity.

Model SF-46, 2-ton capacity, with 6-cylinder engine and 4 forward speeds.

Models SD-44 and SD-46 (4 and 6-cylinder). Heavy-Duty Speed trucks, especially designed for dump and trailer work. Four-speed transmission and cantilever rear springs.



In addition to the Speed Trucks, the International Line also includes Heavy-Duty trucks ranging from 2 1/2-ton to 5-ton sizes, Motor Coaches, and McCormick-Deering Industrial Tractors. All are sold and serviced by 169 Company-owned branches throughout the United States and Canada, and dealers everywhere.

INTERNATIONAL HARVESTER COMPANY

606 So. Michigan Ave. of America Chicago, Illinois
[Incorporated]

INTERNATIONAL
HARVESTER
TRUCKS
COMPANY

rusted with the care of a motor truck, representing a large financial investment, should learn at least the fundamentals of its operation?

Balancing the Load and Wear

It is important to take care in loading to see that the load is evenly balanced on the body. It is often a matter of habit to place the load in one particular position every time which, of course, causes premature wear on the chassis at that point. It is always best to place the greater part of the load toward the front of the body.

Perhaps you have noticed that most trouble with spring, axles, wheels, tires, etc., is on the right hand side of the truck. This is because most roads slope on the sides, and, since it is necessary to keep to the right in driving, the right wheels are caused to ride on a lower plane than the left wheels. It is well, for this reason, to take advantage of the full road in open stretches where it can be done with just consideration for others, and to give particular attention to adjustments and general care of the right hand side of the chassis.

Lubrication

A better understanding of the importance of lubrication can be gained by considering that even the finest steel, polished up to a mirror finish, if placed under a strong microscope, will show thousands of jagged points like the teeth of a saw. When two pieces are rubbed together, these teeth lock with each other. They are ripped out, twisted, and others are pulled into their places.

Something must be interposed between the surfaces to keep them from tearing each other to rack and ruin. And that something is oil. Oil not only fills up the thousands of minute depressions, but it actually interposes a film between the two surfaces. The moving parts of an oiled

machine do not rub against each other, but against sides of a thin film of oil which keeps the jagged teeth from coming in contact with each other.

The molecules which compose oil are perfect globes. So, as a lubricant, oil not only has the advantage of being liquid and, therefore, flowing freely, but it practically places ball bearings between all moving parts and reduces friction to a minimum.

Oil, therefore, actually wears out, and it is for this reason that the crankcase and transmission must be drained, cleaned and refilled at regular intervals. To mix good oil with old oil is just about as effective as to take four dead or partly dead dry-cell batteries and hook up one good one in the center.

When the truck is operating full time, it is best to drain the crankcase regularly once a week. Transmissions should ordinarily be inspected at least once a month and oil added if necessary. At yearly intervals, it is well to drain the transmission thoroughly, wash out with kerosene and refill.



A Fleet of Thirty New Trucks

ONE of the largest orders in the history of highway transportation in Chicago was completed recently when simultaneous delivery of thirty heavy duty dump trucks was made to the Calumet Coal Company.

Led by an escort of motorcycle patrolmen, the trucks left the factory branch for a twenty-five mile parade through the industrial region of the city, later to pass in review before executives of the Calumet Company at their main office.

All the units in the fleet are of one make and model. Ten are to be used for road building, and are equipped with batch dump bodies. The others have been put to work hauling coal and building materials.

You'll

be interested in this



Backed by thirty-five years of specialized experience in the screen industry, the Higgin Organization has now developed a Rolling Screen that operates satisfactorily under all conditions.

Up or down it glides—swiftly—quietly. As convenient as your window shades! Winter storing eliminated. No painting. No trouble. Ultra-modern home equipment—for the first time made thoroughly practical and amazingly serviceable!

What a selling point for the homes you build! Your clients *naturally* prefer rolling screens. And now you can give them the best on the market—at little or no extra cost to yourself!

Mail the coupon now for our illustrated booklet and complete information.

HIGGIN
ALL METAL
SCREENS

The Higgin Mfg. Co.
502 Washington Ave.
Newport, Ky.

Please send complete information regarding your new rolling screen.

Name _____

Street _____

City _____

State _____

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CERTIFIED EARNING ABILITY



CONTROLLED HAULAGE COSTS

THE one big idea that has dominated the Federal organization during its entire eighteen years of growth is this: That scientific study of haulage problems and scientific control of haulage costs offer greater economic possibilities than any one thing in the world's industry today.

FEDERAL has developed a simple and certain method for the control of haulage costs which will be mailed free to any business man. It takes the guesswork out of transportation. Regardless of how many or what trucks you use, it will effect savings. Ask for the Federal System of Haulage Cost Control.

It was to make such control possible to every branch of industry that Federal has developed the complete haulage service now offered. Forty-three chassis; more than 100 body and chassis combinations; exactly the right truck for every job, and every truck **ALL TRUCK**. These are the factors that have made all industry conscious of Federal's **CERTIFIED EARNING ABILITY** and of Federal's relation to business economy.

THE FEDERAL MOTOR TRUCK COMPANY, 5842 Federal Ave., DETROIT, MICH., U. S. A.
"Leading Specialists in Commercial Transportation"

FEDERAL TRUCKS

ALL SIZES—FOURS & SIXES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

A Life Time House



Residence at Rosemont, Pa. The roof of this beautiful house is insulated with Cabot's Quilt for winter warmth and summer coolness.

A life time house must be made of life time materials. The insulation must be rot-proof, vermin-proof, moisture-proof and fire-resistant.

Cabot's Quilt, built into houses over thirty years ago, remains just as it was when installed—unchanged, clean, effective.

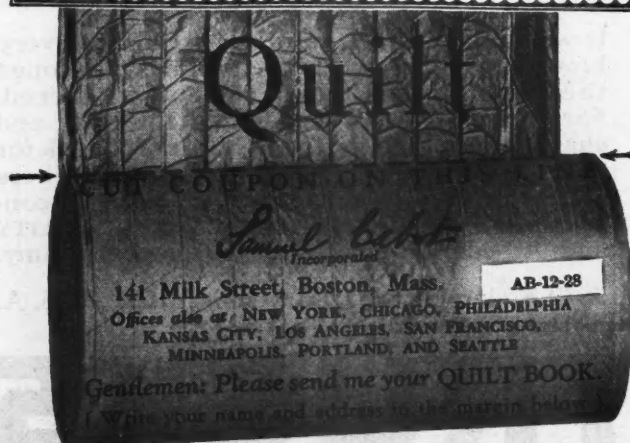
If you are building for permanence,

Specify

Cabot's Quilt

Time Tested for over 30 Years

Send in the coupon (Roll of Quilt) below for full information



Large Contract to Ferguson

ONE of the largest building and engineering contracts to be awarded a single company has been let to the H. K. Ferguson Company, Cleveland, Ohio. This contract is in connection with the \$15,000,000 telephone cable factory of the Western Electric Company, a subsidiary of the American Telephone & Telegraph Company, to be built at Baltimore, Md.

The company has secured 125 acres of land upon which building operations will begin as soon as title to the property has been conveyed. Initial construction will be a unit composed of plant buildings and equipment for the production of 110,000,000 conductor feet of cable weekly. The unit will be completed toward the end of 1929, according to expectations, and will employ 1,600 workers.



Ruddon Receives Appointment

M. L. PULCHER, president of the Federal Motor Truck Company, has announced the appointment of R. W. Ruddon, first vice-president and general manager of that institution. Mr. Ruddon entered the Federal organization 15 years ago as secretary to Mr. Pulcher. In 1918 he became assistant secretary; in 1924, assistant general manager, and early in the present year, first vice-president. During the past few years especially his work has largely centered about the financial affairs of the company which, under a conservative policy of expansion, has grown to its present proportions without addition to the capital investment of \$100,000 subscribed by its founders. The concern's growth has been financed in its entirety out of earnings.



De Walt Opens Detroit Branch

THE DE Walt Products Company, Leola, Pa., manufacturer of woodworking machinery, has recently established a direct factory branch and warehouse in Detroit, Mich., at 7 W. Davison avenue. H. B. Franklin is in charge of the new branch.



Houghton Joins Agency

FREEZE-VOGEL-CRAWFORD, Inc., have appointed Richard D. Houghton as director of field research and market investigation in connection with construction and agricultural equipment in both domestic and foreign markets and his intimate knowledge of the problems of manufacturers, distributors and salesmen should prove valuable to the agency's clients in this field.

Mr. Houghton's experience includes four years as salesman, sales-promotion manager and Boston district manager for the Koehring Company, manufacturers of concrete mixers, pavers and power shovels; a like period with the Leach Company of Oshkosh, Wis., as sales manager, and three years as export manager of the Trackson Company, Milwaukee, manufacturers of tractor equipment. In the latter capacity Mr. Houghton built a world-wide distributing organization for Trackson Products.

In addition to his research work Mr. Houghton will contact dealers and distributors representing the clients of Freeze-Vogel-Crawford, Inc., for the purpose of assisting them with their merchandising and sales promotion activities.



Richard D. Houghton has joined Freeze-Vogel-Crawford, Inc.

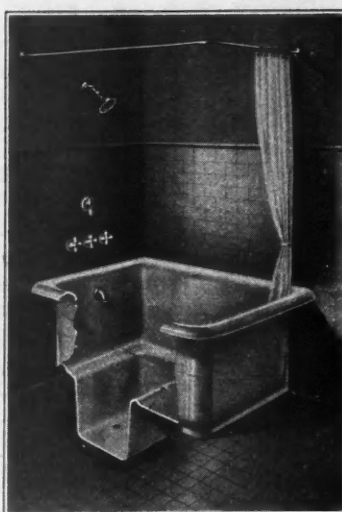
A Bath of the Future The Combination Bath Tub

Regular Bath, Shower Bath, Seat Bath, Foot Bath, Child's Bath. All in one piece, Patented

Semi-Vitreous Porcelain and Enameled Iron Ware



**COMBINATION BATH
PLATE 10-E**
Enameled Iron Ware, 44x30 inches to tile in recess only. Enameled white front. Waste in foot section either right or left hand end.



**COMBINATION BATH
PLATE 11-E**
Enameled Iron Ware, 44x30 inches to tile in right or left hand corner. Enameled white all exposed parts. Same as Plate 10-E except for corner installation.



**COMBINATION BATH
PLATE 30-E**
Semi-Vitreous Porcelain Ware, 44x30 inches to tile in right or left hand corner, or in recess. Glazed white all sides.

The COMBINATION BATH is an entirely new departure in the development of modern sanitary comfort, comprising, as it does, a SEAT, FOOT, SHOWER and CHILD'S bath, all in one.

It possesses many essential common sense features not found in any other types. For instance, it is more comfortable and less wasteful of water; it is possible to bathe and treat the feet without the removal of all clothing, by having only a small amount of water in the foot section. The ledges on the end and both sides of the foot section enable one to treat the feet conveniently, while the dimensions of the foot section allow ample space for the feet when standing or sitting. The mother or maid can bathe a child in comfort under ideal conditions. The child can be bathed on the seat section, and then, if desired, dipped in the water filled foot section.

Remember, when you are considering the length of the COMBINATION BATH in comparison with other kinds of tubs, that you do not assume a half reclining position when using the COMBINATION BATH, but instead a sitting position; so that your length from the knee down does not count in the length of the space required as it does when using the ordinary bath; also that the uncomfortable, cramped position assumed in the latter case is entirely removed and supplanted by a natural, comfortable posture, such as experienced when sitting in any easy, comfortable chair with just as much room in every direction as a person would have in using the ordinary bath of greater length.

Furthermore, when the COMBINATION BATH is used as a shower bath it is equal to any standard type shower receptor. The arrangement of the seat and foot bath permits the taking of a head or body shower bath, the latter without wetting the hair. This commends it, and is a feature which should not be too lightly regarded; in fact, we strongly recommend installation of showers in connection with the COMBINATION BATH.

Write Us for Descriptive Booklet Giving Measurements and Other Details

**WHEELING SANITARY MFG. CO.
WHEELING, W. VA.**

*Manufacturers of High Grade Plumbing Fixtures
Sold by Leading Jobbers of Plumbing Supplies*

When one desires to get out of the COMBINATION BATH, he can do so without the aid of grip-rails or even the use of his hands, by merely standing up—just like arising from a chair.

Water can be turned on and off or discharged without changing from a sitting position, instead of being obliged to slide along the bottom of the tub, in order to reach the valves, as is necessary when using any other type bath.

In planning bath rooms, space saving is oftentimes a most important problem, which can be readily and satisfactorily solved by the adoption of the COMBINATION BATH. This is all accomplished without encroaching on the space required for persons weighing as much as 250 pounds to an extent that comfort is sacrificed in any degree.

Tone will be given the bath room wherein such a distinctly attractive and meritorious fixture as the COMBINATION BATH has been installed—an added attraction fully appreciated and not likely to be overlooked by your guests.

We furnish plans for installing the COMBINATION BATH, avoiding the necessity for having any part of the waste fittings extended through the ceiling below the bath room, requiring a suspended ceiling; which, in many cases, would prove undesirable.

These plans provide for raising the bath about four inches above the floor level, and filling in the open space with tile. This increases the extreme height of the tub from floor to top to about twenty-one inches, which is slightly less than the height of a staple bath on legs or base.

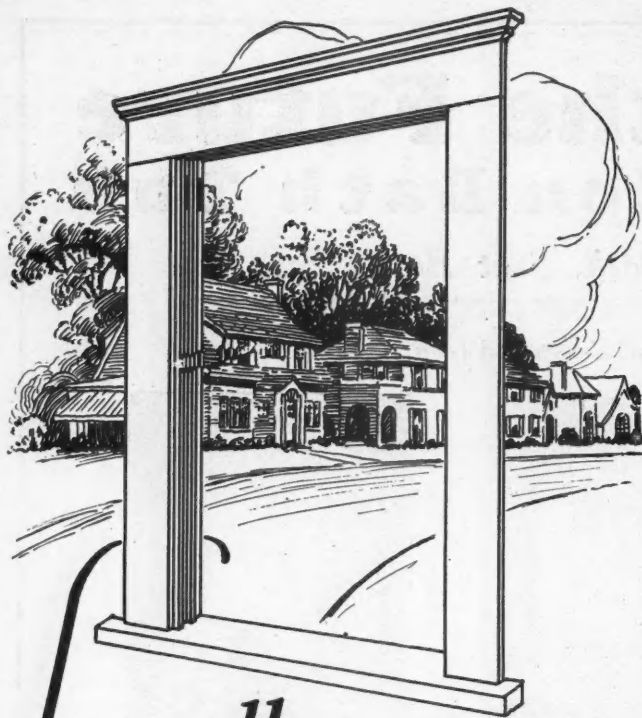
Many of the COMBINATION BATHS have been installed in this manner, and have proven entirely satisfactory.



Plate 126-E "The Tranquill" all white Syphon Jet Water Closet Combination.



Plate 100-E Lavatory on Pedestal. Two sizes—24x20 inches and 26x22 inches.



For all Buildings a Quality Frame

The Bradley-Miller Frame is made for the builder who wants good construction. It's made from Genuine Old-Fashioned Michigan White Pine—and you can guarantee that it will not warp, split, shrink or swell.

It comes in two easily assembled bundles of seven units that are readily nailed together in a few minutes time.

The Bradley-Miller is a Quality Frame and will give a life-time of service.

We have some interesting literature and catalogs; they are yours for the asking. Just drop us a postcard. Do it today.

BRADLEY-MILLER & CO.
1200 Marquette St., Bay City, Michigan

Bradley-Miller
Michigan White Pine
Frames

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

Pennrich & Co., Inc., 29 Broadway, New York City, offers a booklet descriptive of the qualities and application of an insulating material known as Torfoleum, which has been used with success, for many years, in Europe and is now made available in the United States by this company.

The Armstrong Cork & Insulation Co., Pittsburgh, Pa., has published a circular under the title "Enough Is None Too Much," which is designed to answer the question, "What Is Adequate Insulation?"

The American Nokol Corporation, Chicago, has published a booklet under the title "Oil Heat—the Joy of More Than a Million Homes," which presents the story, illustrated in colors, of heating with this company's oil burners and also catalogs the various models of burners which it manufactures.

"Beautiful Homes of Concrete Masonry," is the title of a new booklet published by the Portland Cement Association, 33 West Grand Ave., Chicago, which presents in a most attractive manner the artistic possibilities of concrete masonry for home construction.

"Asphalt Through the Ages" is a booklet published by the American Asphalt Paint Co., 844 Rush St., Chicago, presenting the history of the use of asphalt and the facts in regard to the asphalt paint which the company manufactures.

"Trico News" is the periodical publication of Trico, Inc., 1790 N. Kolmar Ave., Chicago, and contains many interesting and useful items on the subject of Trico radiator furniture.

The A. C. Horn Company, Horn Bldg., Long Island City, N. Y., offers a group of loose leaf pamphlets, in a filing folder, covering its various products, such as waterproofing, dampproofing and decorative materials for the conservation of buildings.

The Frigidaire Corporation, Dayton, Ohio, has published two handsome new booklets under the titles, "Frigidaire—Automatic Refrigeration Systems for Commercial Uses" and "The New Frigidaire—More Beautiful, More Powerful Than Ever."

"Drafting Room Practice," by Eugene Clute, published by The Pencil Points Press, Inc., 419 Fourth Ave., New York City, is a most complete and handsome new volume, the purpose of which is stated as being "to present, in a clear and useful manner, a view of present-day drafting-room practice, as exemplified by the methods employed in the offices of some of the best architects." The entire work of the drafting room is included within the scope of this book, not merely the actual making of drawings, but the handling of projects from the time they come into the office until they are completed. Price \$6.

"The Real Log Cabin," by Chilson D. Aldrich, architect, published by the Macmillan Company, New York City, is a book which answers all of the questions confronting the person who starts out to build a house of logs. It is a thoroughly practical, clearly handled treatment of the whole subject of log construction and at the same time is written in such a style as to be exceedingly entertaining reading to the prospective owner as well as to the professional builder. The author is an architect who became interested in log cabin building after having 20 years of experience in his profession. He has, since then, devoted himself exclusively, for several years, to designing and building log cabins, and as a result is remarkably well qualified to write on this subject. Price, \$4.

A FRANTIC CALL FOR MEN WHO CAN READ BLUE PRINTS

AND RUN JOBS AT \$4,000 TO \$12,000 A YEAR

SEE how easy it is now for any man to get ahead in the building game. Nowhere else does such simple training count for so much. Nowhere else are there so many countless thousands of openings as there are with contractors, builders and real estate firms, who are constantly calling for practical men who can read blue prints. Seven billion dollars will be spent this year for building. Trained men are at a premium in this gigantic industry. Untold thousands are needed at steady salaries far above the wage scale.

90 DAYS' EASY TRAINING PUTS YOU ON THE WAY TO A BIG-PAY "BLUE PRINT" JOB

NO longer is it necessary for building tradesmen to spend years learning all the "mysteries" of blue print plan reading. For now you can get the blue print training in three months that has taken others years to pick up "on the job." We train you at home in spare time by the fascinating "blue-print-method" with lessons that are as easy to read as your newspaper. You do not need more than a common school education. There is no hard, grinding study—the whole course is just like playing some interesting new game.

from practical building experts. You learn how to read all the plans—estimate all the costs—and supervise the entire construction of a building. You learn everything a foreman, superintendent or contractor has to know.

IF YOU LIVE IN OR NEAR CHICAGO

Visit our School for Builders, open day or evening. A thousand men attend each year. Enter any time. You can get the same training at home, by mail. Same plans; same lessons; same instructors. The coupon brings all facts Free.

SIMPLE AND EASY AS A-B-C

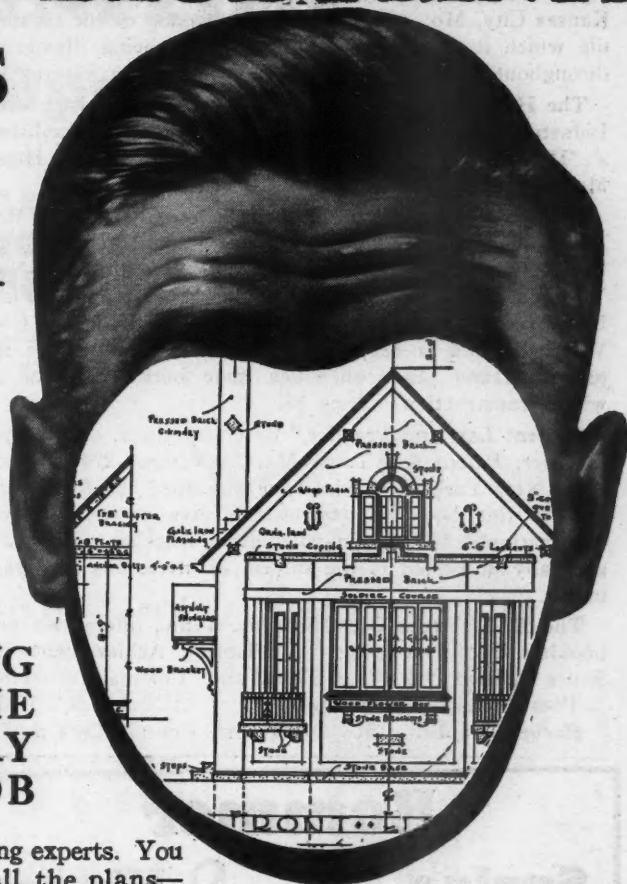
These plans and lessons come to you from the oldest and largest school of building construction in the country. This is the kind of training that puts men quickly into the \$5,000 to \$15,000 a year jobs, and in contracting businesses of their own. You learn from actual blue print plans—

A BIG-PAY JOB—OR YOUR OWN BUSINESS

With this quick, easy training, the building field is wide open to building tradesmen who want to become foremen and superintendents—or who would like to go into business for themselves. Burgert, Ill., stepped into a Foremanship at a 200% increase in salary. Clifford Scholl went from laborer to Ass't Superintendent in 8 months. Marchand, La., writes: "My salary is now increased 196%." After finishing his training, Baker,

Chicago Technical School for BUILDERS

DEPT. R-121, CHICAGO TECH BLDG. 118 E. 28th ST. CHICAGO, ILL.

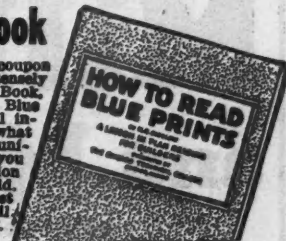


Ohio, made \$3,800 clear profit in 3 months as a Contractor. Depke, R.L., increased his salary 700% in 12 months.

If you really want more money—if you hope to own a business of your own—if you want quick advancement in the building business—decide now to get this training that you must have for a real success.

FREE Book

Simply mail the coupon below for an intensely interesting Free Book, "How to Read Blue Prints," and full information. See what amazing opportunities open up for you in the seven billion dollar building field. Don't delay. Act now. Simply mail the coupon below.



Chicago Technical School for Builders, Dept. R-121, 118 E. 28th Street, Chicago, Ill.

Send me without obligation, your free book, "How to Read Blue Prints," and full details of the course and the opportunities in the Building field. It is understood that no salesman will call on me.

Name
Address
City State

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to the readers of American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Lloyd Floor and Wall Tile Co., P. O. Box 5064, Kansas City, Mo., offers a complete catalog of the ceramic tile which it manufactures, the products being illustrated throughout in colors, and including bath room fixtures.

The Home Modernizing Bureau of the National Building Industries, Inc., 228 N. La Salle St., Chicago, has published a "Manual for Organizing and Operating Local Home Modernizing Bureaus." Price 10 cents.

"Winter Construction Methods," by Charles S. Hill, Associate Editor, Engineering News Record, published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City, has as a sub-title "The Processes and Plant Employed in Prosecuting Construction Activities in Cold Weather," and is described as being a summary of the principles and practices which have been successful in winter construction. Price \$3.

"Patent Law and Practice," by Oscar Geier, of Richards & Geier, Patent and Trade Mark attorneys, 274 Madison Ave., New York City, who have published the fourth edition of this book, is designed to give up-to-the-minute information to lawyers, manufacturers, merchants and those generally interested in the subject of inventions and trade marks.

The E. L. Bruce Co., Memphis, Tenn., offers two new booklets under the titles, "A Flooring Achievement—the Bruce Cellized Oak Floor Block" and "Colonial Distinction in Plank Oak Floors by Bruce."

Harvey Hubbell, Inc., Bridgeport, Conn., offers a new

booklet describing and illustrating in color its Acorn screwless plate line for switches and outlets.

"Lupton Windows for Standard Openings Reduce Building Costs," is the title of a new booklet published by the David Lupton's Sons Company, 2203 E. Allegheny Ave., Philadelphia, Pa. It is the second edition of this company's Catalog No. P-50 and is most complete and informative.

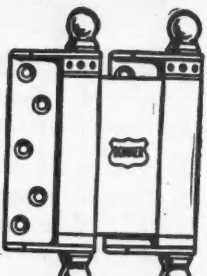
"The Cost of Comfort" is the title of a recent publication from the National Lumber Manufacturers' Association, Washington, D. C. This booklet is described as "A Handbook on the Economics of Dwelling Insulation" and contains very complete information on the relative insulation effect of all the common types of insulating and building materials and their actual cost in comparison with the cost of fuel saved by their use.

The American Telephone and Telegraph Company, 195 Broadway, New York City, has published two very handsome books which are of special interest to the building industry, under the titles "Planning for Home Telephone Conveniences" and "Planning for Telephones in Buildings." These books offer a valuable service to architects, builders and owners in presenting practical information relative to the planning of telephone wires and apparatus in advance of construction so that it may be most advantageously installed.

The Concrete "Form-Hold" Corporation, Culver Bldg., Culver City, Cal., has prepared and is distributing free of charge, to contractors throughout the country, a time sheet on the back of which is a cost segregation division, which will be of practical aid to contractors in accurately determining their costs.

David Lupton's Sons Company, 2203 E. Allegheny Ave., Philadelphia, Pa., has recently published a small booklet, "The Windows of Your Home," which answers 34 of the most common questions about windows.

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Spring Hinges
are the best are the best



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Follow the line of least resistance

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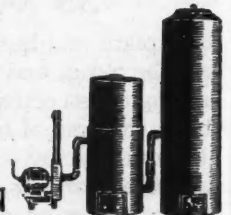


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NO other floor sander offers you these same opportunities, because no other sander can do for you what this wonderful New One Man Floor Sander can, and there are definite reasons why—

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It is a **ONE MAN MACHINE** for any size job.

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It has **NO CHAINS**, **NO SPROCKETS**, **NO BELTS**, and **PICKS UP EVERY SPECK OF DUST**.

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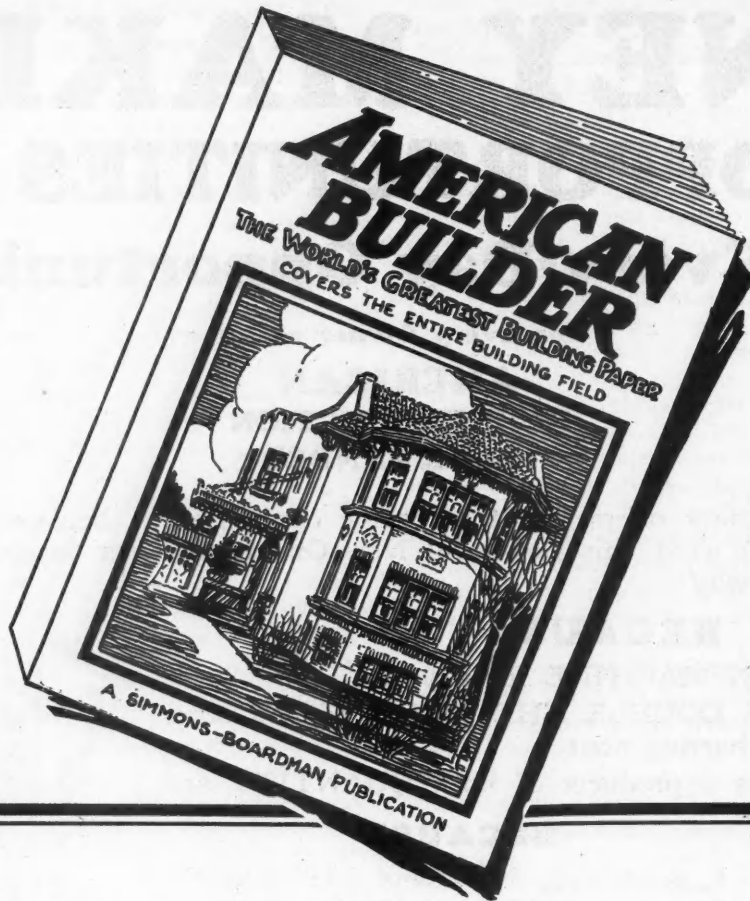
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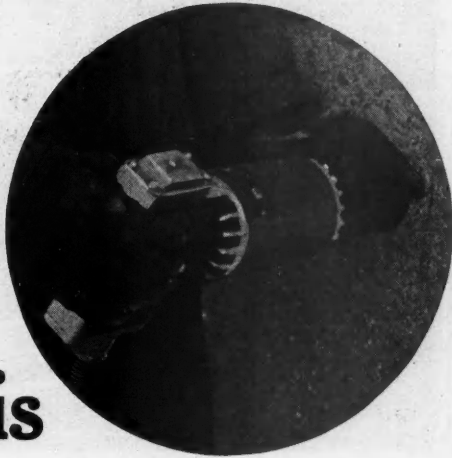
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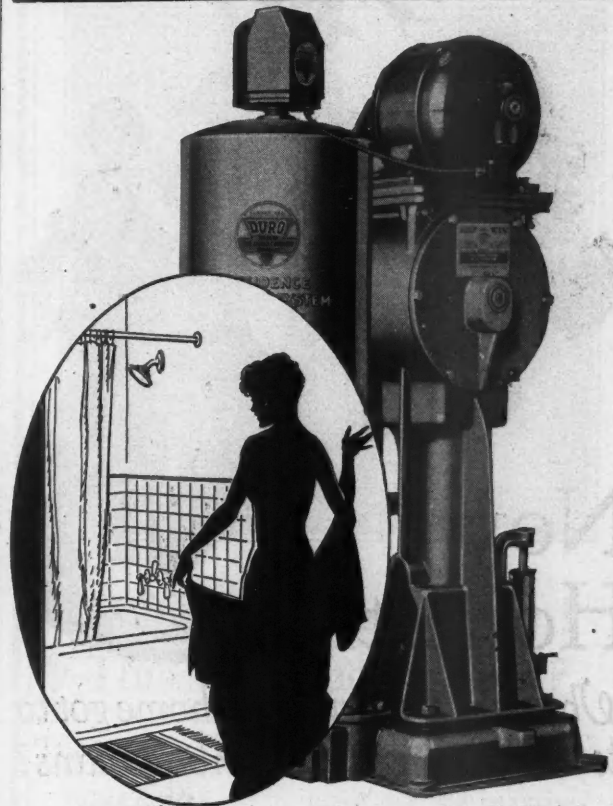
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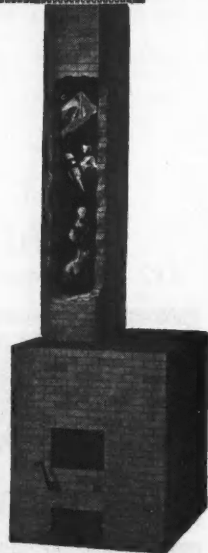
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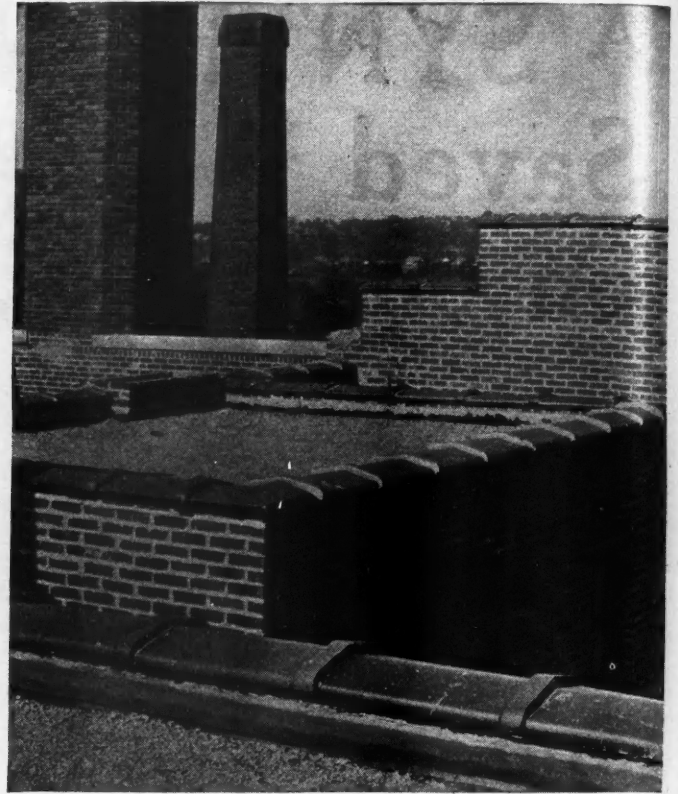
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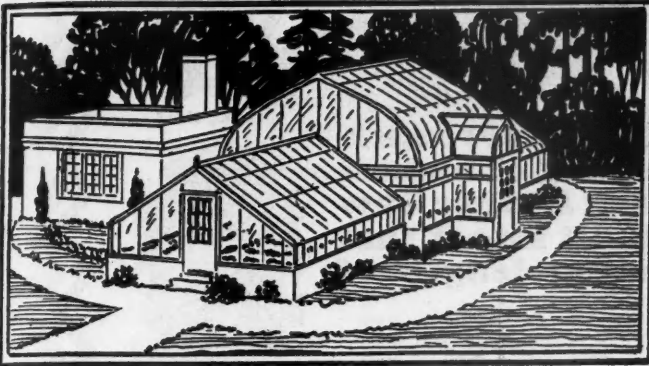
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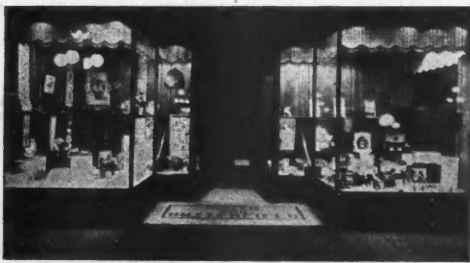


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In the planning of store fronts, the International Engineering Department will be glad to help. Just send us your rough ideas and dimensions. We'll submit plans and estimates, at no cost to you. Write for our big Store Front Catalog.

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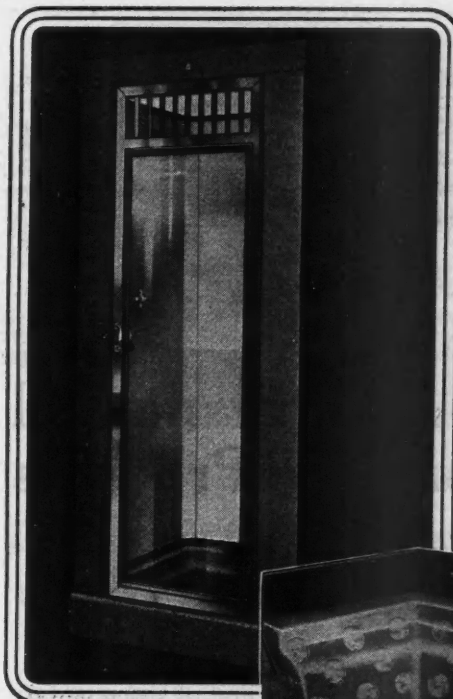
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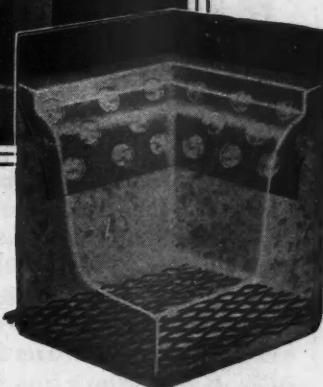
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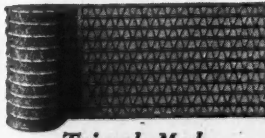
American Steel & Wire Company's
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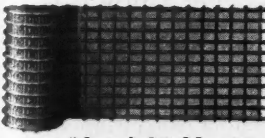
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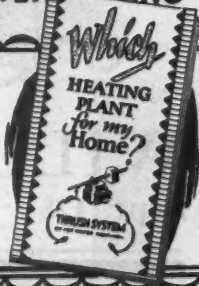
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 you'll know how
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 to help builders
 and contractors.

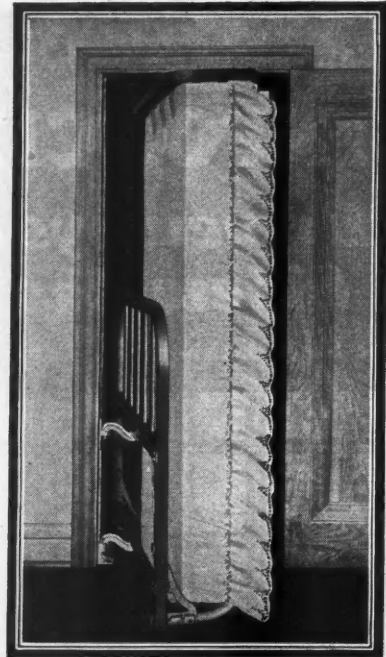
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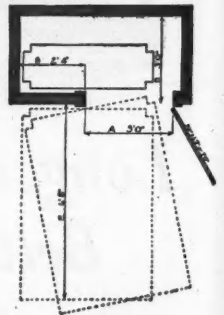
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GALESBURG, ILLINOIS



**Perfect
 CONCEALMENT**

*Above is clearly
 illustrated the Holmes
 PIV-A-DOR principle of
 operation. To the right you
 can see the solid construction of
 the PIV-A-DOR one piece head
 end. This feature is important in
 this type of concealed bed.*



Behind Any

THREE [3] FOOT DOOR.

APARTMENTS and homes designed and built around the Holmes Concealed Bed idea are conceded by Architects, Builders and Owners as the highest development of the concealed bed principle. And NOW since the advent of the new Holmes PIV-A-DOR—there is no concealed bed problem that cannot be met from the Holmes line. The Holmes PIV-A-DOR Bed is a sanitary, all metal bed which is pivoted to the jamb and threshold of any closet door. The PIV-A-DOR principle allows a full sized 4' 6" bed to swing freely and easily through a THREE FOOT (3 ft.) DOOR at the slightest touch. But unlike other pivot type concealed beds the new PIV-A-DOR when actually lowered into position for use, occupies 486 square inches less floor space. It also has the added feature of a non-collapsible head piece. This feature makes it absolutely impossible for anyone sleeping in the bed to receive bodily injury through the spring back of the folding type of head piece common to other types of pivot swinging beds. The new Holmes PIV-A-DOR Bed in addition to its mechanical superiority—has no equal in beauty, sleeping comfort and ease of operation. Its very simplicity makes it the real trouble-proof Concealed Bed of today. No matter what your concealed bed problem is—See The New HOLMES PIV-A-DOR BED TO-DAY. Let Holmes experts help you—No OBLIGATION for such service.

CONCEALED BED CORPORATION

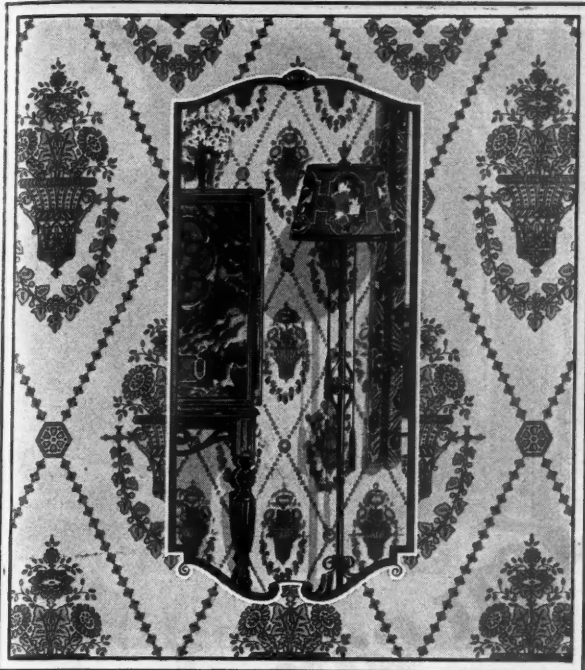
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in structure but in design*

DECORATORS in increasing numbers are turning to Wall-Tex. And logically—for here are the finest designs ever developed in cleanable fabric wall-covering. They are appropriate to every room in the house.

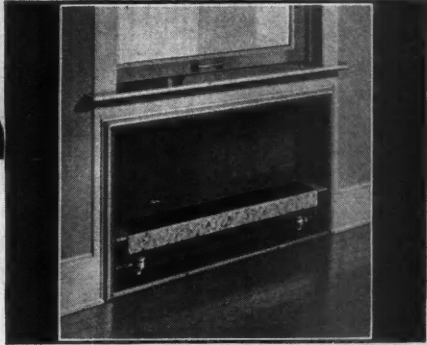
1929 adds many pleasing creations to the imposing Wall-Tex array. One is illustrated. Through its use living-rooms in various settings can be made most charming. Others there are, strikingly modern in design and color, for dining-rooms, living-rooms, bedrooms and nurseries. Well-known artists are contributing to Wall-Tex popularity. And besides unlimited beauty, decorators and owners are offered in Wall-Tex this further satisfaction: Thoughtfully studied and applied effects will never be marred through the premature deterioration or breakdown of this wall-covering.

For Wall-Tex has the strength to make its beauty lasting. Choicest materials and pigments are used. Fabric is flexible, yet remarkably strong. Keeps cracks from showing in old plaster; keeps new plaster from cracking. It is quickly cleaned with a damp cloth. Certainly you should see the complete Wall-Tex line, including the plain white numbers now extensively used for foundation work.

Decorators, builders, architects should write for full information on their particular needs. Dealers: Write for 1929 sample book. The Columbus-Union Oil Cloth Co., Columbus, Ohio.

WALL-TEX
PERMANENT
WALL-COVERING

Accessible



*The Under-Window Concealed Heater
is built for easy inspection*

IF you have admired the appearance of Trane-equipped rooms—but have hesitated to wall up any heating unit for the life of your building—investigate the Trane Under-Window Concealed Heater.

At the turn of a few screws, the front panel comes off. The entire heating unit, with its fittings and connections, is no more difficult of access than an ordinary exposed radiator—months or years after the original installation.

This model fits between walls of standard thickness. Everything is furnished. There are no extras to buy. No trade disputes. A one-man job of installation. And all the advantages of Standard Concealed Heaters are fully retained. Here is something worth looking into.

Write for booklet. We also manufacture the Trane System of Vapor Heating.

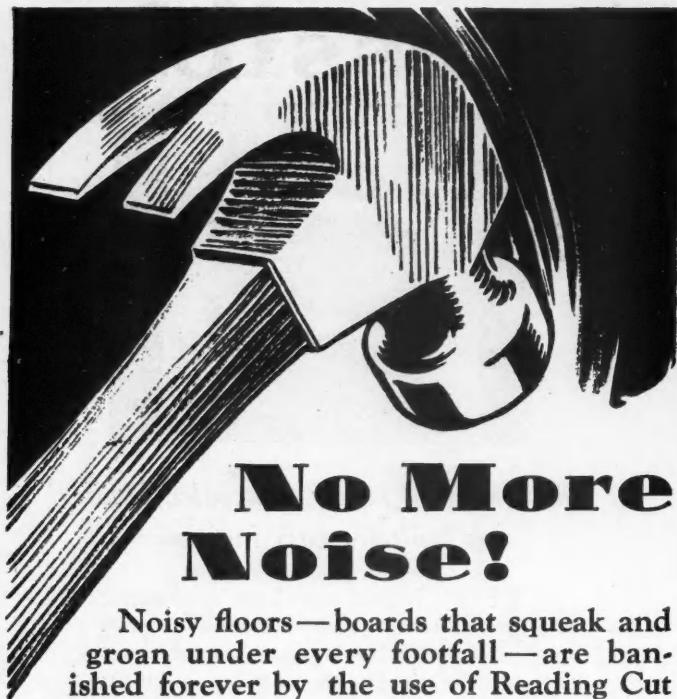
THE TRANE CO. (Est. 1885)
276 Cameron Ave., Dept. 12, La Crosse, Wis.

HEAT TRANE CONCEALED
CABINETS HEATERS
PUMPS, UNIT HEATERS, AND HEATING SPECIALTIES



THE TRANE CO., Dept. 12,
276 Cameron Ave., La Crosse, Wis.
Send free booklet on your Under-
Window Concealed Heater.

Name.....
Address.....
Type of Building.....



No More Noise!

Noisy floors—boards that squeak and groan under every footfall—are banished forever by the use of Reading Cut Floor Nails.

For these nails go right through hard wood, sink in and *stay there*. Because of their rectangular shape, the wood fibers grip against their surface, holding them from tip to head. No bent nails—no springing—no noise!

Remember that Reading Cut Nails have 72% more holding power than wire nails—and cost only a little more. The satisfaction you get from using or selling them is worth many times their cost.

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READING CUT NAILS



You can always pick out a

K & E FIELD BOOK

No matter how much punishment it has received—blistering tropical heat, cold rain, rough handling—your records are always safe in it.

Small wonder, when one considers these cardinal points in its construction—

- 1** 100% Rag Stock
(Does not grow brittle with age).
- 2** Waterproof
(Sheets do not blot after being soaked).
- 3** Wire-stitched
(No pulling apart, no dilapidated appearance, no valuable pages lost.)

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Sell Homes Easier Rent Them Faster

CARDINAL TOGGERY RACKS give the space of two closets in one. They keep toggery smooth, hats in shape, shoes off floor—all in plain sight, within easy, instant reach. Cardinals lighten women's work. There are thousands in use everywhere. Housewives like Cardinals—because they add a finishing touch to homes and make them really modern.

Cardinals are important selling and renting features. Their cost is small, their benefits great. Beautiful Duco finish. Jade Green, Old Rose and Silver Color Cadmium. All metal. Strong. Easily attached on the inside of any closet door.

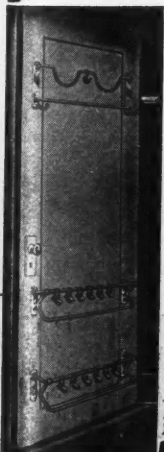
CARDINAL Toggery Racks

are a necessity in the small apartment, an added convenience in large ones—and in all houses, city and country, they not only save closet-room—but make it. You can see for yourself the appeal in them to every family, large or small.

Write today for prices and quantity discounts. For a very small outlay, you can add a big profit factor. Cardinals have a mighty persuasive force—the instant you swing open the closet door. They are certainly a big talking point.

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Building Specialties



Yes, It is an Attractive Fireplace

But will its performance when a fire is burning in it be as satisfactory as its outside appearance? Will there be sudden puffs of smoke into the room, causing discomfort and dirt, or will the fire burn evenly and brightly and be a pleasure as a real fireplace should be? You can be assured of fireplace satisfaction if a Peerless Dome Damper forms the throat construction. It is a scientifically designed dome and door which forms a perfect throat and the easily regulated door allows perfect control of the draft at all times. And this is important, too—when the fireplace is not in use the door can be entirely closed, keeping out rain, soot, insects and dirt. It is also used as a means of regulating the temperature of the room. It is a real fireplace necessity.



Peerless Mfg., Co.
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LOUISVILLE, KY.

12-28

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Kindly Check:

Please send Fireplace Damper information.

Name.....
Address.....
Town..... State.....

SAMSON SPOT SASH CORD

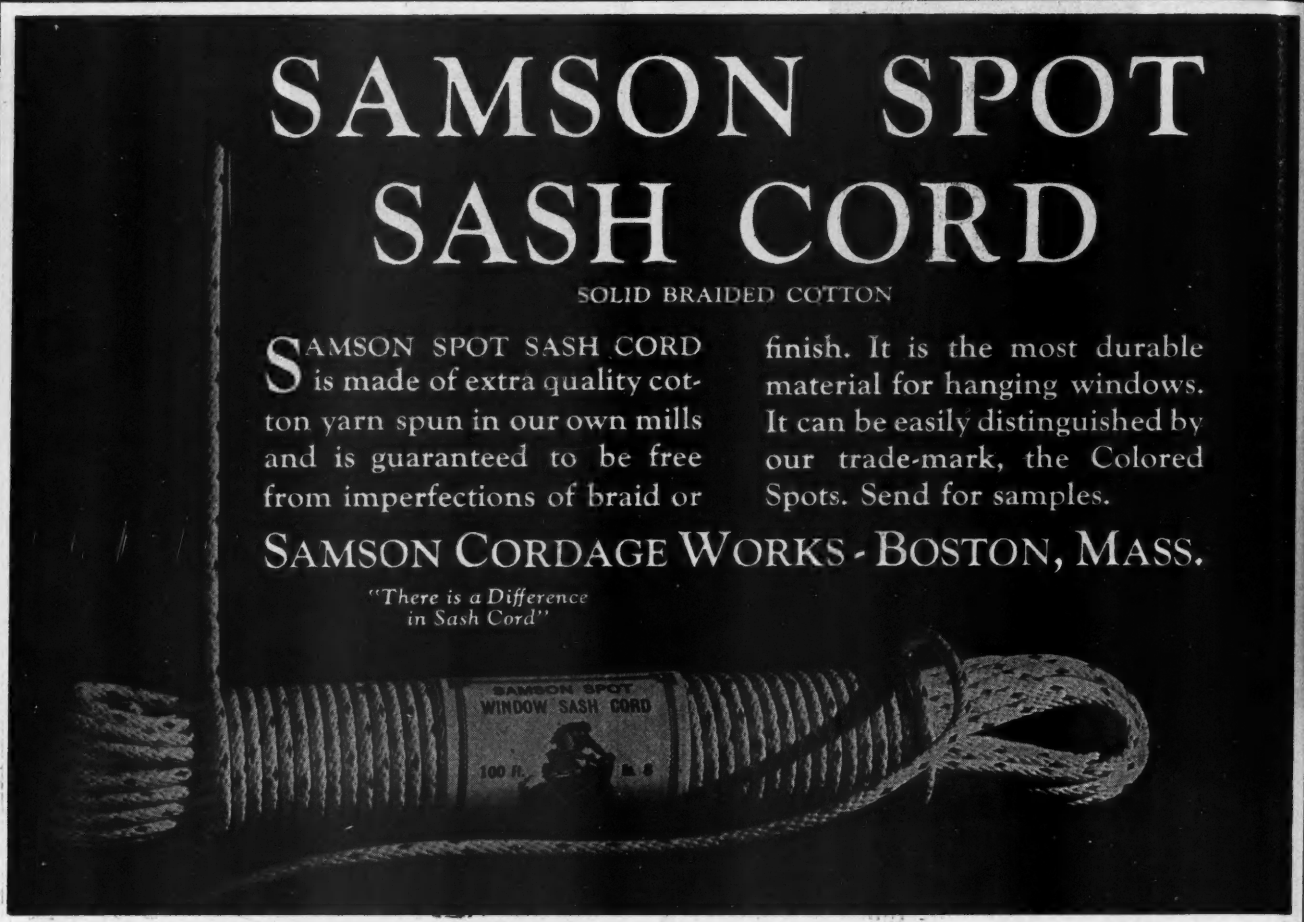
SOLID BRAIDED COTTON

SAMSON SPOT SASH CORD is made of extra quality cotton yarn spun in our own mills and is guaranteed to be free from imperfections of braid or

finish. It is the most durable material for hanging windows. It can be easily distinguished by our trade-mark, the Colored Spots. Send for samples.

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"There is a Difference in Sash Cord"



Mettowee Colored Stone Walks



Embellish your homes, giving them greater selling power and greater values at only a trifling higher cost.

What difference from the cold plainness of ordinary walks.

Prompt deliveries can be made by your nearest dealer, or, if he does not have sufficient stock we will gladly put you in touch with one who does.

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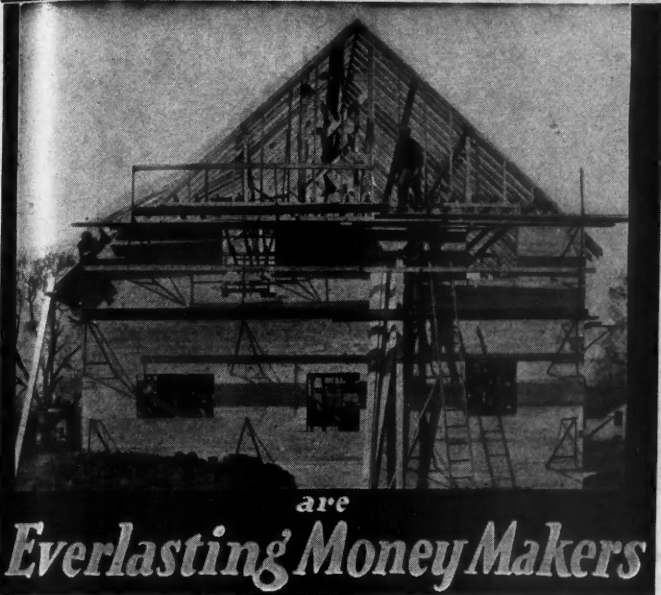


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Trouble Savers



are Everlasting Money Makers

Why "Repeat" Scaffolding Costs on Every Job?

You can get **Trouble Saver Steel Scaffolding** for the same money it takes to wood scaffold a single job. And its first cost is its *only* cost. Lasts a lifetime with no repair or replacement expense.



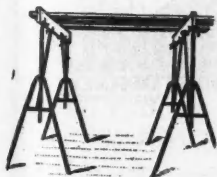
Trouble Saver Studding Brackets support a ton. Will not bend.

Minutes vs. Hours

Ten minutes spent in erecting **Trouble Saver Steel Scaffolding** takes the place of half a day's work in erecting wooden scaffolding. Dismantling is just as fast. Investigate!



Trouble Saver Nail Attached Brackets support a ton. Held by four nails.

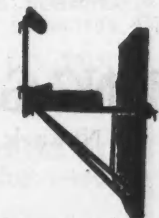


Trouble Saver Adjustable Steel Trestles (patented) are quickly adjusted to desired heights. 8 sizes. Each size adjustable from 5 to 15 different heights, giving a range from 16 inches to 12 feet by 3 inch lifts. Save countless sets of wooden horses.

Trouble Saver Steel Products

Studding Brackets
Nail Attached Brackets
Bolt Brackets with
Safety Railing
Adjustable Trestles

Ladder Jacks
Wood Shinglers
Mortar Board Stands
Sectional Steel
Scaffolding



Trouble Saver Bolt Brackets. Held by $\frac{3}{8}$ " bolts.

The Steel Scaffolding Company

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MONEY BACK TRIAL OFFER

Please send me details on your 30-day free trial offer and full information and prices on **Trouble Saver**.....

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

Keep Your Saws In Condition --Do Saw-Filing for Others, too



"I ordered an F-3 **Foley Filer**, which I intended to use for my own saws, being a carpenter, and also to do some filing on the side when not busy at my trade, but soon found that I would have to quit one or the other, so started filing. I have now built up a nice business that is better than carpentering. In September I ordered a **Foley F-5 Power-Drive** machine. It does nice, clean work, and a perfect job."

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Offers you the same opportunity to get into a FINE PAYING CASH BUSINESS of your own, where you are not affected by dull times, strikes and off seasons. Our **FREE PLAN** will help you get started during your spare time this winter, and you can soon work up a fine full time business. C. W. Clough writes—"My saw filing business has increased from 6 saws per week to over 100, and is still growing." Lots of other carpenters have done this, too.

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Hand-filing can't compare with the work of the **Foley**. It AUTOMATICALLY files and evens the teeth in **one operation**, and with such mechanical accuracy that they cut faster, cleaner and truer. Nelson Savage says—"Now my saws cut better in every way than when filed by hand, though I was considered a good saw filer."

Easy and simple to operate. NO CANVASSING to get business. Other carpenters, schools, saw mills, factories, woodworking plants and many other businesses will give you all the work you can handle. Files all kinds of hand saws, band saws $\frac{1}{8}$ " to $4\frac{1}{2}$ " wide, and cross-cut circular saws 3" to 24" diameter. Uses standard taper files.

You can make BIG MONEY with the **Foley**—mail the coupon for complete information and **FREE PLAN** at once.

FOLEY SAW TOOL CO., INC.

136 Foley Bldg., 11 Main St., N. E. Minneapolis, Minn.

Please send me **FREE PLAN** showing me how I can start my own business and make BIG MONEY with the **Foley**.

Name

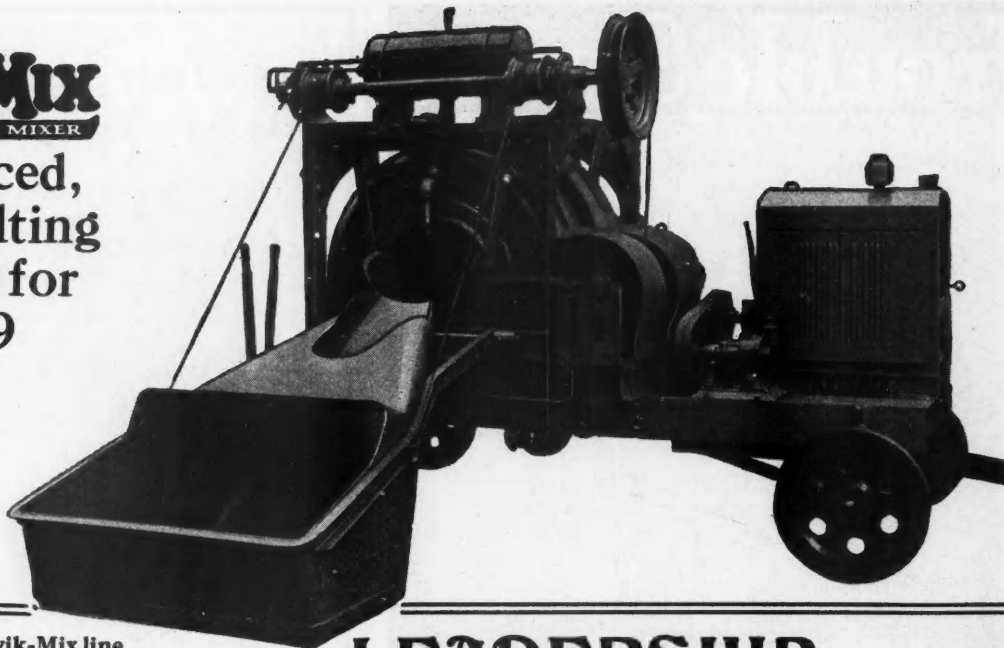
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City..... State.....

A.B. 13-28

Kwik-Mix CONCRETE MIXER

Advanced, Non-Tilting Models for 1929



See the complete Kwik-Mix line on exhibition at the Good Roads Show in Cleveland, Ohio, January 14th to 18th.

DISTRIBUTORS—We have good open territory on our complete line of tilting and non-tilting mixers. If interested in a live line of tilting and non-tilting concrete, mortar and plaster mixers, write at once for low prices and liberal discounts.

LEADERSHIP

The greatest Kwik-Mix line ever put on the market is now being enthusiastically received by the concrete industry. These models incorporate many new time and labor-saving features with better mixing principles, high grade roller bearing drive with heavy duty, hot-riveted and electric welded steel drum and frame construction. Write at once for complete description of all the latest improvements found in the new Kwik-Mix Non-Tilting line.

KWIK-MIX CONCRETE MIXER COMPANY
PORT WASHINGTON, WISCONSIN Dept. 100

“ANTI-HYDRO” Prevented Mortar From Freezing

This building was started late in the fall. Cold weather set in before it had proceeded very far.

“ANTI-HYDRO” was used for dampproofing and waterproofing cement mortar in walls above grade. In addition to producing an absolutely dry job, “ANTI-HYDRO” also prevented the mixing water and the mortar itself from freezing. As a result there were no interruptions to work due to extremely cold weather.

It is far more economical and safe to use “ANTI-HYDRO” for waterproofing buildings while you are erecting them than to try to dampproof them after they are completed. “ANTI-HYDRO” is extremely easy to use. It mixes easily with the water used in wetting down cement mortar and concrete.

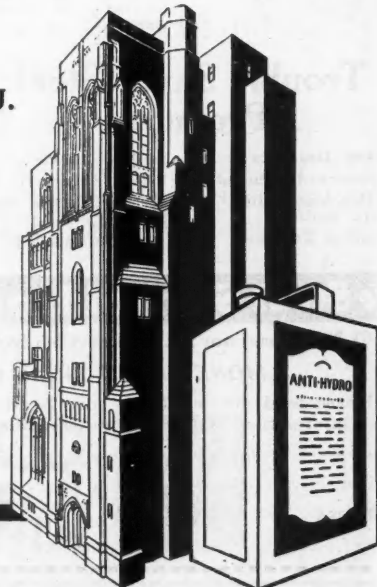
For 24 years “ANTI-HYDRO” has proved its value as a permanent concrete hardening and waterproofing agent. Use it on your next job for guaranteed results.



ANTI-HYDRO WATERPROOFING CO.

265- 295 Badger Ave.

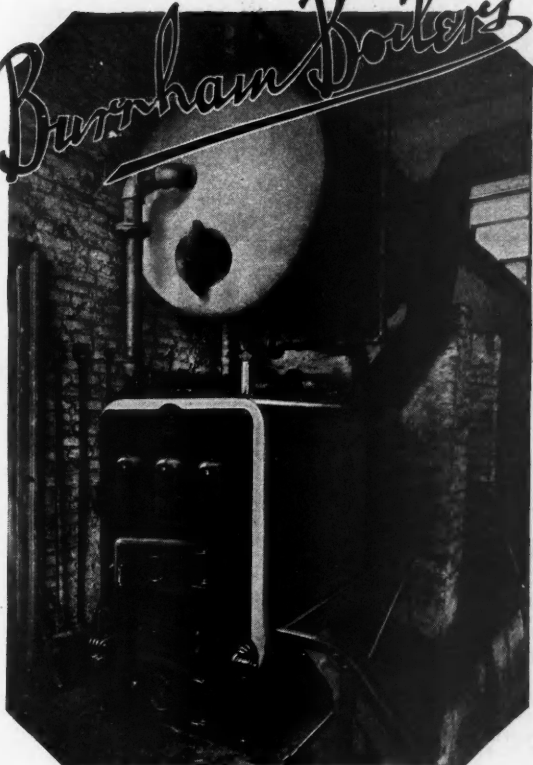
Newark, N. J.



PARISH HOUSE OF FIFTH AVE. PRESBYTERIAN CHURCH
JAMES GAMBLE ROGERS ARCHT. ...JOHN DOWNEY Inc., BUILDERS

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Burnham Boilers



This is a high pressure hot water supply Burnham. Made also for low pressure.

Why we can't tell the truth about the savings of this Burnham Boiler

WE can't tell the truth, because you would say it was an untruth. But you can see for yourself that's a 1500 gallon water supply tank.

You can see that the boiler's fire box door is open. You know it's open to hold back the fire.

The photo, furthermore, was taken at the peak time when water is being used the most.

You can draw your own conclusions as to whether or not the Burnham delivers satisfactorily to this 70 family installation at 417 East 89th St., New York City.

Burnham Boiler Corporation

Irvington, New York

Representatives in all principal cities of the United States and Canada

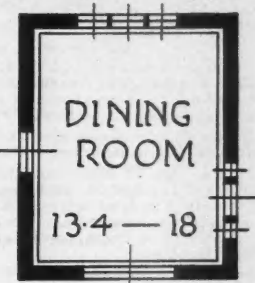
A WOMAN may look ever-so-carefully into this room and that. But, after all, it's her impression of the kitchen that makes or loses the sale. And next in importance comes the bathroom.



Use SANI



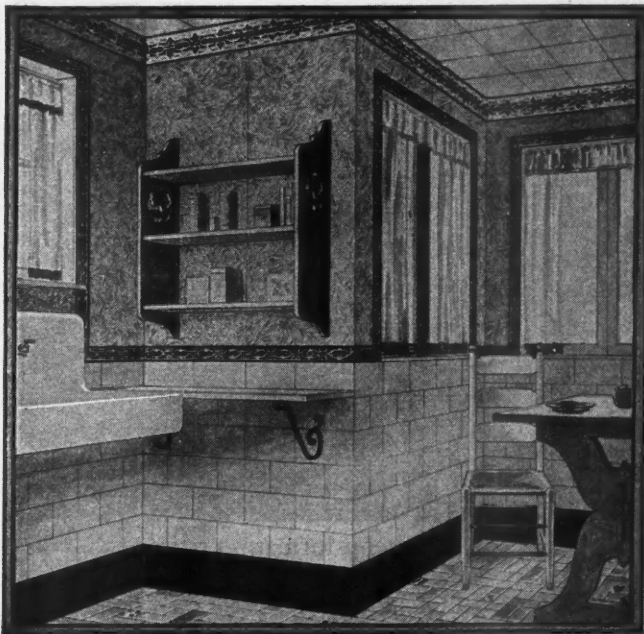
ONYX, the modern wall material in both of these rooms. Fused from rock ingredients, it doesn't crack, chip, check or discolor. No repairs or redecoration. It means a certain sale!



You ought to have this book; it tells all about SANI ONYX, and shows actual installations in full color. Write for your free copy.

We have some choice territory available for Construction Houses or representatives. Write us.

—but THIS is the ROOM that Sells Her—



SANI ONYX
A VITREOUS MARBLE

MARIETTA MANUFACTURING COMPANY
80 Brookside, Indianapolis, Indiana



Compact Rugged Speedy

**20'
Band
Saw** **Every Contractor
Needs It**

You can save time and money with Gallmeyer and Livingston Union Woodworking machines. The work you are now turning out on bulkier, more expensive machines can be done with greater speed, and more economically with Unions.

Union Woodworking Machines are compact, and easily moved from one job to another. They will attach to any light socket.

In this day of keen competition, every contractor needs Gallmeyer and Livingston machines. They cut costs in many ways. They help you land more jobs. They cost less to buy and to operate. Insurance is less. There is less depreciation. You should know about the many advantages of Gallmeyer and Livingston Union Machines.

Send today for catalog and complete information. *Free.*

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206 Straight Ave. Grand Rapids, Mich.

NAPANEE DUTCH KITCHENET

Built Like Fine Furniture

THOSE WHO ADD
"Napanee Equipped" to
their "For Sale" or "For
Rent" signs find that their
houses sell more quickly—
their apartments rent more
steadily.

For catalogs, specification
sheets, architectural service
and further information, write

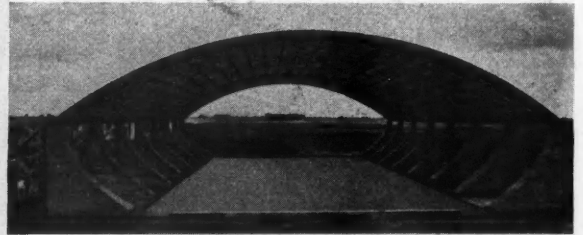
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cupboards, wall cupboards, etc.

Gymnasium at Corsicana, Texas,
80' x 100', under construction.



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(PATENTED)

Trussless ARCH ROOFS

**Quickly and Economically Erected
Thoroughly Safe—Very Attractive**

Good distribution of light, excellent acoustical conditions.

Adopted for auditoriums, dance halls, garages, warehouses, factories, etc., in all parts of the country. Spans up to 150'.

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DANDIE

KOEHRING

10-S



VALUE! High speed operation, liberal power, strong, enduring, dependable construction—and still within the price range for easily-portable mixers! Know about its fast clean charging, thorough mixing, fast discharge and ease of operation. *Send for catalog D-1.*

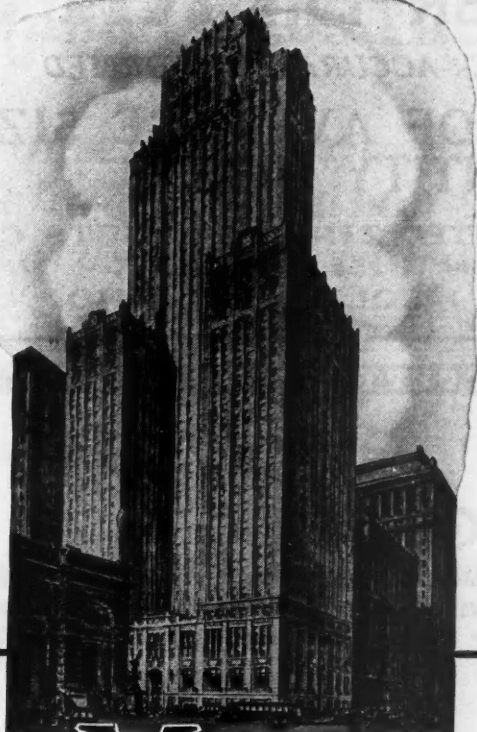
Dandie—5-S, 7-S, 10-S—5-S single cylinder; 7-S and 10-S two or four cylinder radiator cooled Ricardo head gasoline engine. Rubber tires with steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

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Solvay Calcium Chloride was used in constructing the Bankers Building. Architect, D. H. Burnham. Contractors, Dick Construction Co.

MANY great new achievements in concrete construction work have been made possible by the use of Solvay Calcium Chloride.

Solvay Calcium Chloride makes concrete construction in freezing weather a practical and profitable undertaking and has proved itself essential for making the best and strongest concrete.

Solvay Calcium Chloride makes concrete more workable, gives it great early strength and accelerates the set. Its use presents the most reliable method by which the concrete used for building construction can be satisfactorily cured.

Practical information on curing structural concrete is contained in the booklet, "Solvay Calcium Chloride in Concrete Construction." Send for booklet 1853.

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*Alkalies and Chemical Products Manufactured by
The Solvay Process Company*

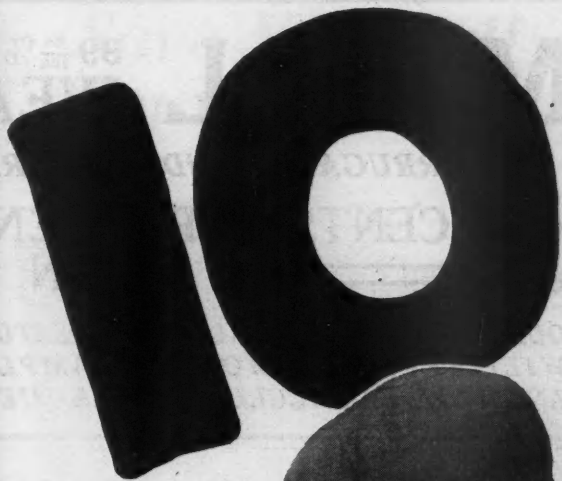
40 RECTOR STREET, NEW YORK

SOLVAY CALCIUM CHLORIDE

Flake 77%—80%

Manufactured under United States Patents No. 1,527,121 and No. 1,592,971

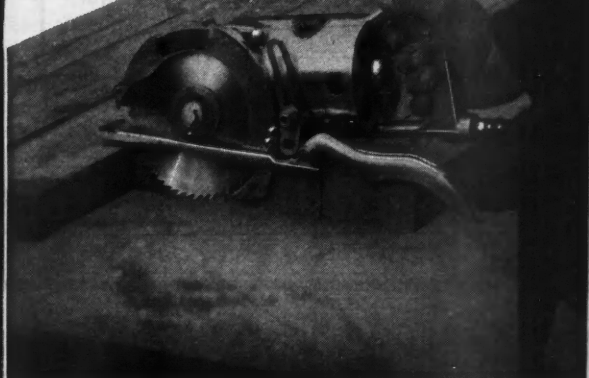
THE IDEAL CONCRETE CURING AGENT



Here is SKILSAW (the original portable electric hand saw) that will save you time and money in sawing because it cuts wood ten times faster than the old fashioned hand saw. A fact—not a theory. This 10 lb., ½ H. P. SKILSAW pictured here, will rip, cut and mitre any wood up to 1-¾" in a matter of seconds.

SKILSAW operates from any electric light socket and will work for you anywhere on the job because it is portable.

There are four models — cutting capacities 0" to 4¼". Let us show you without obligation on your part, what any model SKILSAW can do right on your own work.—Seeing is believing you know. Just sign and mail the coupon.



Show me how SKILSAW will save me time, money and muscle in sawing.

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METAL WEATHER STRIPS

99 ⁸⁵/₁₀₀ % PURE ZINC
CORRUGATED AND PLAIN RIB TYPE—ACCURATELY FORMED

39 CENTS PER OPENING OF AVERAGE SIZE
ON QUANTITY ORDER.

OUR NEW QUICK INSTALLATION FEATURE
WILL SAVE YOU MONEY. SAMPLES
AND FULL PARTICULARS ON REQUEST

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BOYLE'S BAYONNE

ready to lay
Roof and Deck Cloth



The ideal covering for Porch Floors, Decks or Piazzas, Sun Parlors, etc.

Waterproof
Weatherproof
Durable
Flexible

Lays flat
Stays flat

Ready to lay—Requires no white lead bedding; will not buckle, crack or peel.

Write today for our Sample Booklet "P."



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Established 1860

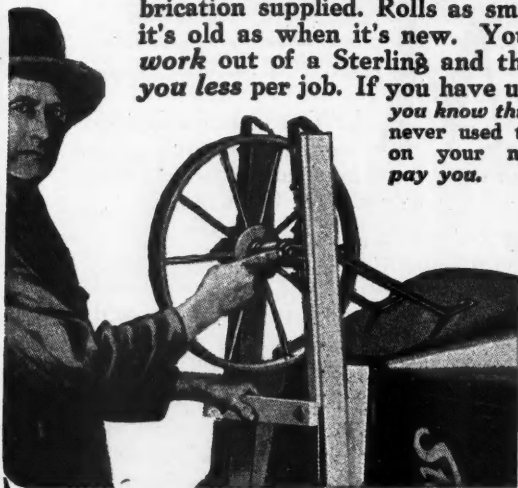
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1317-1319 Pine St., St. Louis, Mo.

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Sterling

—“self-lubricating” axle bearing—
guaranteed for the barrow's life—means
longer service and easier wheeling.

No oil service ever needed—permanent lubrication supplied. Rolls as smoothly when it's old as when it's new. You'll get *more work* out of a Sterling and they will *cost you less* per job. If you have used Sterlings *you know this*—if you have never used them try them on your next job—it'll pay you.



Sold by leading dealers. Complete warehouse stocks at—Chicago, New York, Philadelphia, Pittsburgh, Cleveland, Detroit, St. Louis.

STERLING WHEELBARROW COMPANY

Milwaukee

Wisconsin

LUFKIN TAPES and RULES

The “Universal” is an Accurate Steel Tape at a popular price. Line is 3/8" wide, standard weight. Case is sturdy, and of good appearance.



Send for Catalog

Our Folding Aluminum Rules are furnished with or without hook. All joints and fittings are solid brass, making the rule rust-proof throughout.

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New York - Windsor, Ont.

Sana-bestos Tiles

PATENTED

for

Homes, Apartments,
Schools, Churches,
Stores and Hospitals

are:

**DURABLE
ECONOMICAL
COMFORTABLE
CLEAN ~**



SANA-BESTOS FLOOR TILES cost less than other types of approved flooring. They are easily and quickly laid in plastic cement by the average workman.

This modern indestructible flooring is moderate in first cost with no upkeep expense. It is not affected by acids or alkalis. Ink stains and marks of cigarettes are easily removed by washing with soap and water.

Sana-bestos Floor Tiles will not buckle, crawl, warp, wrinkle, loosen or turn up at the corners. The comfortable, non-slippery, resilient surface is not affected by traffic no matter how severe. The floor never wears rough or gritty.

Sana-bestos Floor Tiles offer a variety of color tones, including Black, Maroon, Red, Brown, Green, that harmonize with any artistic layout. (Sana-bestos Tiles cannot be manufactured in light colors.)

Sample tile and descriptive literature sent upon request

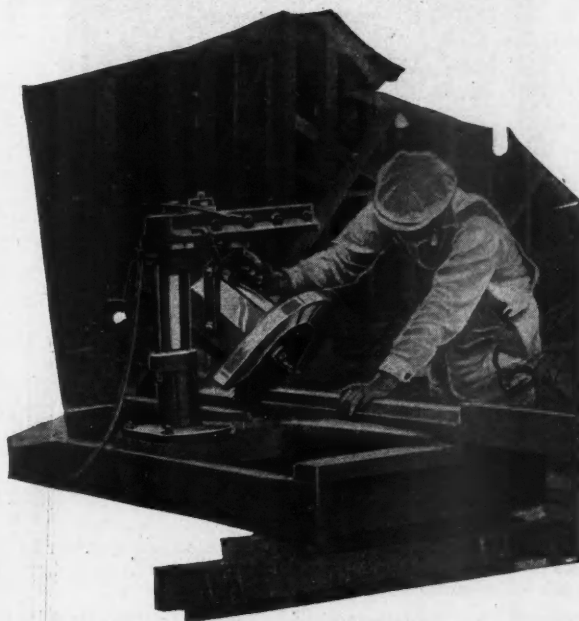
FRANKLYN R. MULLER, Inc.

Manufacturers of Asbestone and Sana-bestos Tiles

212 Madison St. Waukegan, Illinois

Established 1906

Save Yourself 1 Hour in Every 3



De Walt complete with table, motor, switch and saw—
Motor from 1 to 5 hp.

ON the average job $\frac{1}{3}$ of every day is spent on profitless, back-breaking hand sawing.

With a DeWalt, however, you can use your skilled carpenters a full day on profitable work. They like it better and so will you.

Over 4,000 DeWalt users know *how* to get, and *are* getting, that *extra profit*. Let us show you what we mean by *extra profit* right on your own job.

DE WALT Wonder Worker

The Economy Wood Worker

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677 New Holland Ave., Leola, Pa.

I'd like you to demonstrate how the DeWalt will make money on our job.

Your name

Firm name

Address

Type of Business



THIS BIG-FIGURE CALENDAR, containing thirteen sheets 20 by 28 inches will be sent with our compliments if you ask for it promptly.

Thirteenth sheet shows complete calendars for 1928, 1929, 1930.

ALPHA PORTLAND CEMENT COMPANY

Baltimore Battle Creek, Mich. Birmingham, Ala.
 Boston Chicago Easton, Pa. Ironton, Ohio
 New York Philadelphia Pittsburgh St Louis

**ALUMINUM
 GENERAL PURPOSE
 (90 lb.)
 FLOOR SANDER**



*Latest Model—
 Just Out!*

**Built for
 GREAT SPEED and
 HIGHEST QUALITY
 of work**

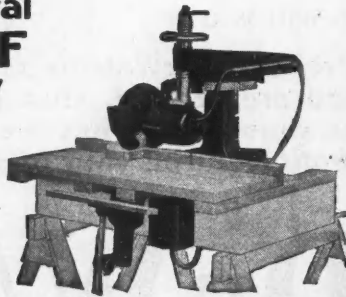
No vibrations—no dust
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 Roller sands even with
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 of machine. 9' long
 roller 1-3/4 HP AC &
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 Universal
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**Will
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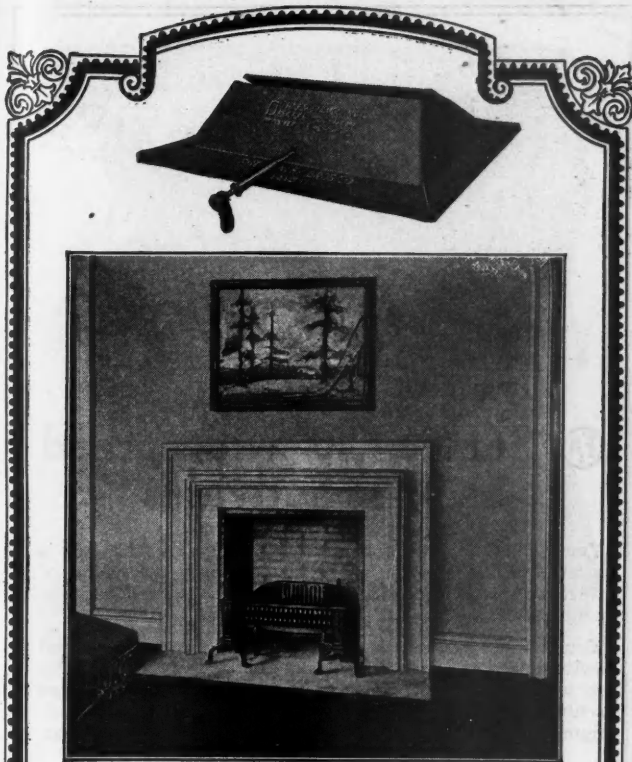
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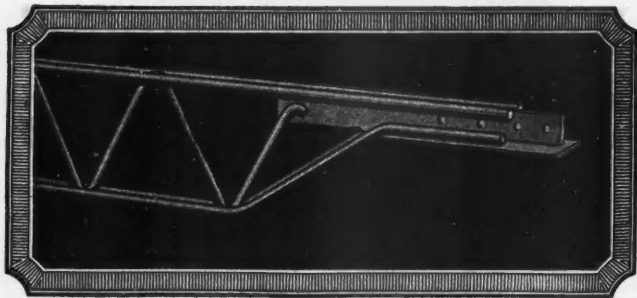
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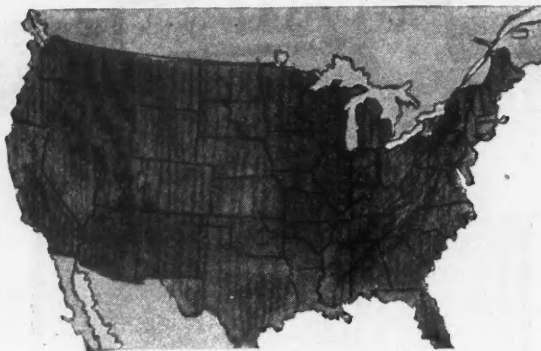
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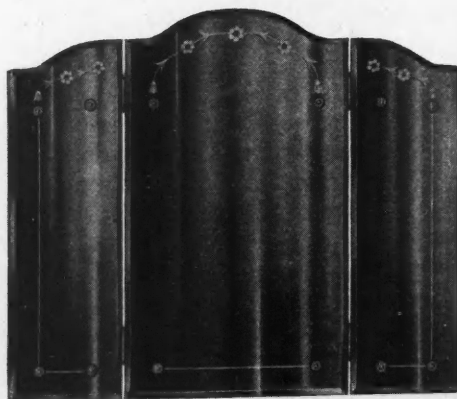
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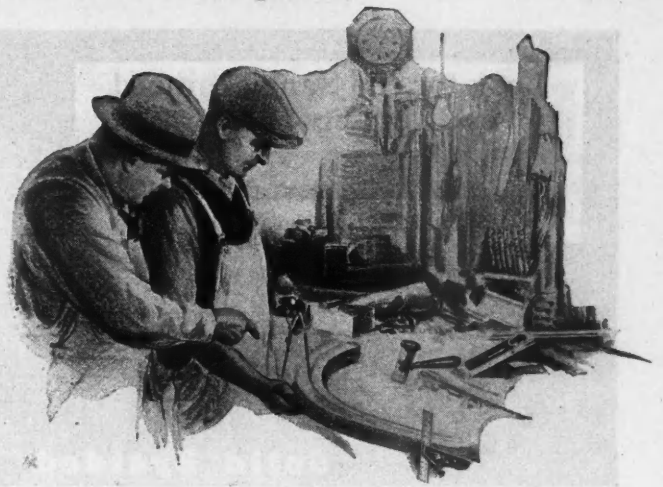
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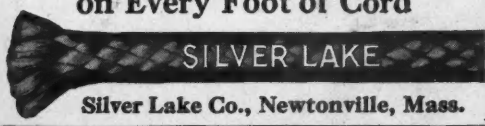
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The Bayley Window for basements in residences, apartments and other buildings. Fine for side walls in garages and small buildings. Cost no more than wood, yet give 50 per cent more light—made in four standard sizes.



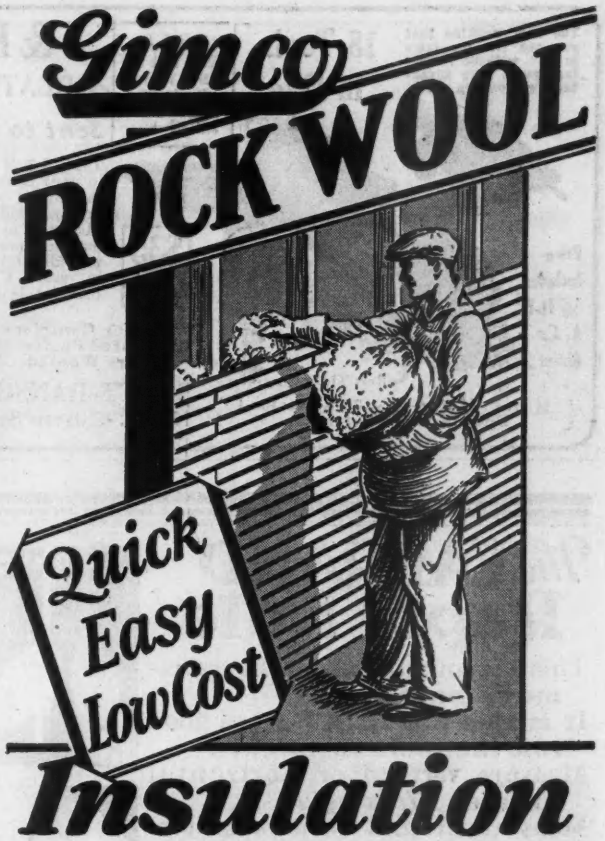
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on a frame
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Grand Rapids Hardware Co.
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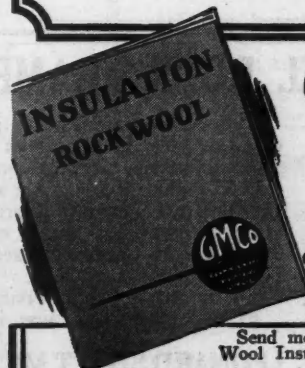
The low cost and ease of application of Gimco Rock Wool gives it preference over any other insulation. It not only insulates against cold and heat, but also against Fire, water, vermin and Sound.

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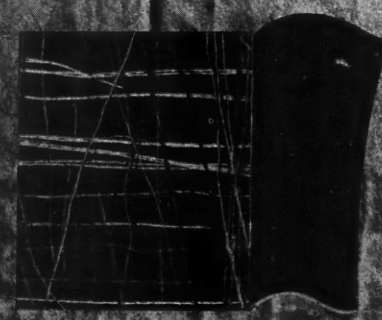


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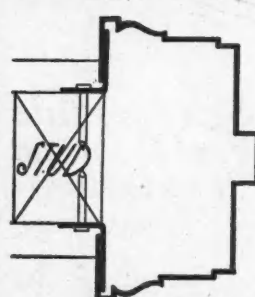
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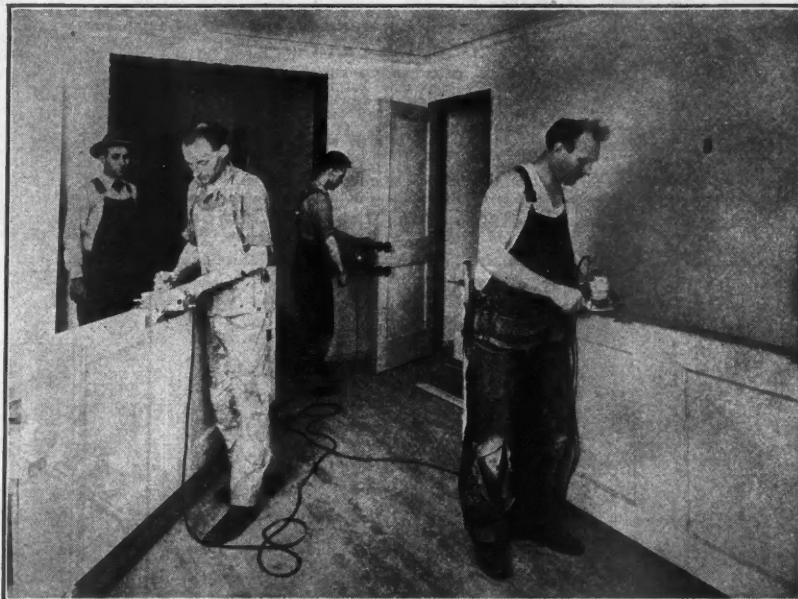
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Because of these features and the moderate price, it is an excellent machine with which to start a paying floor surfacing business and one those established cannot afford to be without. Investigate!

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*Is Made for Those Who Appreciate the Best.
Built Like a Precision Tool*

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Taking a Model "C" to the Lumber

Cuts Up To 2 5/8"

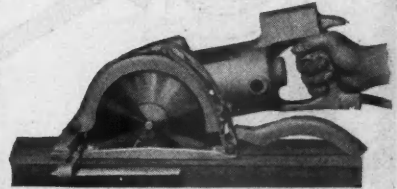
Model K—a one-hand saw with power to rip or cross-cut fast and true. One week's use will pay for it. Connect up to some nearby light socket and end hard work.

4 Models to Pick From

Model B cuts up to 4 1/2" with 11" diameter blade. Has tilting base for bevel cuts up to 60°—our most complete hand saw. Very handy for rafter cuts or any other sawing.

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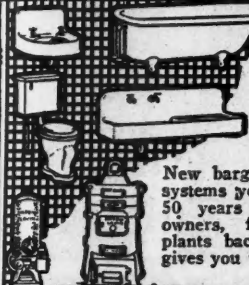
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Weight, 15 lbs. Saws from 9 in. to 2 1/2 in.
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110 volts for both A.C. and D.C.

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FRAZIER Self-Balanced DISAPPEARING STAIRS

Adds Extra Selling Value!

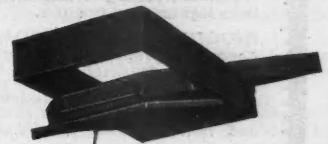
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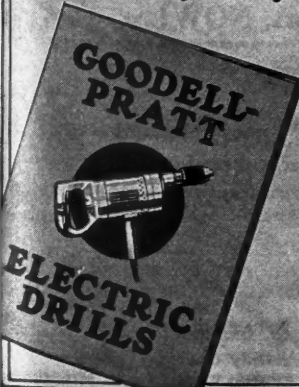
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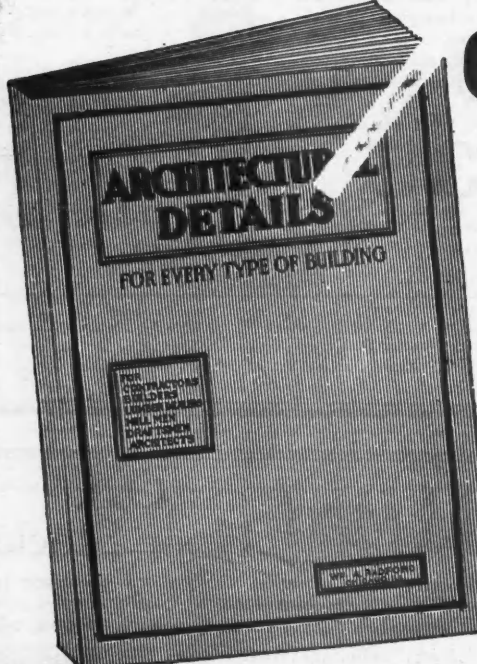
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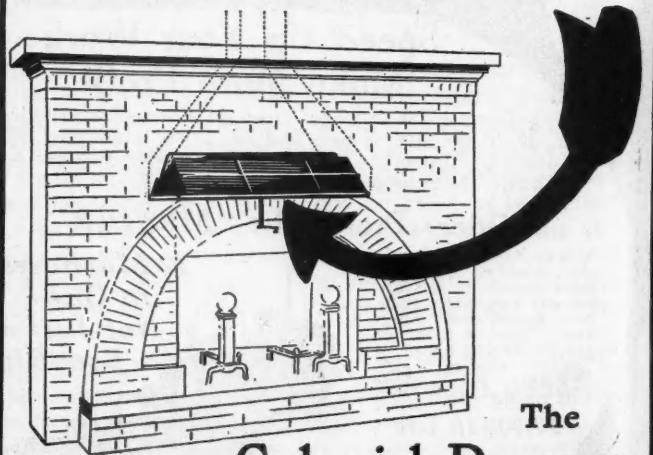
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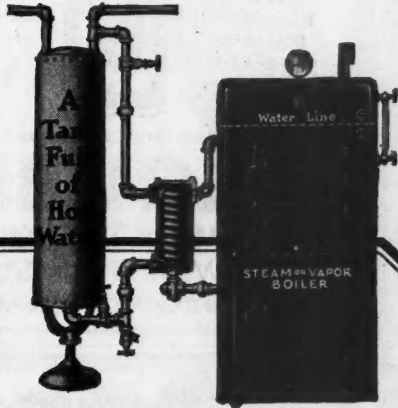
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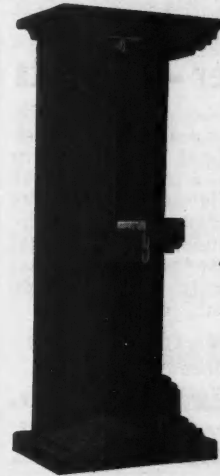
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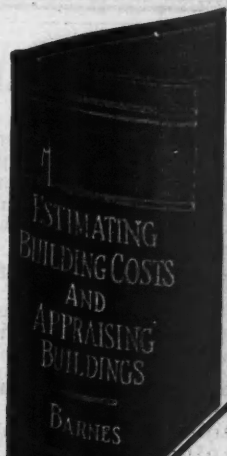
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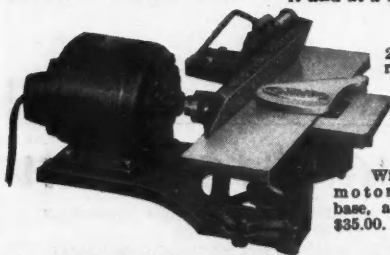
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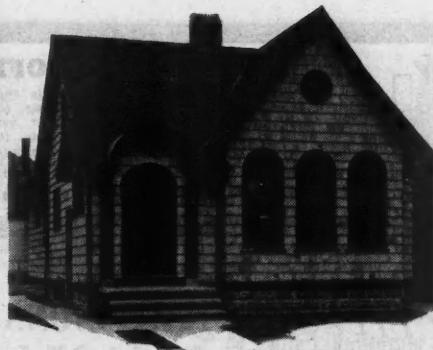
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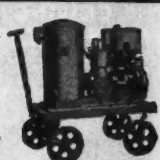
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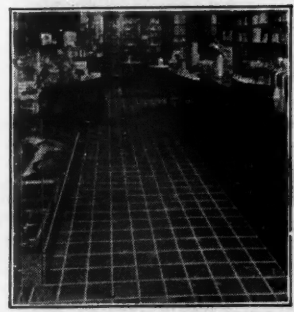
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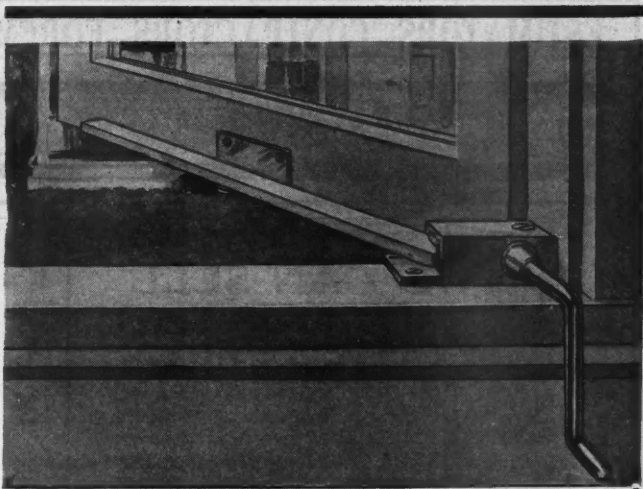
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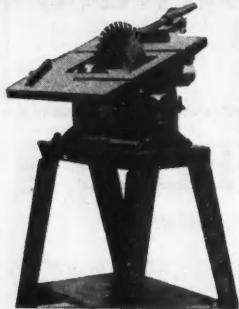
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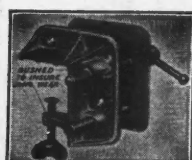
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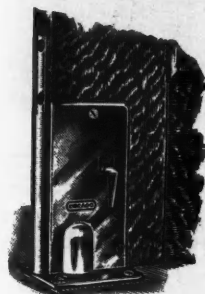
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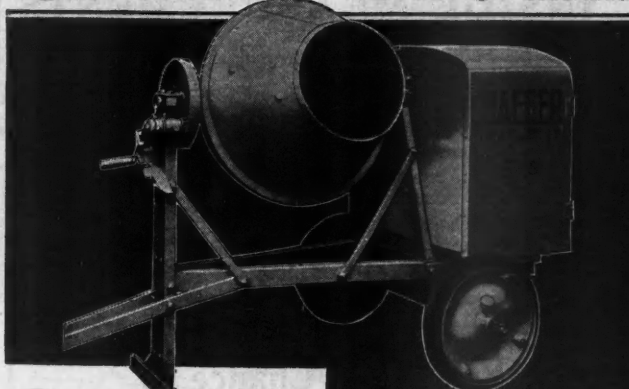
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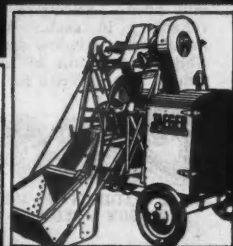


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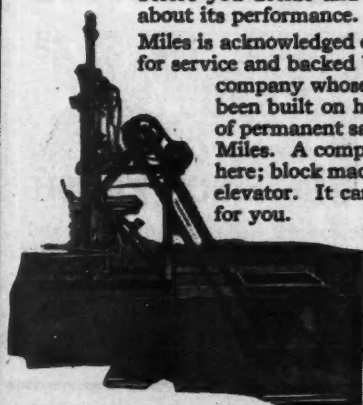
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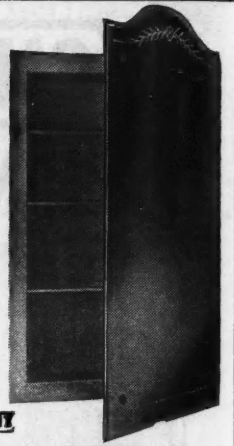
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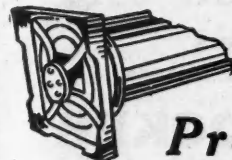



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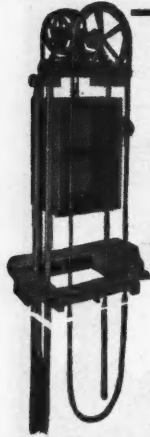
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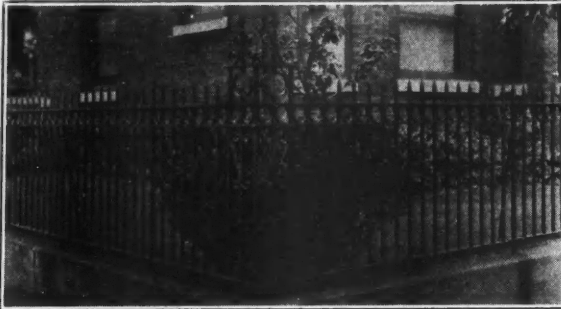
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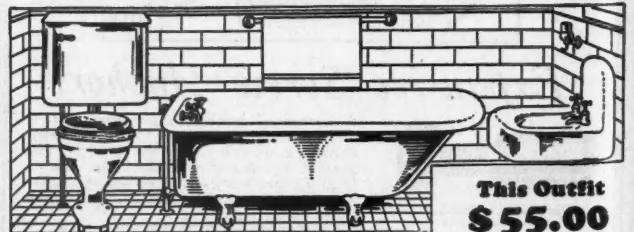
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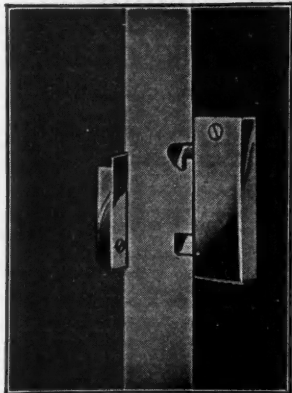
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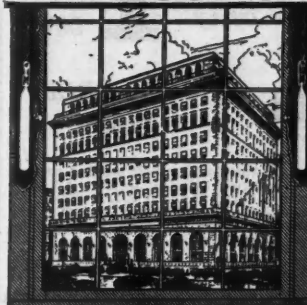
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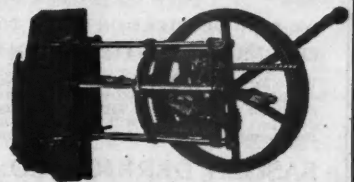
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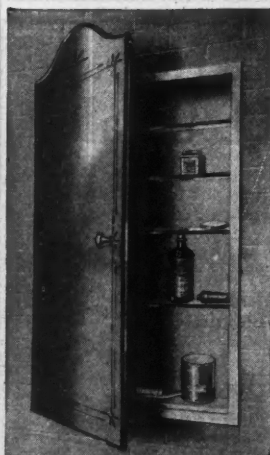
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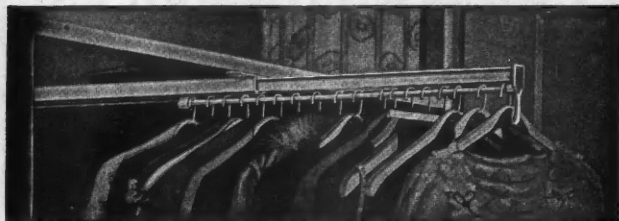
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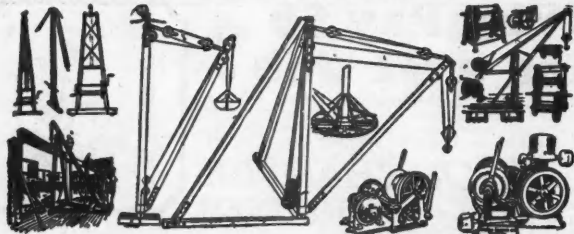
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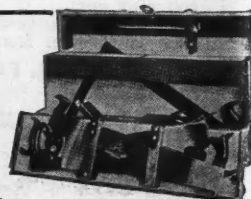
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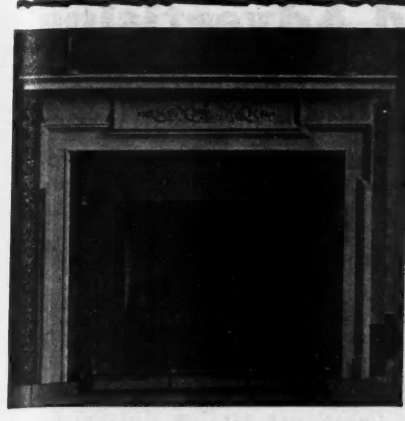
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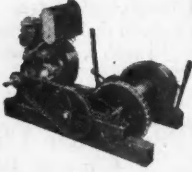
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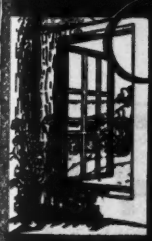
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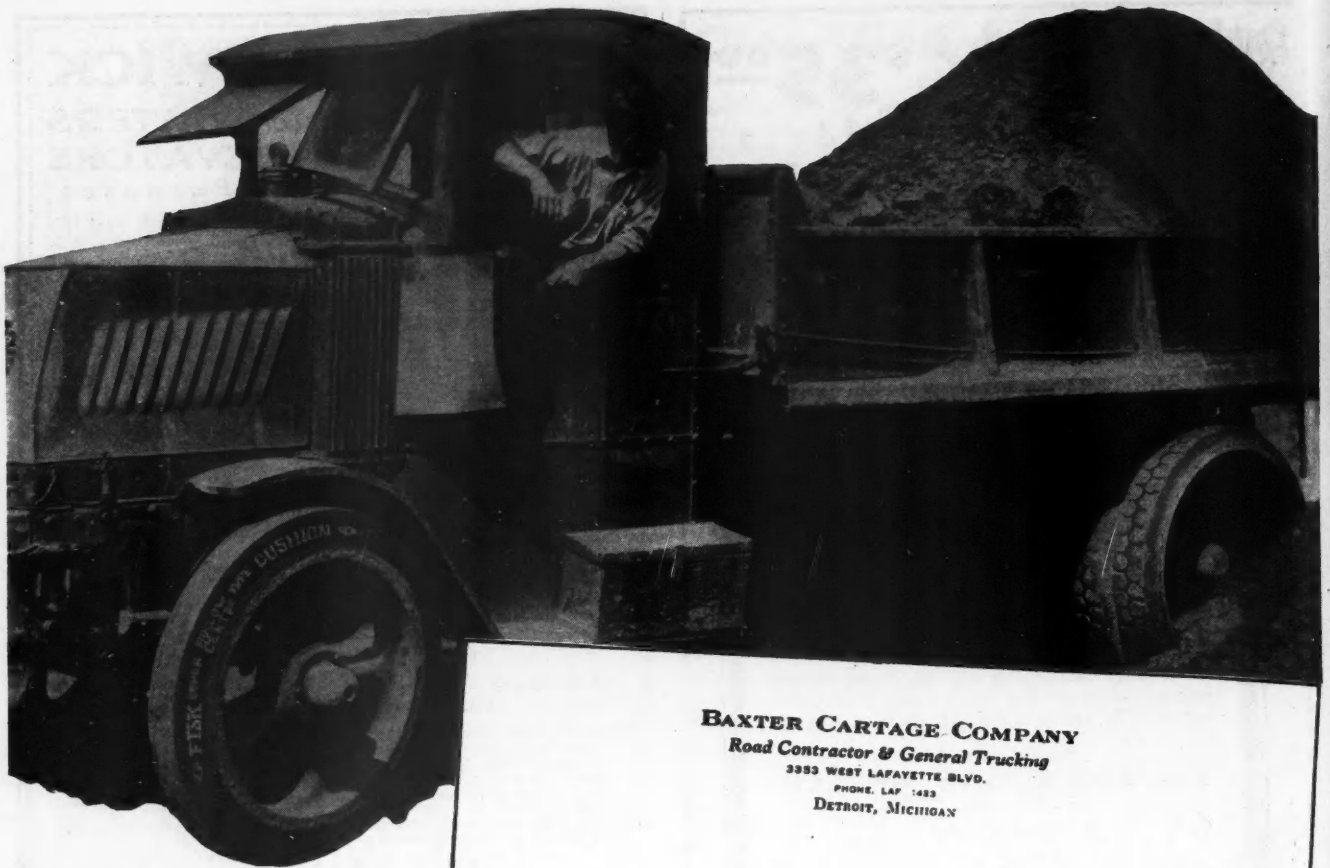


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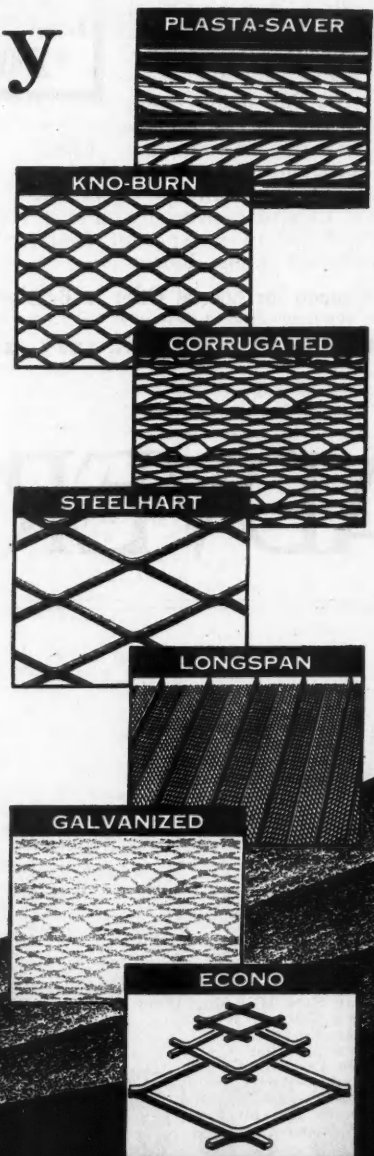
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December, 1928 (Continued)

Table listing various companies and their page numbers, such as Detroit Steel Products Co., DeWalt Products Co., and many others.

NOTICE TO ADVERTISERS

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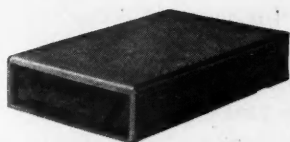
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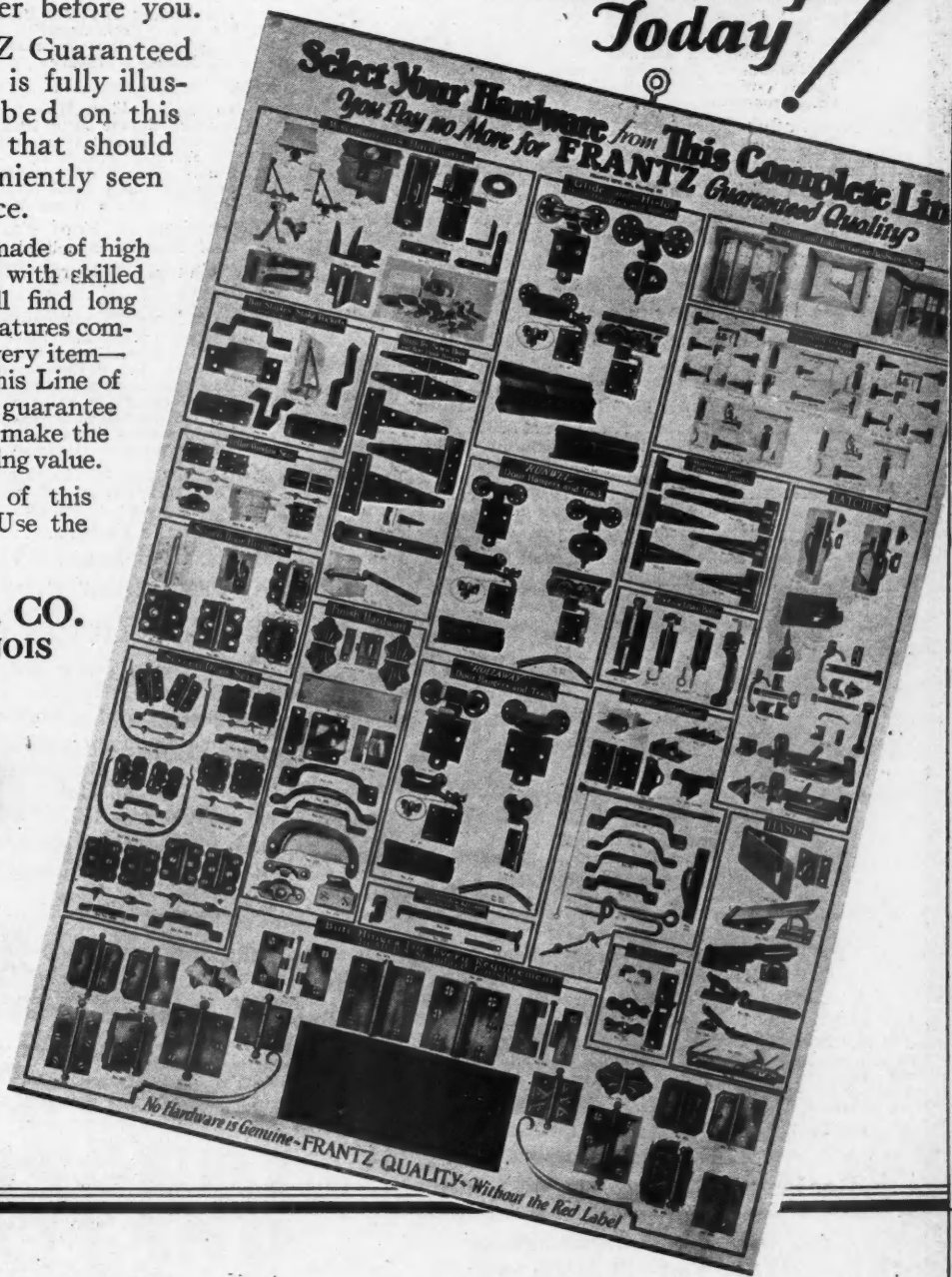
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