

AMERICAN BUILDER

A SIMMONS-BOARDMAN PUBLICATION

Vol. 47.

CONTENTS FOR AUGUST, 1929

No. 5.

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A House is only as good as its Roof
***A Roof can't be better
 than its Nails***

How foolish to use ordinary nails which can't last more than a few years, when for an extra \$1.50 per job you can put the roof on *permanently* with Zinclad Rust Proof Nails.

A nail that can't rust "stays put." And if the nails stay in place the roof will last.

Zinclad

REG. U.S. PAT. OFF.

RUST PROOF NAILS

This attractive home in Buffalo, N. Y., roofed and sided with CREO-DIPT SHINGLES applied with ZINCLAD RUST PROOF NAILS—the shingles will lay flat and tight permanently.

Zinclad Nails are heavily coated with *pure zinc*. Rain, snow or moisture can't get at them to rust them.

The result is that—even on buildings roofed 20, 30 and 40 years ago—the shingles lay as flat and tight as the day they were put on.

ASK: Tell us the kind of nails you're most interested in and we'll send a miniature carton of ZINCLAD. No obligation—a post card will do.

Made in all commonly used sizes for Wood (cut or wire styles), Asbestos, Asphalt or Metal Shingles, Roll or Corrugated Roofing or Siding.

In Handy Packages

containing 5 pounds, convenient and easy to take up on the roof. Or in 100 pound kegs at the same price.



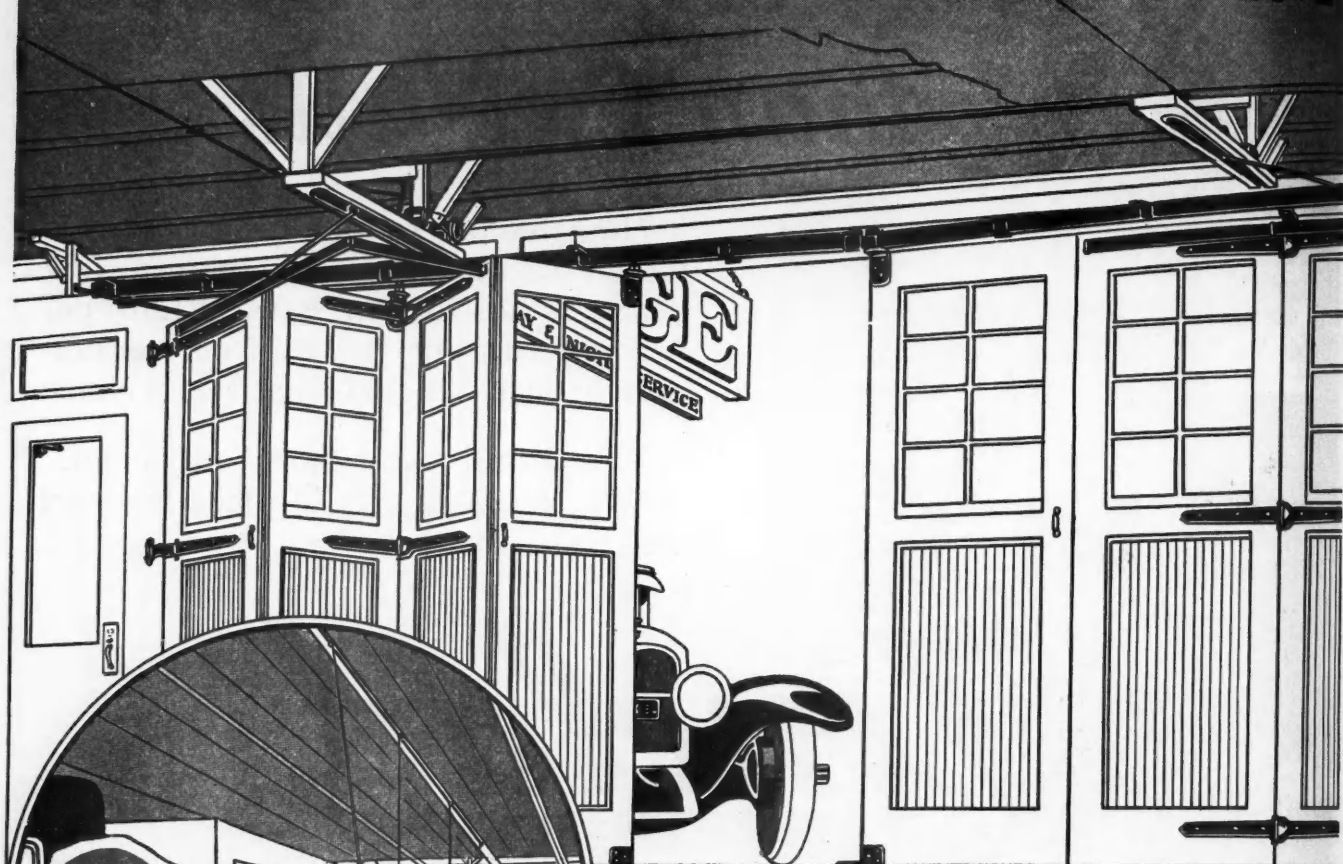
Sold by Most

Lumber & Building Material Dealers

W. H. MAZE COMPANY
 PERU, ILLINOIS

Slidetite Garage

... SLIDES THEM

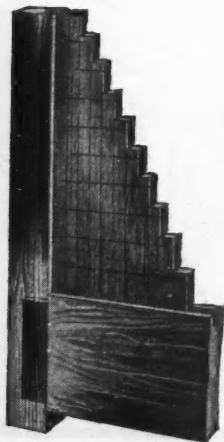


....for all kinds

Big commercial garage doors or small private garage doors—it makes no difference—the smoothest, quietest, speediest operation is assured for years to come with Slidetite equipment.

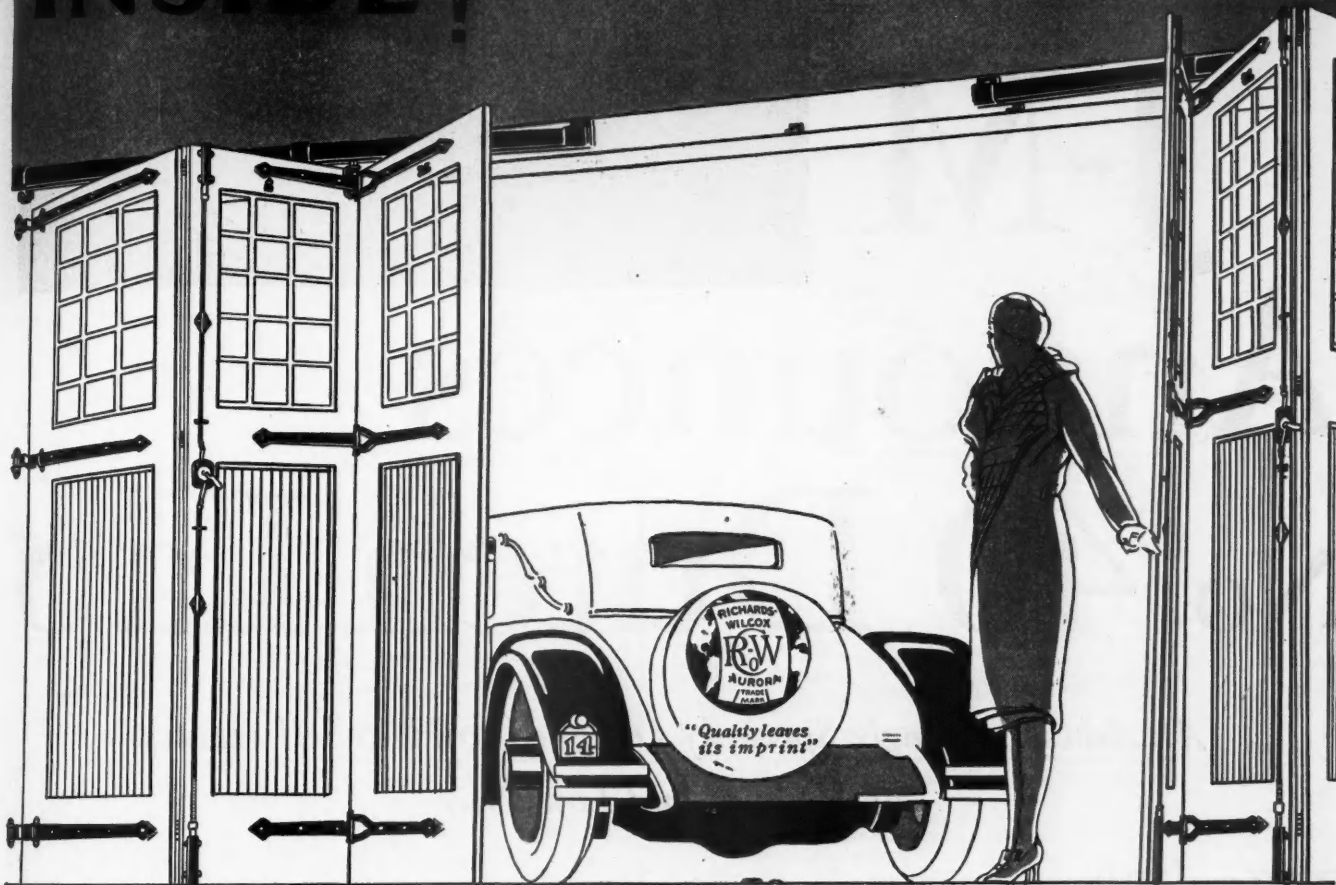
The "Ideal" ball bearing principle is the very last word in garage door equipment. The doors operate smoothly, quietly, and twice as fast as the steel balls roll in the grooved track. A gentle pressure opens

There's never any need to keep a motorist waiting at the door of a commercial garage. You can install the PowR-Way Electric Door Operator with Slidetite folding and sliding doors or ordinary swinging doors. Several pull cords or push buttons are conveniently located so that wherever you are, you can open and shut the doors in an instant.



Detail of Sturdy R-W laminated panel door, designed to overcome shrinking, swelling, splitting or cracking.

Door Hardware INSIDE!



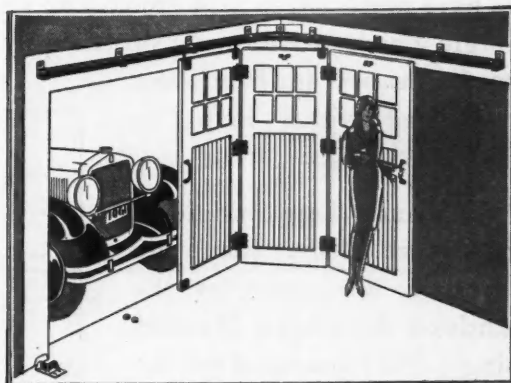
of garage doors

and closes Slidetite "Ideal" doors instantly.

And the doors slide *inside* the garage, away from the weather, drifted snow, packed ice and blustering winds. Positively no other method is *half* as satisfactory and efficient—we stake our twenty-five year reputation on *that*!

The cost is surprisingly small, the upkeep nothing. Write today for Richards-Wilcox Catalog No. 55.

Slidaside equipment slides the doors around the corner flat against the wall. Specially designed for small private garages not having sufficient depth for folding-sliding doors.



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 Atlanta Los Angeles San Francisco Omaha Seattle Detroit
Montreal • RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. • Winnipeg

A close-up view of J-M Dutch Lap Asbestos Shingles in place.



J-M Announces No. 40 Dutch Lap

*An Asbestos Shingle Specially Designed to Help Sell Houses
of Medium and Low Price*

THE new J-M Dutch Lap gives an effect closely resembling American Method Shingles, but at a price no builder can afford to overlook. The cost is, in fact, in line with that of hexagonals. We have perfected in J-M Dutch Lap an asbestos shingle which provides at a surprisingly low cost a roof with a new and handsome appearance which helps to make quick sales.

The Dutch Lap Shingle is laid so that in effect it appears essentially the same as the standard American Method shingle, but because of the design the cost for materials and labor is only a few cents more than that of the widely used J-M hexagonal styles.

J-M Dutch Lap differs entirely in appearance from anything of the kind offered before.

The vertical lines come directly above each other in alternate courses thus avoiding any diagonal effects. The pattern is of a suitable size for the smallest house. Weather protection is assured by a full 3" head-lap and 5 $\frac{3}{8}$ " side-lap sufficient to meet all conditions.

Consider

These 7 Points

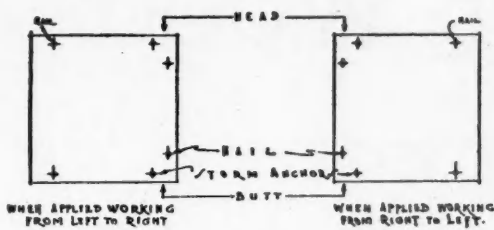
*New Popular Pattern
J-M Quality
Fireproof
Permanence
Attractive Colors
Real Weather Protection
Low Application Cost*

**Houses Roofed with
Dutch Lap Shingles
are Easier to Sell**

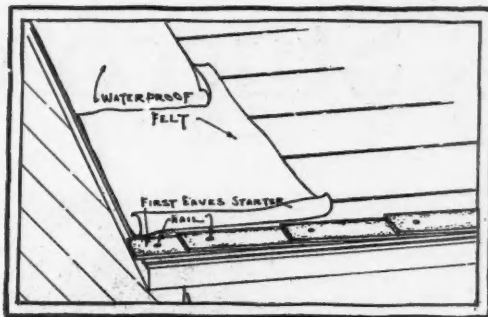
This improved design together with several new colors provides the Johns-Manville line of asbestos shingles with a still greater variety of colors and effects. Builders will find that no matter where a house is built, at what price it is to sell, there is a Johns-Manville asbestos shingle now exactly suited to it both in appearance and cost.

And the house with a J-M asbestos shingle roof is an easier house to sell.

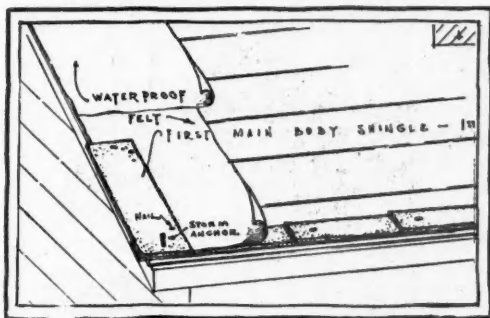
These Detail Drawings show you the ease of application, simplicity and effectiveness of the new J-M Dutch Lap Shingle



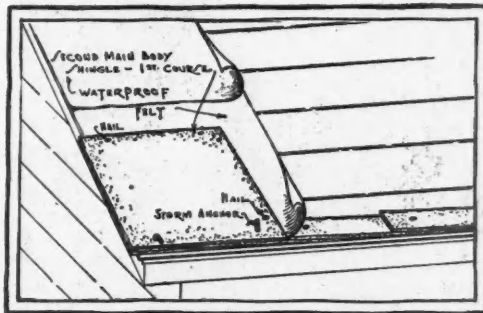
1 Shingles are punched for application from left to right or from right to left (just turn them around), so that maximum appearance may always be obtained.



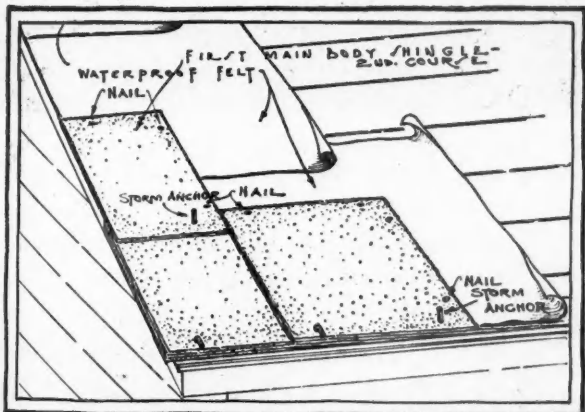
2 Application of Starter.



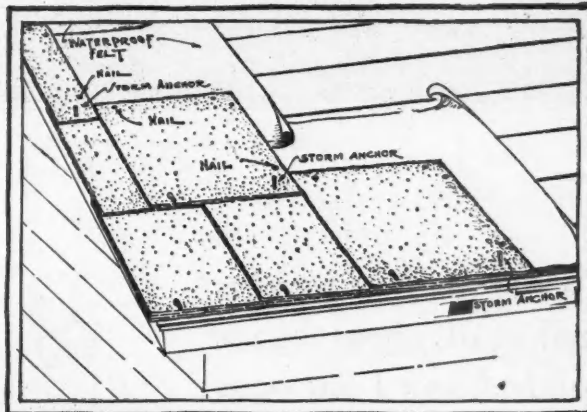
3 One full-sized shingle cut $\frac{3}{4}$ and $\frac{1}{4}$. The $\frac{1}{4}$ piece is used for starting first course at gable.



4 First full-sized shingle in place. Note how this shingle threads over storm anchor shown in Fig. 3 and has another storm anchor threaded through it for the next shingle. It is held with two nails as indicated.



5 Second shingle in first course is threaded over storm anchor in first shingle, another storm anchor threaded through hole in lower right-hand corner and two nails driven as indicated. Note that the $\frac{3}{4}$ piece of shingle referred to in Fig. 3, is used to start second course.



6 Continue the application as outlined above.



Johns-Manville

ASBESTOS SHINGLES

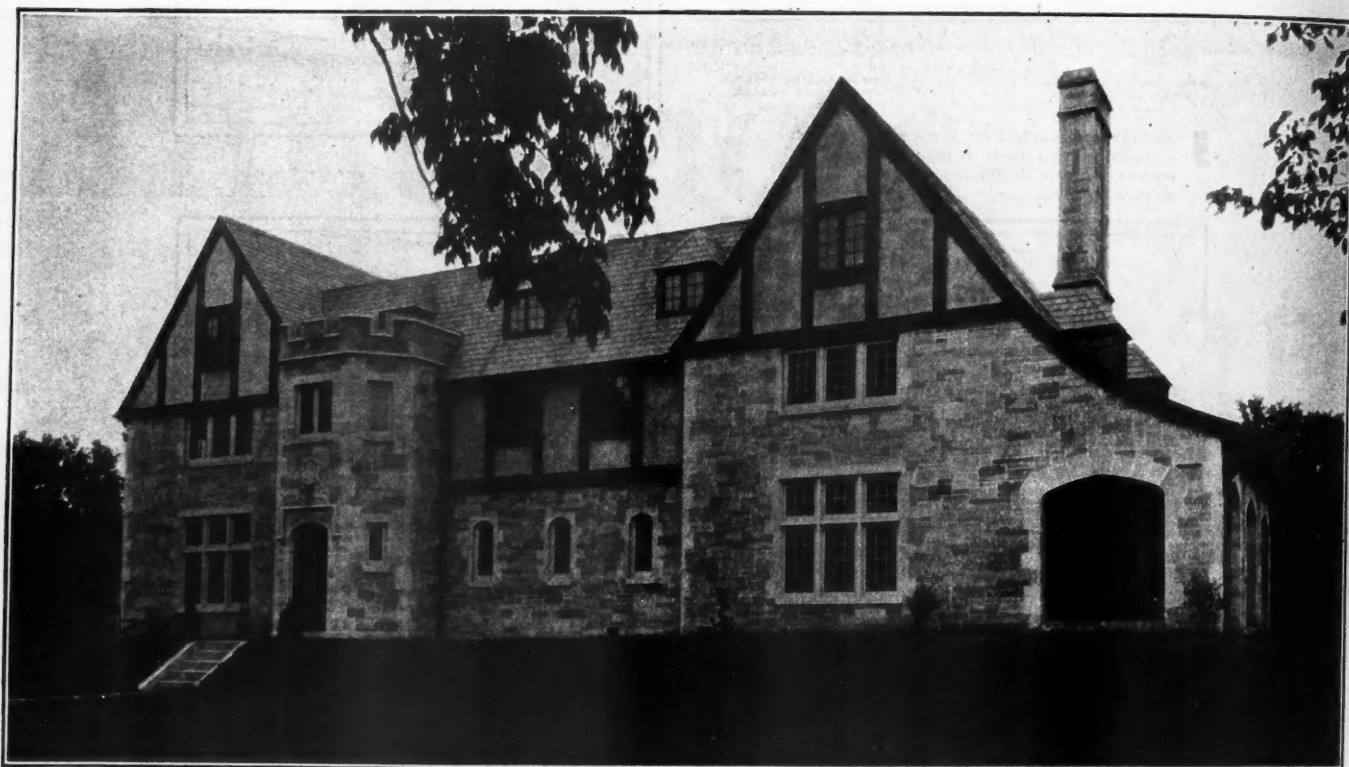
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JOHNS-MANVILLE CORPORATION
New York, Chicago, Cleveland, San Francisco, Toronto
(Branches in all large cities)
Please send me further details about J-M Dutch Lap Shingles on houses built for resale.

Name _____
Address _____

RS-2-5

Natural Stone now made as easy to use as Brick, Stucco or Wood



*Fraternity House, Greencastle, Indiana. Myron E. Pugh, Architect.
Variegated Indiana Limestone Random Ashlar.*

*Write for free booklets
telling all about the use
of Indiana Limestone
as random ashlar.*



NO matter what types of construction you specialize in, get posted immediately upon Indiana Limestone Random Ashlar construction. Residences, clubs, store fronts, apartments . . . there is practically no type of building for which Indiana Limestone is not ideally suited. Learn how you can give your cus-

tomers this beautiful light-colored natural stone facing at costs surprisingly low.

The beauty of natural stone is obvious. People are attracted by the rich appearance of houses built of Indiana Limestone. Here certainly is a profit field for you.

For this type of construction we saw the stone into strips four inches wide and of various heights. These are shipped direct to the building site. There they are broken to lengths by the aid of an electric saw or an ordinary hand saw. Bricklayers or stone masons lay the stone up in the wall. The product of our quar-

INDIANA LIMESTONE COMPANY

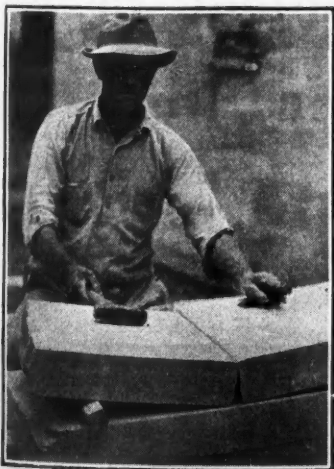
FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



*Stores and Apartments, Chicago. A. G. Lund, Architect.
Old Gothic Indiana Limestone Random Ashlar.*

ries prepared in this manner is used as a facing over hollow tile, or as a veneer over stud frame.

This construction is both speedy and economical, and gives most satisfactory results. Your stone masons or bricklayers may spend their entire time laying up stone, not on the ground preparing it. No setting drawings are needed when you use Indiana



Limestone in the new, modern way. Cut stone may be used as trim or may be omitted entirely.



After a shallow groove, little more than a scratch, is cut in the slab by means of an electric or ordinary hand saw, a tap with a mallet on the opposite side breaks the strip clean on a line with the groove.

Indiana Limestone Random Ashlar homes have durable beauty and therefore possess high resale values. One such home will advertise your business as nothing else will do.

Post yourself immediately on this new development in the building industry. The handy coupon below will bring you all the facts. Fill in, clip and mail it today.

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

Please send booklets and other information regarding
Indiana Limestone Random Ashlar for residences.

Name.....

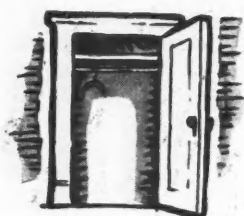
Street.....



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

General Offices: Bedford, Indiana • Executive Offices: Tribune Tower, Chicago



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Closet space, bathtubs, *and* floor lamps



No mere man will ever be able to chart the mind of a woman when she is buying a home.  Price, size and location are of major importance, but extra closet space, modern bathroom equipment, or electrical outlets placed where they will be most useful for a toaster,  a

SHEATHED

heater,  or a vacuum cleaner,  very often clinch the sale.

Sheathed Cable makes possible more electrical circuits and conveniences—helps you to make a sale. You can install more circuits and more outlets,  for the same cost,  if you wire a house throughout with Sheathed Cable.

A Sheathed Cable job will last as long as the house itself.

If you are not fully acquainted with Sheathed Cable, ask your electrical contractor—or write to any of the Licensed Manufacturers listed below for the booklet—"Where and How to Use Sheathed Cable".

Anaconda Wire and Cable Company
 Eastern Tube and Tool Company
 General Electric Company
 Marion Insulated Wire Company
 National Electric Products Company
 Rome Wire Company
Division of General Cable Corporation
 The Wiremold Company

The above Manufacturers are Licensed under Non-metallic Sheathed Cable Patents number 1439323; 1520680; 1203788; 1673752.

CABLE

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3

striking homes

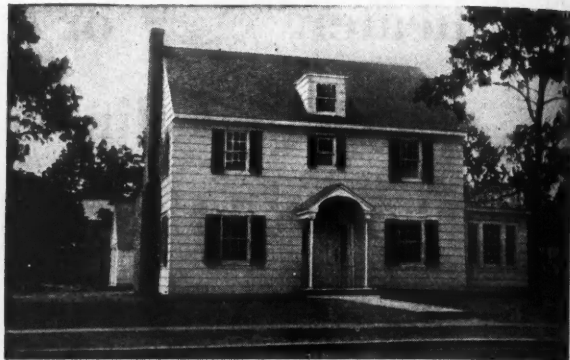


The NEW RIBBED STEELTEX is among the lifetime materials which add value to this modern home at Mt. Lebanon, Pa., J. E. Hoover, Inc., builder. STEELTEX puts a tough network of welded steel fabric into the plaster slab of walls and ceilings, and brings the protection builders and homeowners have sought for years.

3

built by

experienced builders



STEELTEX is adapted to safeguard plaster walls and ceilings in homes of modest proportions, as well as in the most elaborate structures. Witness this attractive moderate-priced home of Mr. Oscar J. Nollett, Roosevelt, L. I., N. Y. It is reinforced throughout with the NEW RIBBED STEELTEX, for permanently beautiful plaster.

Home buyers today look construction, including and ceilings reinforced New *Ribbed STEELTEX*

These shrewd investment builders are taking advantage of the fact that plaster on walls and ceilings can now be made a *permanent* building material.

Your prospects, like theirs, will be immediately interested in the greater economy and value of beautiful plaster permanently strengthened against strains with the NEW RIBBED STEELTEX.

The embedded network of STEELTEX acts like a series of small steel trusses. It distributes the strains. It does not allow the strains to concentrate at any one point. Used in

place of lath, this galvanized steel reinforcing base brings the utmost possible permanence to the beauty and value of plaster walls and ceilings.

The NEW RIBBED STEELTEX is the result of more than eight years of effort to bring reinforced plaster construction to even the most modest home. It is a plaster base consisting of welded steel fabric and a tough, fibrous backing. The new features include a V-rib stiffener that brings boardlike rigidity and a heavier, absorptive backing to which the plaster clings tight.

3

for

value-wise owners



This charmingly designed home at 11 Cranford St., Forest Hills, L. I. is the tenth STEELTEX-reinforced job built—and sold as fast as completed—by Guyon L. C. Earle, Inc., Forest Hills. The NEW RIBBED STEELTEX reinforces its interior plaster with a welded fabric of rustproofed steel, on guard against all strains.

for lasting walls with the

Our free book, *Better Walls for Better Homes*, gives full information about the economy and lasting value of reinforced plaster, which STEELTEX alone can provide. Write for a copy.

National Steel Fabric Company

DIVISION OF
Pittsburgh Steel Co.

3108 Union Trust Bldg. Pittsburgh, Pa.



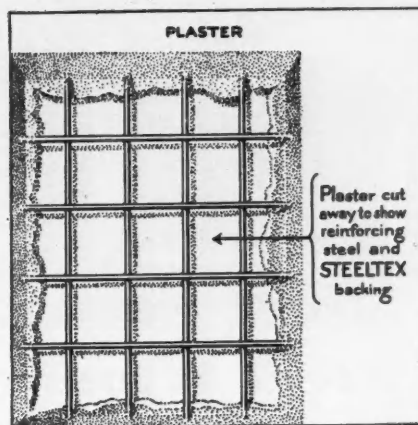
the New Ribbed STEELTEX

"BUILDS LIFETIME WALLS AND CEILINGS"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

7 reasons why the investment builder likes the NEW Ribbed STEELTEX

1. It makes plaster a lifetime material.
2. New V-rib stiffener produces level lathing job of boardlike rigidity.
3. Slab of uniform thickness assured—smooth in front as well as back.
4. Furring device assures embedment of reinforcing steel.
5. All plaster functions in the slab—no waste in keys or hangovers.
6. Plaster applies easily and stays put.
7. Reinforced plaster now economical enough for any home.



WHAT IS REINFORCED PLASTER?—Reinforced plaster is plaster strengthened with embedded STEELTEX. Protecting against strains in all directions is a network of rustproofed steel. Attached to the steel is a tough absorptive fibrous backing. When plaster is spread, it slides under the steel network, smooths out against the backing, and then additional plaster is spread over the steel. The resulting plaster slab is smooth in back as well as in front, with the steel embedded between. Thus the principle of *embedded steel*, that is used to strengthen great concrete structures, has been brought within easy reach of the everyday home of even the most modest proportions.

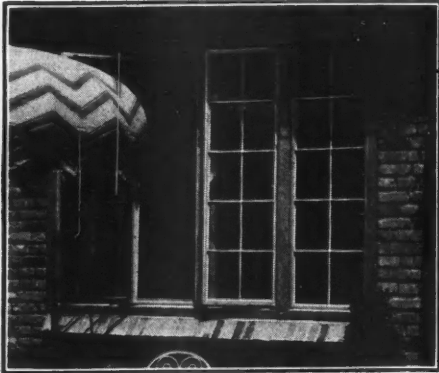
PERMANENT STUCCO, TOO, WITH STEELTEX—Almost the whole impression your houses make from the outside may depend upon stucco. Building with STEELTEX-for-Stucco is the recognized modern method in every part of the country. It combines the permanent beauty of steel-reinforced construction with the comfort and healthfulness of insulating, damp-proofing, and sound-deadening, due to its heavy durable water-proofed backing. "Overcoating" old houses may now be easily and inexpensively done with STEELTEX-for-Stucco.

There are four types of STEELTEX—all with the same principle and the same protection. (1) The NEW RIBBED STEELTEX for Plaster. (2) STEELTEX for Stucco and Overcoating. (3) STEELTEX for Brick or Stone Veneer. (4) STEELTEX for Floors and Roofs (concrete and gypsum).

A Bonus You Always Earn

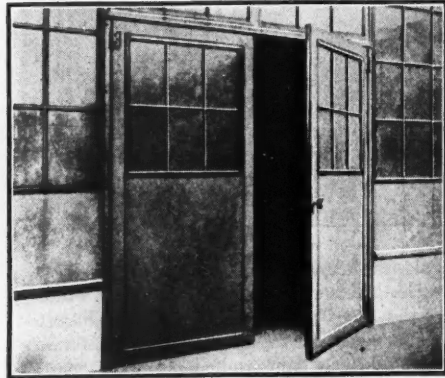
In Buying All Steel Products From Truscon

By purchasing all your requirements from one dependable source, you save on freight charges and handling costs, and avoid expensive delays in delivery of materials. Besides the use of Truscon Products is your assurance of highest quality and utmost ease of installation.



Steel Windows

The complete line of Truscon Steel Windows includes Pivoted, Projected, Casement and Basement Windows from warehouse stock, and also Double-Hung, Continuous, Counterbalanced and Donovan Windows and Mechanical Operators.



Steel Doors

Truscon Steel Doors for industrial buildings are sturdy, durable and fireproof. Furnished in types and sizes to meet every condition—Stock Swing and Slide Doors and Special Doors in Folding, Lift, Bi-Fold, Lift-Swing, Hangar, Slide and Swing Types.



Steel Joists

Fireproof floor construction, which is light in weight, economical in cost and quickly installed without centering is provided with Truscon Steel Joists. Three types of joists are furnished—Open Truss (O-T), Plate Girder (P-G) and Nailer.



Steeldeck Roofs

Light-weight fireproof roofdecks at economical cost are provided by Truscon Steel-decks. They are insulated to any degree, waterproofed and quickly installed. Furnished in three types—Ferrobord, I-Plates and Ferrodeck—to meet any condition.

Write for quotations and full information

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Trussed Concrete Steel Company of Canada, Limited, Walkerville, Ont.

Warehouses and Offices in Principal Cities

TRUSCON STEEL BUILDING PRODUCTS

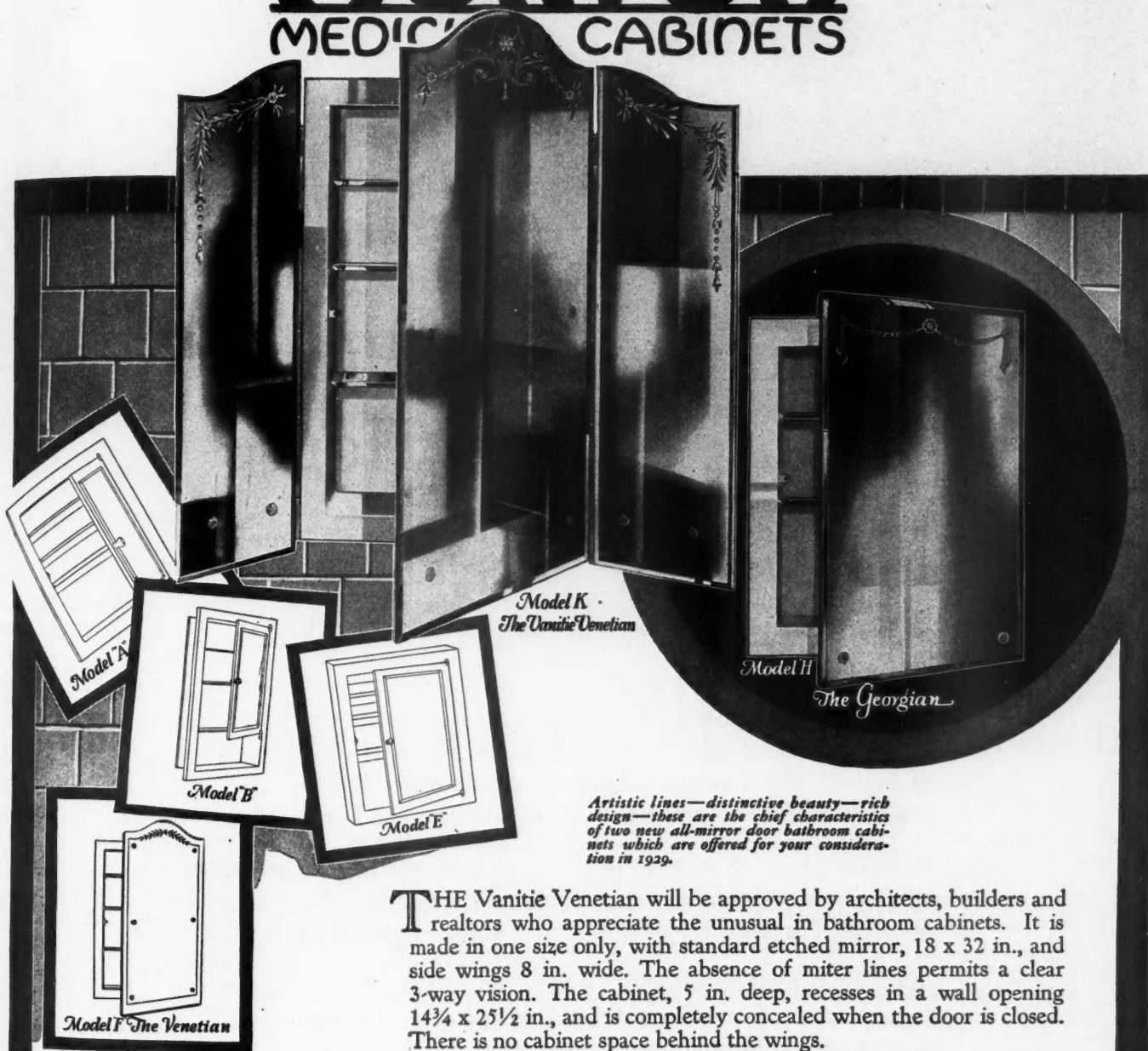
COMPLETE LINES INCLUDING ALL TYPES OF STEEL WINDOWS—STEEL DOORS—STEELDECKS—METAL LATH—STEEL JOISTS—REINFORCING STEEL—ROAD REINFORCEMENT—STEEL POLES—PRESSED STEEL—WATERPROOFING—ENGINEERING SERVICE

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

For Distinctive Bathrooms use

MORTON

MEDIC CABINETS



Artistic lines—distinctive beauty—rich design—these are the chief characteristics of two new all-mirror door bathroom cabinets which are offered for your consideration in 1929.

THE Vanitie Venetian will be approved by architects, builders and realtors who appreciate the unusual in bathroom cabinets. It is made in one size only, with standard etched mirror, 18 x 32 in., and side wings 8 in. wide. The absence of miter lines permits a clear 3-way vision. The cabinet, 5 in. deep, recesses in a wall opening $14\frac{3}{4} \times 25\frac{1}{2}$ in., and is completely concealed when the door is closed. There is no cabinet space behind the wings.

The Georgian was designed to meet the demand for an attractive cabinet between Models A and B and the Venetian type. It is made in one size only, a 16 x 20 in. beveled, etched mirror, having slightly rounded corners, decorative rosettes and clear vision. It requires a wall opening $12\frac{3}{4} \times 16\frac{3}{4}$ in.—recessing a full 5 in. if desired.

A Complete Line

11 models in the MORTON Line of Bathroom Cabinets, to recess or hang on the wall. Built of steel, electrically welded; finished in a beautiful white enamel, permanently baked on. Many distinctive features of construction. Installed instantly—"Out of the carton into the wall."

Nationally advertised in the Saturday Evening Post, Literary Digest, Good Housekeeping, American Magazine and House and Garden.

MORTON MANUFACTURING COMPANY

5190 WEST LAKE STREET-CHICAGO, ILL. U.S.A.

MORTON MANUFACTURING CO., 5190 West Lake St., Chicago, Ill.

Without obligation, please send me a catalog of the MORTON Line of Steel Bathroom Cabinets.

Name

Address

City

State

Please check business or profession:

Architect ☐ Builder ☐ Contractor ☐ Realtor ☐ Home Builder ☐





You See More "ROOF" than Walls in this Type of House

THE roof occupies much more of the vision when one looks at such houses as pictured above. How important it is to have the best roof obtainable—best in quality, endurance and attractiveness, and most economical in the long run!

Ambler Asbestos Shingles are used to form distinctive roofs. They lend cheerfulness and character to the "different" type of house. Their rough texture, deep shadows and non-fading colors unite to add value and beauty to the home.

Fire cannot harm such a roof, nor can the ravages of storm affect it, for Ambler Asbestos Shingles are made of asbestos fibre and Portland cement, Nature's enduring elements.

Made in three general styles and seven colors, these shingles can be adapted to any style of architecture. To the dealer, contractor or home-builder who seeks materials which are fire-safe, lasting and artistic, we recommend—

Ambler Asbestos Shingles

Made by

AMBLER ASBESTOS SHINGLE & SHEATHING COMPANY

Branches

BOSTON
BUFFALO
CHICAGO
CLEVELAND
MINNEAPOLIS
NEW YORK CITY

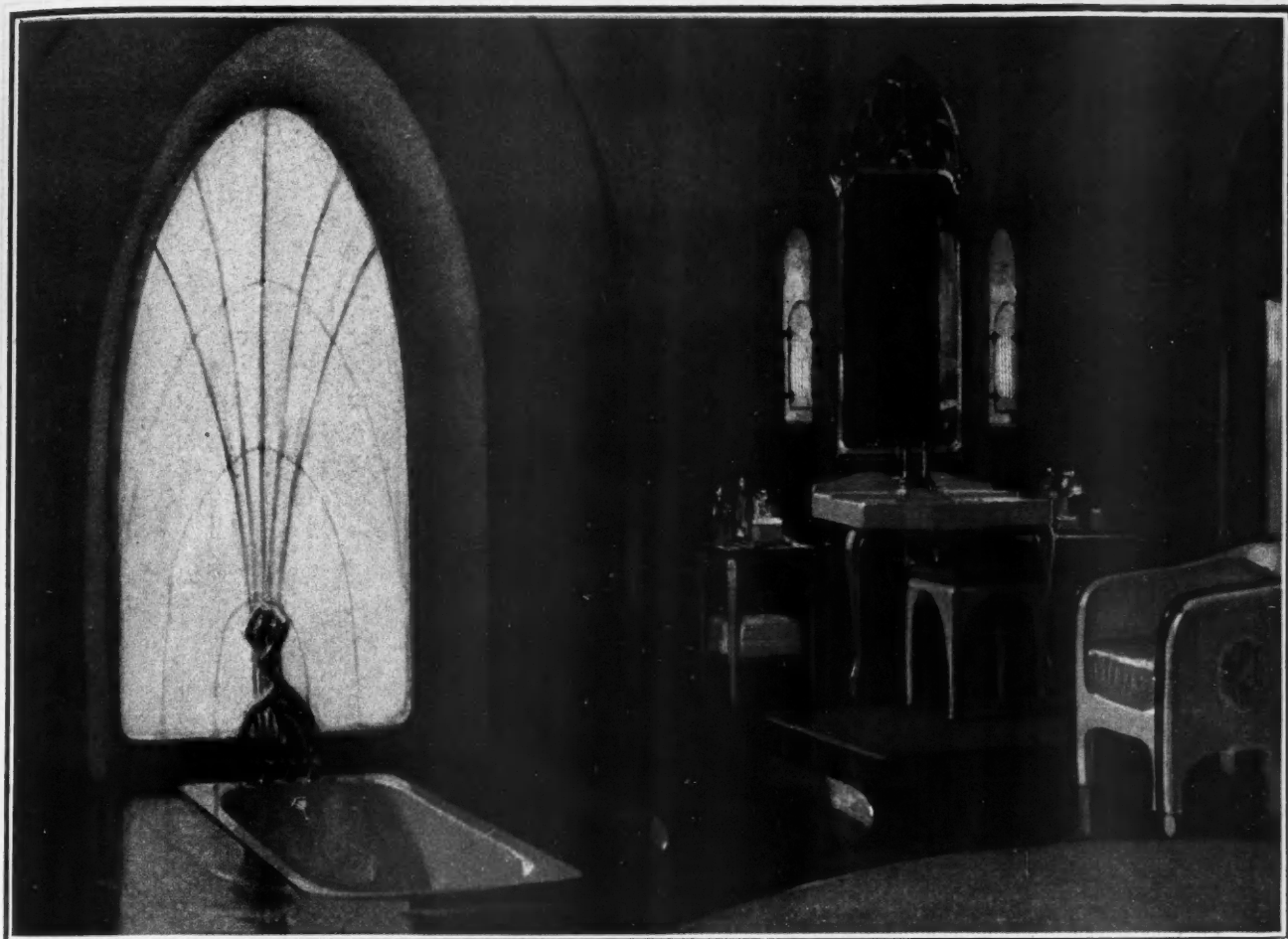
MAIN OFFICE: AMBLER, PENNA.

Factories:

Ambler, Penna., and St. Louis, Mo.

Branches

PHILADELPHIA
PITTSBURGH
ST. LOUIS
WASHINGTON
WILKES-BARRE



The correct use of color in the bathroom

A keen judge of color harmony, the home buyer. She is the final authority in the furnishing and decoration of the home. At a glance she visualizes what she can do with the living room, the dining room, the bedroom and the solarium.

Not so with the bathroom. There the color scheme has been determined by the color of the plumbing fixtures selected by you. If that color scheme is harmonious, it will help you sell the house.

Would you like to have an authoritative guide to the use of colored plumbing fixtures? Then write for the book "Color and Style in Bathroom Furnishing and Decoration".

This book is lithographed in twelve colors. It illustrates in original bathroom designs and color charts the correct colors to use with plumbing fixtures in Ming Green, T'ang Red, Ionian Black, Ivoire de Medici, Clair de Lune Blue, Meissen White, Rose du Barry, St. Porchaire Brown, Orchid of Vincennes and Royal Copenhagen Blue.

All "Standard" Plumbing Fixtures, regardless of price, are available in these new colors.

Standard Sanitary Mfg. Co. PITTSBURGH

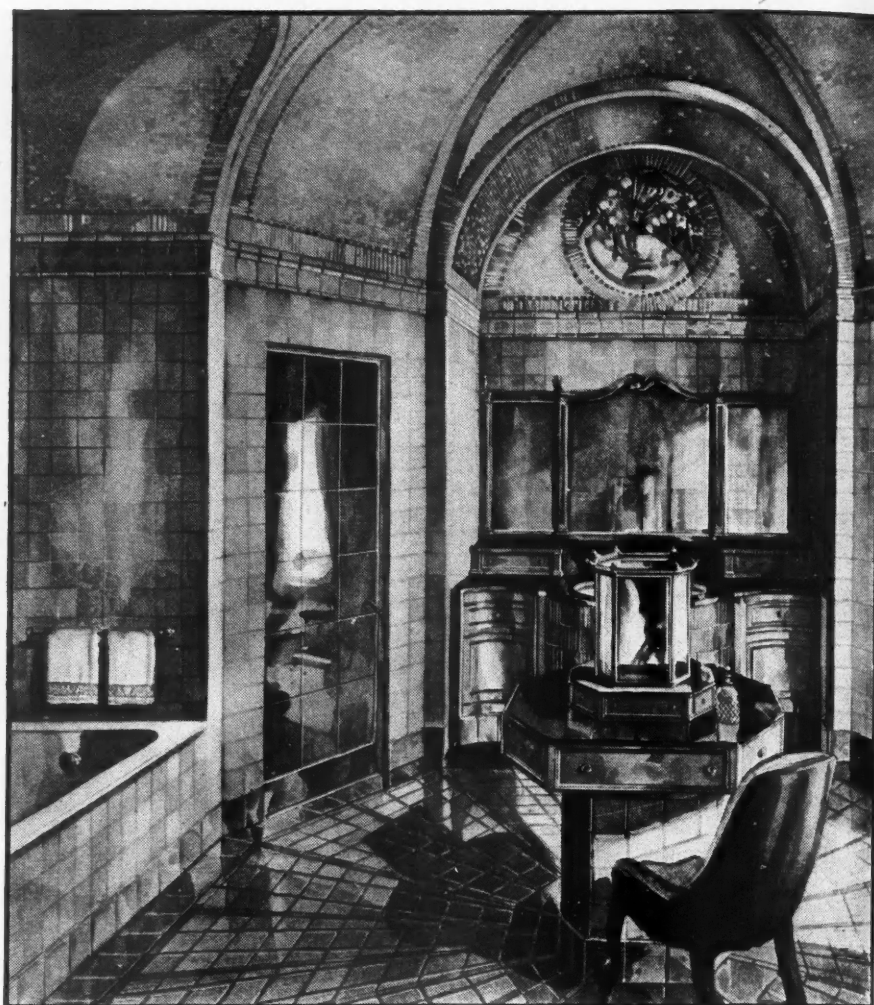
"Standard"
PLUMBING FIXTURES





YOU DERIVE the greatest benefit from Ceramic Tiles when the tiles are set by experts. Their skilled workmanship is instantly apparent. Select your tiling contractor on the quality of his work.

Floors and Walls that *Sell* Houses!



This exceedingly attractive tiled bath-dressing room in orchid and gold is designed by
FREDERICK G. FROST.

SOME floors and walls are undistinguished . . . making an impression neither for nor against the house. Other floors and walls are strongly and beautifully constructed . . . rich in the appeal that *sells*.

Walls and floors of Ceramic Tiles — real tiles — give *your* houses *sales appeal*!

Real tiles are more than ever in demand. They make possible rooms of original design and wonderful charm. They have extraordinary wearing qualities; lasting longer than the house it-

self. Their colors will not fade. They clean easily, quickly.

Enthusiastic approval has brought real tiles not only into bathrooms and kitchens, but into sun rooms, dining rooms, entrance halls, stairways.

When you draw upon Ceramic Tiles for walls and floors, the possibilities of design and color are unlimited. You never need to duplicate a design. And the wide variety obtainable assures tiles for the simplest home and the most palatial residence.

Nowhere can you find so

adaptable a material with the beauty and endurance that real tiles possess. And nowhere can you find a product so well liked . . . so much in demand! You cannot afford to overlook the selling force in floors and walls of Ceramic Tiles!

Your tiling contractor can tell you how to use this material more extensively . . . more profitably.

ASSOCIATED TILE MANUFACTURERS

420 Lexington Ave., New York, N. Y.

ALHAMBRA TILE CO.
AMERICAN ENCAUSTIC TILING CO., Ltd.
CAMBRIDGE TILE MANUFACTURING CO.
FEDERAL TILE COMPANY
FRANKLIN POTTERY
GRUEBY FAIENCE & TILE CO.

MATAWAN TILE CO.
THE MOSAIC TILE CO.
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STANDARD TILE CO.
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UNITED STATES ENCAUSTIC TILE WORKS
UNITED STATES QUARRY TILE CO.
WHEATLEY TILE & POTTERY CO.
WHEELING TILE CO.

K E R A M I C T I L E S

Multiplying the Hours!

THE technically-trained carpenter, contractor or builder will at once recognize the worth of a machine that successfully performs the many functions of the 20th Century Woodworker and, in performing them, saves time, drudgery and money.

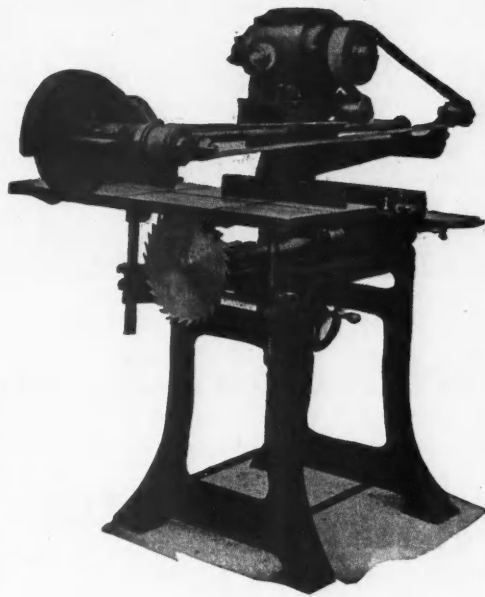
This ingeniously-designed machine is *ball bearing* throughout.

It is built better than near-similar machines, and finished best of all.

It is sturdily constructed of steel.

Your request for the illustrated booklet, telling the many other details, will have prompt attention—and you will not be obligated. Send for it, *now*.

20th CENTURY WOODWORKER



ITS FUNCTIONS:

Crosscutting, ripping, boring, dadoing, routing, mitering, moulding, grinding, planing, jointing, sanding, plowing, rabbeting, matching, tenoning, stair routing, side door jamb, jack rafters.

ADAPTABLE BY:

Carpenters, builders, lumber yards, office buildings, department stores, railroads, schools, yacht builders, packers.

ITS ADVANTAGES:

Saves time—eliminates delays—*saves* money—assures accuracy—*saves* handling—stops waste—*saves* space—prevents annoyance—*saves* fuel and power.

*"The 20th Century Woodworker Cuts
Costs As Rapidly As It Cuts Wood"*

AMERICAN SAW MILL MACHINERY CO.

197 MAIN STREET

HACKETTSTOWN, N. J.

Manufacturers of a Complete Line of Woodworking and Saw Mill Machinery

The DRUM

Makes SMITH Mixers GREAT!

*Large Diameter
and Narrow*

Big Openings

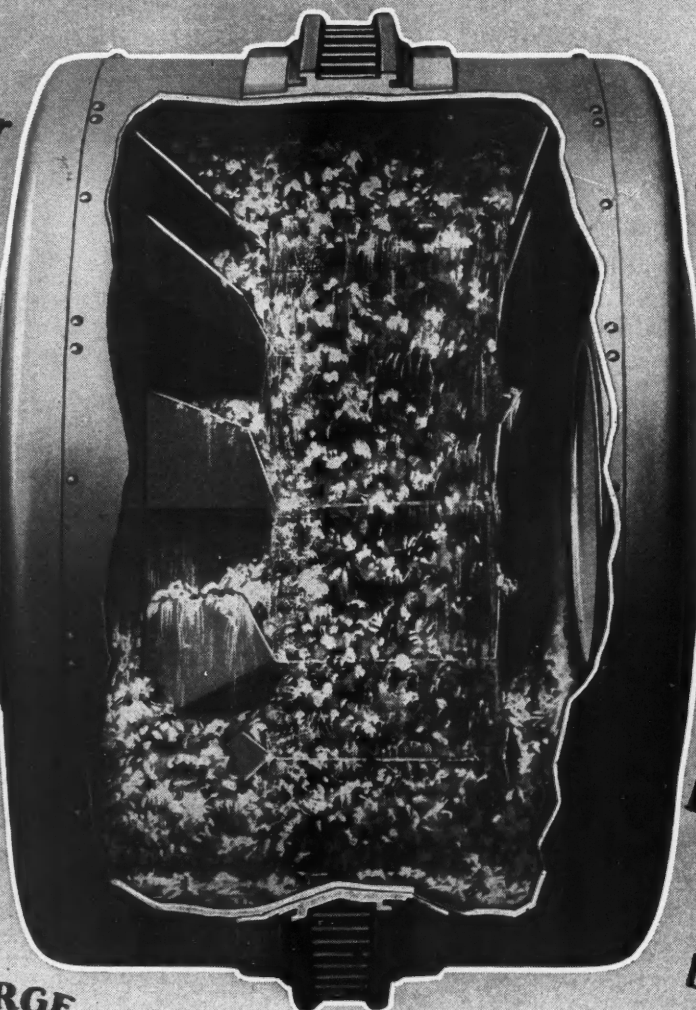
*10 FULL-WIDTH
BUCKETS*

Faster Charging

Faster Mixing

FASTER DISCHARGE

Self Cleaning



Center Support

*SMOOTH
RUNNING*

Center Drive

Long Life

BETTER MIXING

*NON-
BREAKABLE*

SMITH End-to-Center Mixing

Balanced Batch

*Perfect
for Dry Concrete*

THE drum is "the works" of any mixer. All other parts are merely helpers. That's why Smith mixers are popular for both big and little jobs. The Smith drum has the famous "end-to-center" mixing action—faster all the way—and built for long hard service. Use a Smith on your next job. Write for a copy of catalog No. 528.

THE T. L. SMITH COMPANY, 1026-32nd St., Milwaukee, Wisconsin

Division of National Equipment Corporation

Sales Offices and Service Warehouses in all principal cities



SMITH MIXERS

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

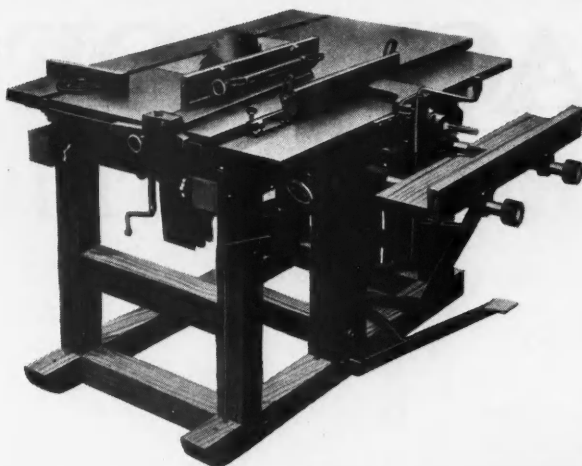


Fig. 690—Four men can use this Variety Wood Worker at the same time. A Rip and Cut-Off Saw Bench, with Boring Attachment, Mortiser, and Jointer all in one. Send for Booklet No. 82.



No. 65—Variety Tilting Table Saw—with motor on arbor; with motor on base; with counter shaft. Each machine furnished with one saw, ripping gauge, and one cut-off gauge with reach rod and stop.



No. X-24—A revolutionary new machine. Tilting Arbor Saw Bench—Sturdy, compact, self-contained. Motor built in; saw completely guarded.

Monarch

HUSKY and HANDY

♦ ♦ ♦ *and HOUNDS FOR WORK!*

MONARCH machines will never object to continued hard usage! They are built for that very thing. Only tested and proved materials are used in their making. The men who build them are craftsmen long trained in precision. Every part is inspected and approved before it is used in a complete machine. Every machine is guaranteed.

MONARCH machines are portable—they can easily be moved from job to job, an advantage which saves endless time and difficulty in the case of bulky materials.

They reduce labor to its minimum, and enable you to turn out the greatest possible amount of work at the least possible cost.

MONARCH machines are well guarded. Your operators can work steadily without fear of injury.

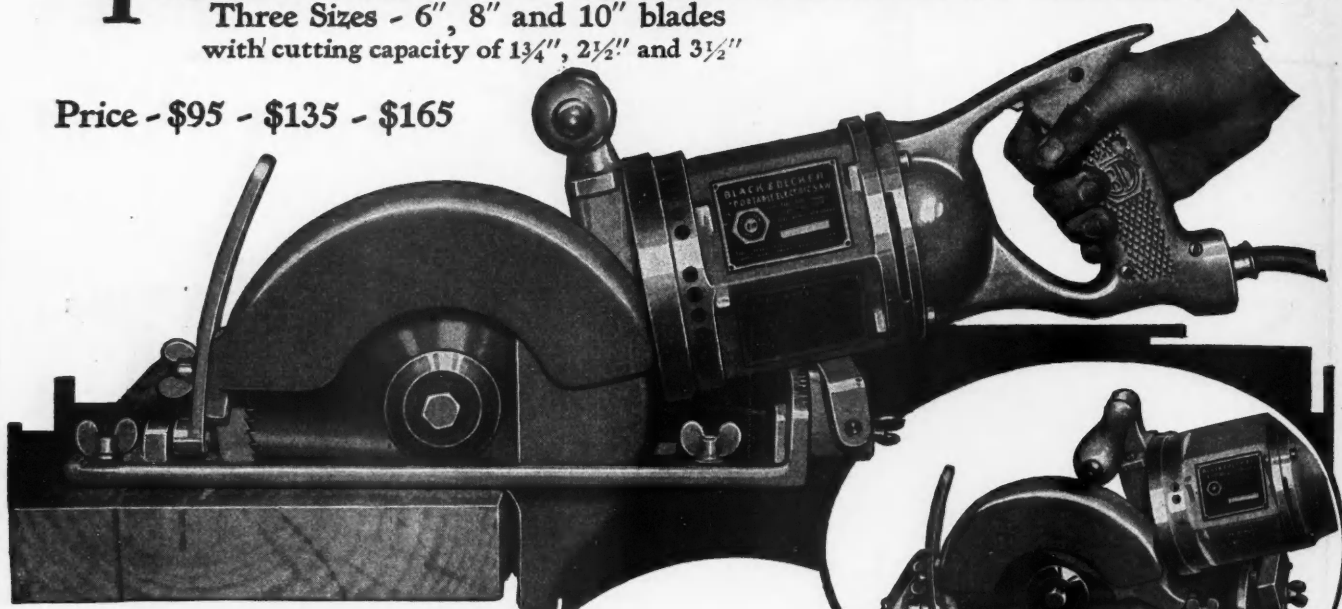
Write for descriptive circular and low prices

AMERICAN SAW MILL MACHINERY CO.
60 MAIN STREET HACKETTSTOWN, N. J.

new BLACK & DECKER PORTABLE ELECTRIC SAWS

Three Sizes - 6", 8" and 10" blades
with cutting capacity of 1 1/4", 2 1/2" and 3 1/2"

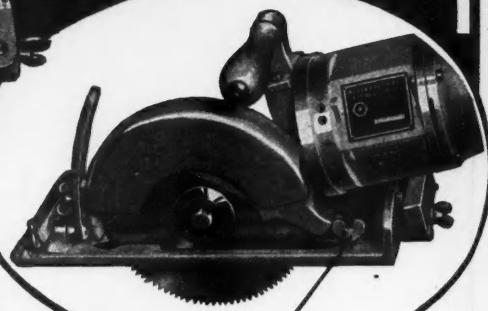
Price - \$95 - \$135 - \$165



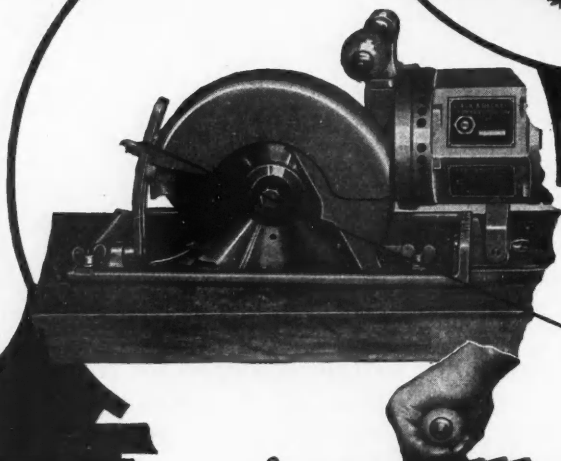
These Saws will cut and rip lumber up to their rated capacities and, with special blades, will cut light gauge metal, slate, marble, tile, porcelain etc.

They are light in weight, sturdy and powerful - are air cooled and will operate continuously without overheating. Saw Blades are enclosed in Telescopic guards, as shown, insuring absolute safety.

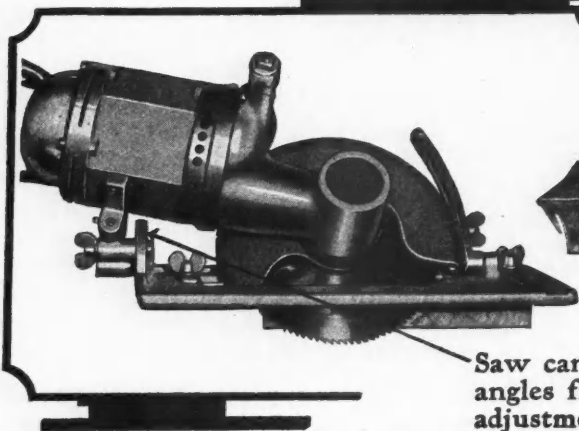
The famous Black & Decker "Pistol Grip and Trigger Switch" affords the utmost ease of control.



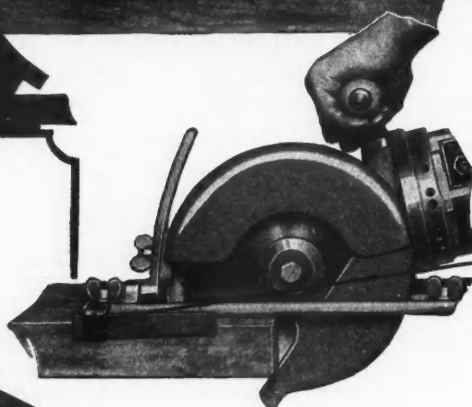
Guard may be locked open for special work, such as when making pocket cuts in flooring.



Shoe may be adjusted to control depth of cut from a mere scratch to the full capacity of the Saw.



Saw can be adjusted to cut bevels at any angles from vertical to 45° - note graduated adjustment.



An adjustable fence is provided for regulating the width of the cut, insuring accuracy in ripping.

The BLACK & DECKER MFG. CO.

Toronto, Ontario, Canada

TOWSON, MARYLAND, U. S. A.

Slough, Bucks, England

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



Running water under pressure

*makes the house better to live in and
easier to sell*

PEOPLE who own, or are buying or building homes far from city noise—and city water mains—are just as much in need of a dependable running water system as are those who live in the city and already have this convenience.

Water on tap—faucet service throughout the premises—means a house that is a home. It makes the house more attractive to every prospective buyer. It makes it easier to sell. And the house commands a better price.

This Fairbanks-Morse Home Water System is rendering a superior running water service to thousands, beyond city water mains. It is a modern, up-to-date home water system embodying the many desirable and exclusive features developed from Fairbanks-Morse's years of water-plant building experience. It is simple, compact and complete. Of clean-cut design, and entirely automatic in operation. And its cost is only \$70.

This plant is but one of many outstanding F-M Home Water Systems designed to solve all problems involving water supply and available power. Investigate it. Find out about the helpful advice freely offered by F-M engineers in the solution of individual water problems—and about the liberal F-M Easy Payment Plan.

Mail the coupon NOW, for the new F-M illustrated booklet. It explains everything—is full of information you will want.

FAIRBANKS-MORSE Home Water Systems

Manufacturers— FAIRBANKS, MORSE & CO., Chicago, U. S. A.
Branches and Service Stations Covering Every State in the Union

Fairbanks-Morse Products



"Every Line a Leader"

Only
\$70

Cash f. o. b. factory, complete with motor for 60 cycle or direct current. Capacity of 210 gallons per hour—enough water for the whole family's use. Also available in 420 gal. per hour size at \$100.



NOTE THESE 12 STAR FEATURES

- 1 Completely enclosed. All parts fully protected.
- 2 Compact—19 in. in diameter, 21 in. high.
- 3 Big capacity—210 and 420 gallons per hour.
- 4 Entirely automatic—starts itself—stops itself.
- 5 Easy to install—only two pipe connections.
- 6 Completely equipped, including electric motor, automatic switch, pump and tank.
- 7 Quickly accessible—simply lift hood. The removal of one stud bolt exposes valves.
- 8 Quiet and exceptionally smooth running.
- 9 Self-oiling.
- 10 Supplies steady, full stream without pulsation.
- 11 Can be used with large storage tank when desired.
- 12 Genuine F-M unit throughout. Fully guaranteed—the biggest home water system value ever offered.

MAIL
COUPON
today!

FAIRBANKS, MORSE & CO., Dept. H-8
900 S. Wabash Ave., Chicago, Ill.
Send your FREE Home Water Service Booklet and information about F-M Home Water Systems.

Name.....
Address.....
County.....
State.....
My source of water supply is:
☐ Shallow Well ☐ Deep Well
☐ Spring ☐ Lake
Have you electricity?
☐ Yes ☐ No

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

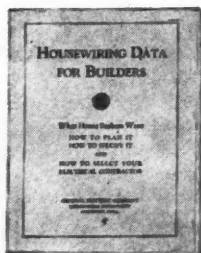


When all else is equal *good wiring* can swing the sale!

You know how you feel about it yourself. If you were buying a home and you saw two identical houses, one with a General Electric Wiring System and one without . . . how long would it take you to decide?

These days people are particularly interested in adequate wiring . . . they *use* electricity so much more than they did. And they accept as fundamental the comforts which our grandmothers would have considered the very rarest luxuries.

If you want to sell a house quickly, easily, profitably, it must have plenty of electric outlets and switches. Without these no house is considered modern or desirable. And when all the wiring is of General Electric quality, houses have a good head-start toward a sale.



Send to Section W-168 for a copy of the booklet "Housewiring Data for Builders."

GENERAL ELECTRIC WIRING SYSTEM

MERCHANDISE DEPARTMENT

- GENERAL ELECTRIC COMPANY -

BRIDGEPORT, CONNECTICUT

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



FOR ALL MODERN CONSTRUCTION

Where economy and quality both must be considered » »

When your job calls for materials and workmanship according to modern requirements—when competition is keen and you must take advantage of every possible labor-saving and material-saving device—use Genfire Products. Genfire materials have been designed to afford the high quality required for the finest structures, with a finished cost that enables you to meet competition and still allow a satisfactory profit. Our catalogs will explain the use of Genfire Products. Ask for them.

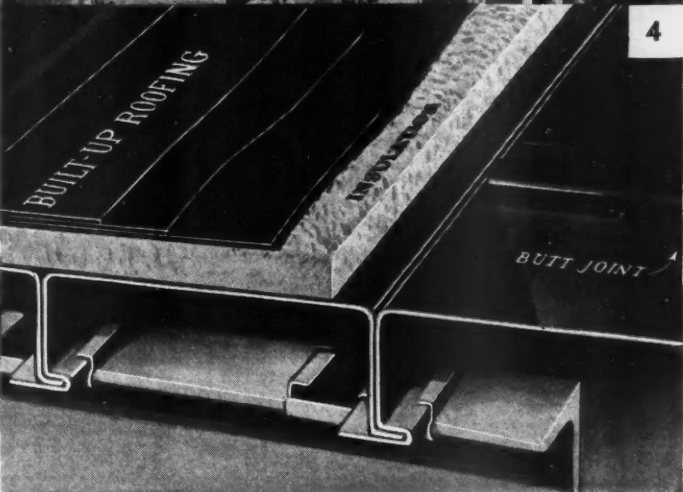
- 1 HERRINGBONE DOUBLEMESH METAL LATH is economical because of the savings in time and materials, and of the high character and permanence of the finished work.
- 2 GENFIRE STEEL JOISTS for fireproof floor construction eliminate centering and are quickly installed. Their light weight effects savings in supporting structural work.
- 3 GENFIRE STEEL CASEMENTS reach the job complete in frame, ready for installation. Absolute minimum amount of adjustment required. Besides they are very moderate in first cost.
- 4 RIGIDECK FOR ROOFS—The fireproof, light-weight roof deck units of Armco Ingot Iron are laid like boards and quickly erected. Roof can be insulated to any degree and is adapted to new or old buildings.

Write for quotations and full information.

GENFIRE STEEL CO., YOUNGSTOWN, OHIO
Warehouses and Offices in all Principal Cities
Dealers Everywhere

GENFIRE

FIRESAFE BUILDING PRODUCTS





*Your own carpenters
do the work*

and the profit is yours , , ALL OF IT , ,

On new buildings or on re-laying jobs for homes, apartments, churches, bedrooms of hotels, and the like, there isn't a more satisfactory flooring than CROMAR.

Any two of your carpenters can lay a CROMAR FACTORY FINISHED Oak Floor at the speed of a room a day. The completed job will be more perfect than the usual hand-finished floor. And the finish will long outlast the normal hand-finish.

You get the credit for the better installation—and you don't need to split your profit with anyone.

Here's why: CROMAR Oak Flooring is *completely finished at the factory*—milled, filled, double varnished, and even treated to resist moisture—by MACHINES. CROMAR machines naturally can do a better filling job than can be done by hand. The putty-like paste filler is forced deep into all the pores of the wood, giving a much better surface for the coats of varnish. And those machines spread the two coats of varnish far more evenly than can be done by hand. Furthermore, because machines do the spreading, a larger amount of solids can be carried in the varnish—resulting, of course, in a much more durable finish of longer life.

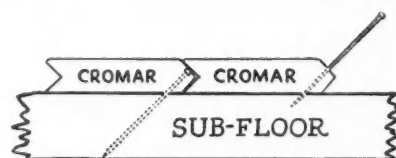
When these completely finished CROMAR strips reach you (CRATED, not just bundled) there's nothing left to do but nail them down.

Write for free samples and complete literature concerning the manufacture, the selling and laying of the only Factory Finished hardwood flooring in the world.

The CROMAR COMPANY
Williamsport, Pa.

Pacific Greater West Distributor:
THE C. L. THOMPSON COMPANY
Offices and Warehouses:
200 Davis Street, San Francisco, California
324 N. San Pedro St., Los Angeles, California

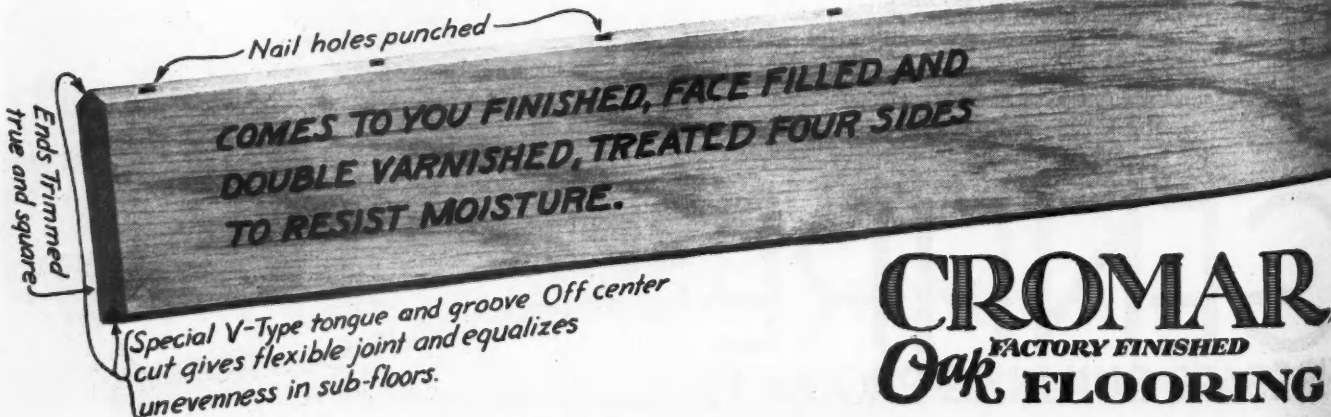
when you lay
**CROMAR
OAK FLOORS**



*The BEVELED CROMAR Tongue
means greater speed in nailing!*

Nailing—the ONLY operation required with CROMAR FACTORY FINISHED Oak Flooring—is made easier by the Special CROMAR Tongue-and-Groove. It is V-Type. It fits quickly and snugly—without "blocking." It does away with the "setting" of nails.

Furthermore—the flat, beveled tongue, without sharp edges to bruise, prevents all damage to the finished face and the tongue itself. The off-center cut, by the way, gives a flexible joint which allows for the small unevennesses in sub-floors.



CROMAR
Oak FACTORY FINISHED **FLOORING**

What did Mr. Hoover's Committee find out about builders' hardware?

HERBERT HOOVER was a busy Secretary of Commerce. But not too busy to act as Chairman of the Committee on Recent Economic Changes. And what did this fact-finding committee find of interest to builders?

Take their two-volume report and turn to page 237 and this is what you'll read.

"Construction of Houses.—Much of the attractiveness of new houses is owing to their design and construction. What follows is an account of changes observed during field investigations. These changes also throw light on the intensified competition among different building materials and reveal a tendency to use materials which leave the factory in which they are made in such shape as to require little labor on the building site."

"Design.—There have been changes in fashion in the architecture of houses, with marked improvement in some, particularly those selling above \$10,000 or \$12,000. They are many evidences of *improving taste*, and efforts on the part of builders to meet it, for the less expensive houses."

Reads like a mighty strong endorsement for the many building contractors who have standardized on Good Hardware—Corbin,

doesn't it? For it is a fact that Corbin builders' hardware *leaves our factory in such shape as to require little labor on the building site*. This of course, results in a considerable reduction of expensive labor costs.

But Corbin does more than save labor costs.

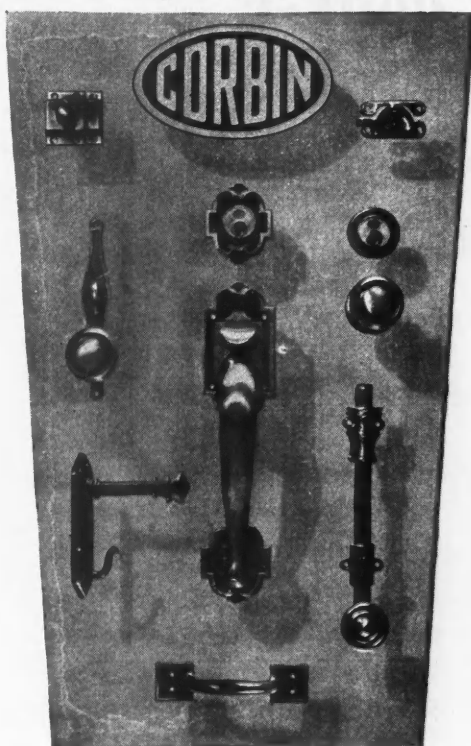
Corbin equipped houses are easier to sell. Why? The Hoover report throws light on that too. For they found out that "There are many evidences of improving taste, which mean style, and efforts on the parts of builders to meet it for the less expensive houses."

Style—authentic style—has long been a predominate Corbin feature. When you want Colonial hardware for a Colonial style house you want it to be correct, right down to the smallest item. And that's what you get when you specify Good Hardware—Corbin.

The Committee on Recent Economic Changes tells America as a whole what we've long known, and what a large number of building contractors have experienced. And that is, Good Hardware—Corbin saves money in installation, cuts down selling costs and gives the buyers the "good taste" they demand.

Yes, Mr. Hoover, you and your Committee are *right* about hardware.

Good Buildings Deserve Good Hardware



P. & F. CORBIN SINCE 1849 NEW BRITAIN CONNECTICUT

The American Hardware Corporation, Successor

New York

Chicago

Philadelphia

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



COPPER—of course

... for the purpose of gutters and downspouts is to *protect* the house . . . and only a rustless metal can give *permanent* protection. With Chase Copper* gutters and downspouts, there'll be no leaks to stain walls, to wash out plantings—no costly renewals later on.

Copper, Brass and Bronze, have had a lot of publicity. The home-buying public expect the protection of rustless materials—such as Alpha Brass pipe, screen cloth of Bronze, leaders and gutters of Copper—all of them rustless products guaranteed by Chase.

* Chase Copper Leaders and Gutters are made from full-weight, honest-gage, pure Chase Copper. Each length is plainly marked "16 oz. copper"—and the Chase-mark guarantees satisfactory quality. And to make the installation rustless *throughout*—use nails and hangers of Chase Copper.

CHASE BRASS & COPPER CO.

— INCORPORATED —

HOME OFFICE • WATERBURY, CONNECTICUT

And thirteen complete Warehouse Stocks in the following cities:
New York • Boston • Newark • Philadelphia • Baltimore • Cincinnati
Cleveland • Detroit • Chicago • St. Louis • New Orleans • Los Angeles
San Francisco. (Also Branch Offices in Rochester, Pittsburgh and Dallas.)

CHASE COPPER LEADERS & GUTTERS



The Mark that Identifies Good
Brass and Copper Products

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



"Tree-Mark"

GUARANTEED LUMBER



This "Tree-Mark" symbol stamped on a piece of lumber is your guarantee that the quality indicated thereon by the marks of the expert grader is correct . . . that the lumber is carefully manufactured "American Standard Lumber from America's Best Mills."

★★★★★★★★★★★★★★★★★★★★



helps you
Build...
helps you
Sell...

THE new "Tree-Mark" GUARANTEED trade- and grade-marked lumber will eliminate risk and uncertainty in building, because you *know* definitely that you are using exactly the grade of lumber you need for each purpose . . . you get just what you pay for.

"Tree-Mark" lumber also helps you sell, for you can say, "I guarantee the lumber in this house. I know that it is *right* for its purpose."

The National Lumber Manufacturers Association guarantees to the dealer that the lumber bearing its "Tree-Mark" is of the quality indicated thereon by the official marks of the expert grader—that it is carefully manufactured "American Standard Lumber from America's Best Mills."

Know the Lumber You Use

Look for the "Tree-Mark" on the lumber you use. If your lumber dealer cannot supply you, send us his name and address.

If you want to know all about "Tree-Mark" lumber, write for the valuable free booklets "Taking the Mystery Out of Lumber Buying" and "Transformation from An Old House to a New Home."

**NATIONAL LUMBER
MANUFACTURERS ASSOCIATION
WASHINGTON, D. C.**

Offices in New York, Boston, Pittsburgh, Indianapolis, Chicago, Minneapolis, Kansas City, Memphis, New Orleans, San Francisco



Mail Coupon Today

★★★★★★★★★★★★★★★★★★★★

National Lumber Manufacturers Association
Dept. 4756, Transportation Bldg., Washington, D. C.

Gentlemen: My dealer does not carry "Tree-Mark" lumber. His name and address:

Name

Address

Please send me a free copy of "Taking the Mystery Out of Lumber Buying" () "Transformation from an Old House to a New Home." ()

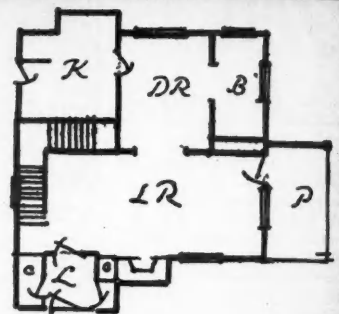
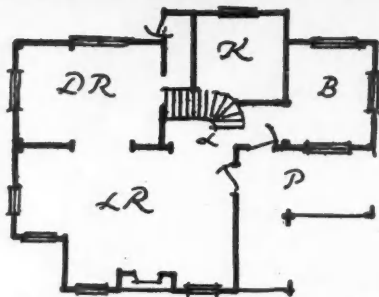
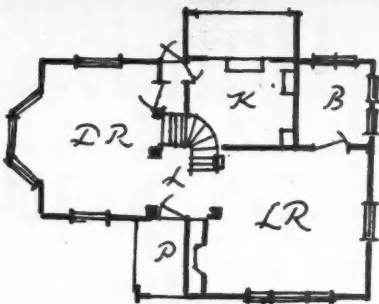
Name

Street

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

★★★★★★★★★★★★★★★★★★★★

.....No matter
what design is wanted



Steel Framing is adaptable to any individual requirement..

DON'T get the idea that "Steel Framing" means only standardized designs in home building. For it doesn't. This modern method of erecting homes of skyscraper construction is just as flexible, just as obedient to the architect's pencil, as the old-fashioned way of using ordinary material. But, the similarity ends there.

Steel provides the great strength and rigidity of "Steel Framing." All structural members are made up from the original plans and delivered to the building site cut to fit, ready for quick and easy erection with ordinary tools. There can be no warping or shrinking in such a framework. No sagging or settling to cause plaster cracks. This is permanent home construction, fireproof and windproof.

A home built with "Steel Framing"—and built exactly as the owner wants it in design and room arrangement—is far more valuable because it has all of the construction advantages put into giant skyscrapers.

Write for complete information.

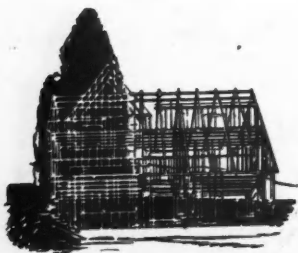
STEEL FRAME HOUSE CO., OLIVER BLDG., PITTSBURGH, PA.

Subsidiary of McClintic-Marshall Corporation

STEEL FRAMING

THE MODERN METHOD OF HOUSE CONSTRUCTION

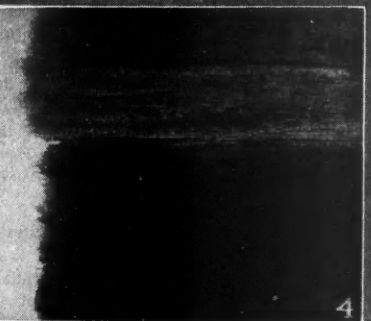
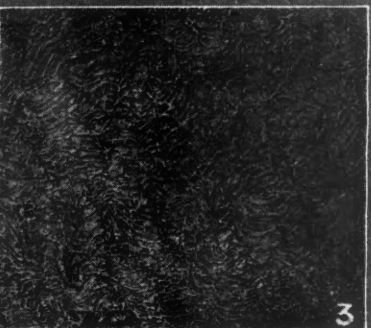
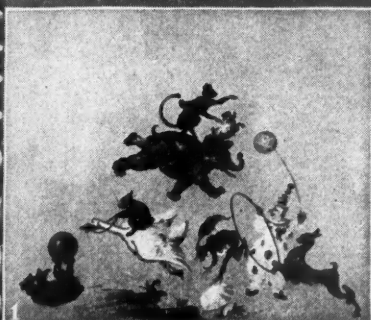
FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



If you are near Philadelphia, Lancaster, Toledo, Columbus, Indianapolis, Syracuse or Rochester, see the Steel Frame Homes now being erected. Newspaper announcements in these cities give complete details.

SANITAS

MODERN
WALL COVERING



THERE is really no end to the diversified decorative effects obtainable with Sanitas Modern Wall Covering.

While many users hang Sanitas just as it comes in the roll, others use Sanitas as a base for applied decorations such as murals, plastic materials, graining, marble effects and hand decorations.

Sanitas makes an ideal base for costly decorations because it prevents walls and ceilings from cracking and injuring the decorated surface.

Sanitas in ready-to-hang styles, comes in a wide range of colors, styles and finishes for every room. Easily cleaned with a damp cloth.

See the complete line in the Sanitas Sample Book. Write on your letterhead and mention your wholesaler's name.

The Standard Textile Products Co.
320 Broadway Dept. 51 New York

*Illustrations at left show:
1. Hand decoration on Sanitas. 2. Mural decoration on Sanitas. 3. Plastic material applied on Sanitas. 4. Hand graining on Sanitas.*



Send for this Sample Book

INSULITE

the Wood-Fiber Insulating Board



A SIMPLE HOME TEST

that shows the superior efficiency of Insulite as a non-conductor of heat or cold.

FULL 1/2 INCH THICK—MEANS
12¹/₂% MORE
EFFICIENT INSULATION
 THAN ORDINARY 1/8 INCH BOARDS

OF COURSE YOU WILL USE INSULATION IN THAT HOME OR building job—whether it's new or being remodeled. The important thing is to use the strongest, most efficient and economical insulating board on the market.

Accurate scientific laboratory tests show that Insulite, full 1/2 inch thick, is 12 1/2% more efficient than ordinary 1/8 inch insulation boards.

Above is pictured a simple home test which conclusively shows the efficiency of Insulite. Put a cube of ice on a piece of Insulite over an automatic electric iron. See how long it takes the heat to go through Insulite and melt the ice. Make this same test with ordinary insulation boards and see the difference.

Furthermore, laboratory tests show that Insulite has much greater tensile strength than ordinary insulation boards.

Because Insulite is an all wood product chemically treated it is not subject to deterioration.

Our Engineering Department is at your disposal. Write now for free samples. Make the above test yourself.

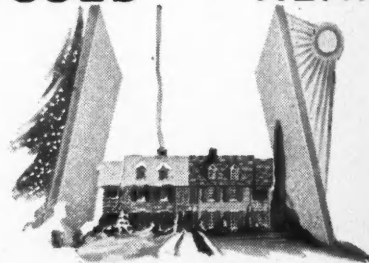
Insulate with

FULL 1/2 INCH THICK
 RESISTS
 COLD-HEAT-NOISE

INSULITE

the Wood-Fiber Insulating Board

PROTECTION
 AGAINST
COLD AND HEAT



Insulite makes buildings warmer in winter, cooler in summer, deadens noise and resists dampness. As sheathing, wall board, plaster base, roof insulation, attic lining and for many other uses, Insulite is a competent barrier against the outside elements.

Insulite saves money in fuel bills and, because it is in board form, costs little more than other forms of construction that are not insulated.

THE INSULITE COMPANY

1202 Builders Exchange, Dept. 12
 MINNEAPOLIS, MINNESOTA

"By popular demand....

"We use FACE BRICK...."

DAVID S. HAMMOND, PRESIDENT

E. C. MOREY, VICE PRESIDENT

R. M. LEE, SECRETARY

THOS. HAMMOND, TREASURER

GENERAL HOMES CORPORATION

UNION TRUST BUILDING

PITTSBURGH, PA.

EXECUTIVE OFFICE
ATLANTIC 2775MARSHALL MANOR OFFICE
FAIRFAX 9485

May 18th, 1929.

The American Face Brick Association,
130 North Wells Street,
Chicago, Illinois.

Gentlemen:

We use Face Brick for the exterior walls of the houses we build because experience has taught us that Face Brick Houses are easiest to sell and give greater satisfaction.

At first we used Face Brick up to the eaves with a substitute material in the gables but this type of construction did not prove satisfactory. Now, by popular demand, the entire exterior of each home we build is of face brick.

Only satisfied home owners make real boosters and person-to-person recommendation is of great importance to every builder. Face Brick construction assures us of satisfied owners.

Each home in our newest development, Marshall Manor, is sold long before completion because home seekers prefer the permanent beauty, substantial appearance, charm of color and slow depreciation obtained with Face Brick.

To us, Face Brick construction means immediate sales and boosting owners.

Yours very truly,

GENERAL HOMES CORPORATION

David S. Hammond
David S. Hammond, President.

Developers of MARSHALL MANOR, Brighton Road at Marshall Avenue, N. S., Pittsburgh, Pa.

*General Homes Corporation
finds that Face Brick means
immediate sales and satisfied
owners*

SEND
*for these
free books*

AMERICAN FACE BRICK ASSOCIATION,
2163 City State Bank Bldg., Chicago, Ill.

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

Please send booklets I have checked:

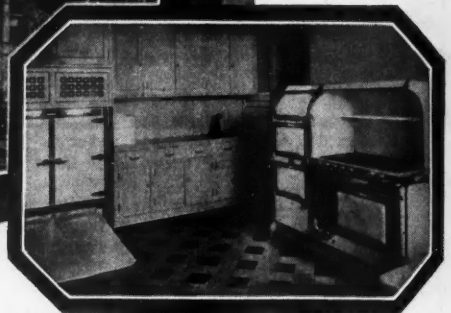
- ☐ The Charm of Face Brick Homes. Just issued—Features beautiful color illustrations of modern face brick homes, made from photographic originals. A big aid in helping you sell houses to prospective owners. Gives much new information that you need on comparative costs of face brick and other types of dwellings.
- ☐ A New House for the Old—Up-to-date book on remodeling.

Name.....

Address.....

City.....

State.....



The Costello Apartments, 6901 Oglesby Ave., Chicago, Ill. Paul Frederick Olsen, Inc., Chicago, Architects; Harold C. Costello, Chicago, Builder. Kitchens throughout equipped with handsome Quick Meal Gas Ranges with the Red Wheel. (Lower right) View of representative kitchen, showing Red Wheel Range as installed.

"There is Nothing BETTER!"

There is nothing better—once you install Lorain Red Wheel Gas Ranges in your apartments you can offer prospective tenants the utmost in modern cookery equipment.

There is nothing better—all-enamel finishes are attractive, durable, easy to keep clean; capacious ovens and efficient broilers produce deliciously cooked foods; the Red Wheel gives hours of leisure to the home-maker, watching the baking while she is miles away; hundreds of sizes and styles to choose from.

There is nothing better—ten years of continuous advertising in well-known national magazines have made these gas ranges best known to women everywhere; over 2800 schools and colleges use these ranges to instruct classes in cookery.

There is nothing better—six famous lines to select from: *Dangler, New Process, Quick Meal, Reliable, Clark Jewel, Direct Action.* All are made by American Stove Company. See Sweet's Catalog, 23rd Edition. Pages C4009-4018.

For data regarding models to meet unusual requirements write to

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

**UNLESS THE GAS RANGE HAS A
RED WHEEL
IT IS NOT A
LORAIN**

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



The Merrick House built in 1799 at Hallowell, Maine, offers a suggestion for modern homes of pine.

A Colonial Home of Pine

ARCHITECTS and builders who have shown the charming colonial cottage reproduced here to their clients, find many of them interested in just such a quaint, livable dwelling. They are delighted to find that they can possess the enduring beauty of a pine home with gleaming white clapboards, green shuttered windows even a paneled living or recreation room — and at a comparatively reasonable price.

In specifying Shevlin Pine you may be sure you are giving your clients a building material of enduring value and low upkeep cost. The oldest homes in America today were built of pine and have proven their economy through centuries of service.

There is a plentiful supply of Shevlin Pine in five varieties — Shevlin Northern White Pine, Shevlin California Sugar Pine, Shevlin California White Pine, Shevlin Norway Pine and Shevlin Pondosa Pine. You will find Shevlin Pine at leading lumber dealers always smoothly milled, carefully seasoned and rigidly graded.

For data on Shevlin Pine — its uses, its physical properties and allowable stresses — write for booklet, "Specify Shevlin Pine."

Shevlin, Carpenter & Clarke Company
903 First National-Soo Line Building, Minneapolis, Minn.

Chicago Sales Office: 1866 Continental & Commercial Bank Bldg.; San Francisco Sales Office: 1030 Monadnock Bldg.; Toronto, Ontario, Sales Office: 606 Royal Bank Bldg.; Sold in New York by N. H. Morgan, 1205 Graybar Building.

SHEVLIN PINE



HERE is presented a Crane idea for bachelor apartments and residence hotels . . . a bedroom-bath. By placing the *Elegia* lavatory in the bedroom, the *Tarnia* tub in a wall nook with folding panels, the *Saneto* toilet in a small enclosure, space is saved. And the well-designed sage green fixtures become a part of the furnishings and decorations. With ample closet space, the only furniture needed is a bed, a chair, and

a bedside table. With an adjoining living room a two-room suite is created of great beauty and economy. Many owners of hotels and apartments will be interested in such an arrangement. Contractors, building hotels, apartments, homes, or business buildings, find it helpful to keep informed of the steady stream of Crane plumbing ideas. Write for the new book of rooms in color, *Bathrooms for Out-of-the-Ordinary Homes*.

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 • 23 W. 44th St., New York • Branches and sales offices in one hundred and eighty cities

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CLOSET-SPACE AND WINDOWS...

*the first two things a woman looks for
in a home*

It's the wife that has to live in the home the greater part of the time. When the family inspects your apartments, or your investment-residence, it is usually the woman who has the final word as to whether they move or not.

Women like beauty and convenience. Lupton Residence Casements of Steel have been designed with the ladies in mind. Slim cross-pieces dividing each pane create an effect of charming delicacy. Lupton Casements save housework too. Both sides of the window can be cleaned from within the room. They operate easily and will not warp

or stick. In summer, the casements can be swung open to catch the faintest breeze. In winter, they shut snug and tight against bitter winds and damp weather.

Smart, convenient, modern — Lupton Casements add attractiveness to your investment-building. Quantity manufacture has brought prices down to meet the building budgets of even the smaller operators.

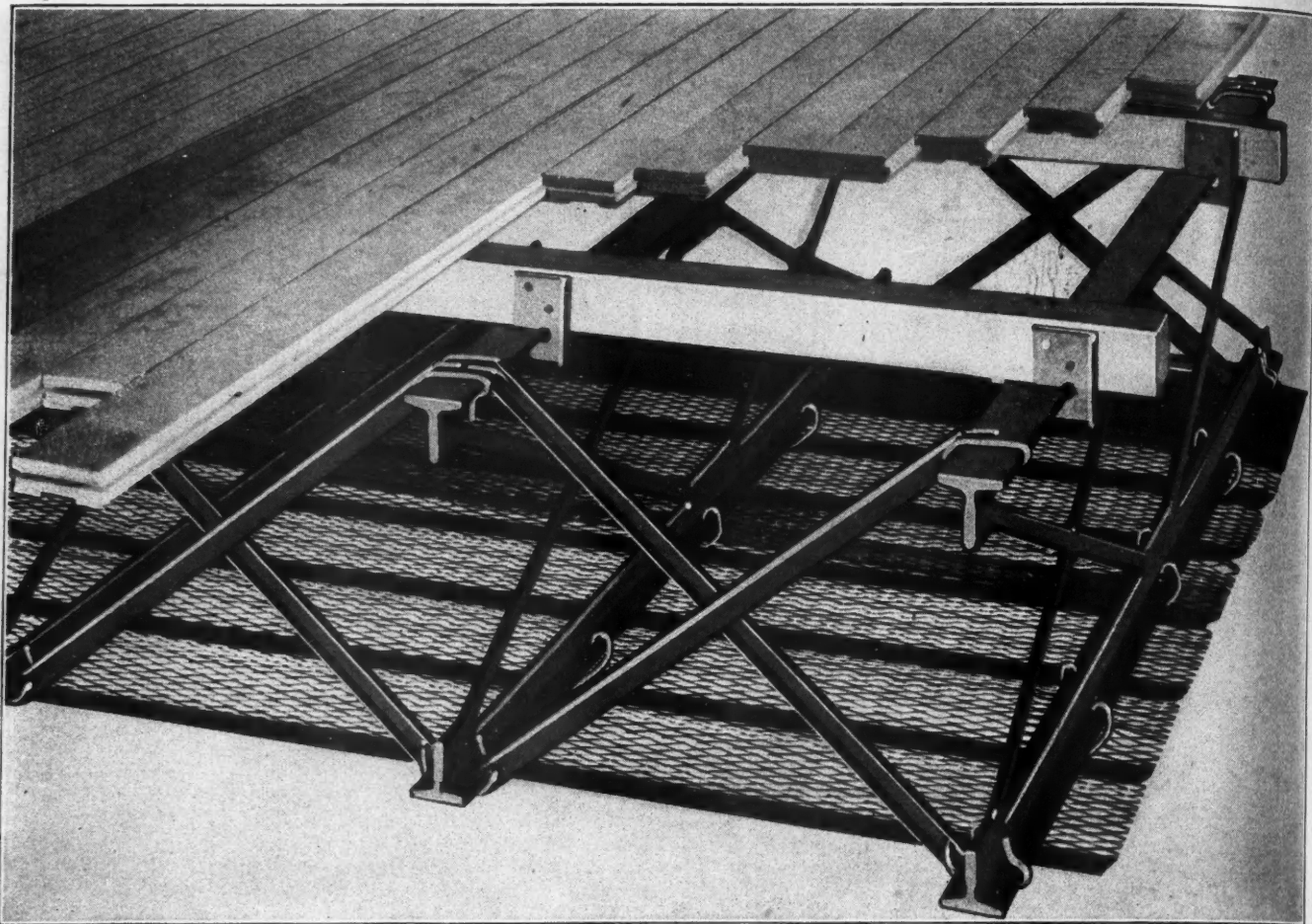
Have us explain how Lupton Steel Windows will help protect your investment. When you write, specify type of building you plan to erect, and we will send

you the catalog you need.

David Lupton's Sons Co., 2203
E. Allegheny Ave., Phila., Pa.

L U P T O N
WHERE STEEL IS FUSED WITH SINCERITY

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



The Old Wood Floor and Roof Construction Modernized - Improved

The old, old principles behind wood floor and roof construction remain—but Kalman makes it possible for you to use modern, fire-safe materials.

Kalmantruss Joists take the place of wood joists, providing a steel member in place of the wood.

Kalmantruss Rigid Bridging acts as wood cross-bridging, but is more positive and dependable.

Using these products in conjunction with Kalmanlath and the distinctive line of Kalman accessories produce modern, fire-safe floor and roof construction that is easy to erect.

KALMAN STEEL COMPANY

KALMAN STEEL

**MODERN. FIRE-SAFE
BUILDING PRODUCTS**

Atlanta
Baltimore
Boston
Buffalo

Charlotte
Chicago
Columbus
Dayton

Detroit
Houston
Kansas City

Milwaukee
Minneapolis
Newark

New York
(Export Office—New York)

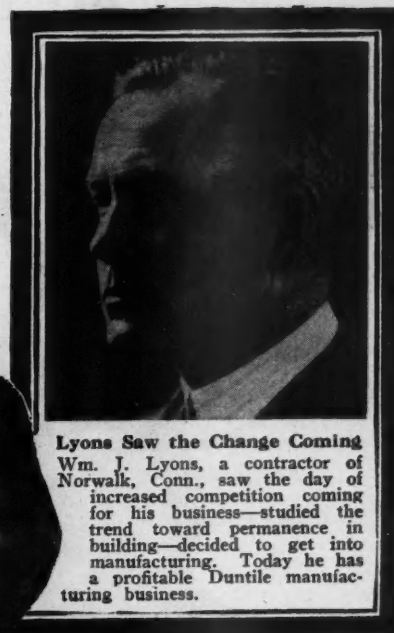
New Haven
Niles
Philadelphia
Pittsburgh

St. Paul
Syracuse
Youngstown
Washington, D. C.

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

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Lyons Saw the Change Coming
Wm. J. Lyons, a contractor of Norwalk, Conn., saw the day of increased competition coming for his business—studied the trend toward permanence in building—decided to get into manufacturing. Today he has a profitable Duntile manufacturing business.

Get Into Manufacturing

—That's where the Big Profits are Made

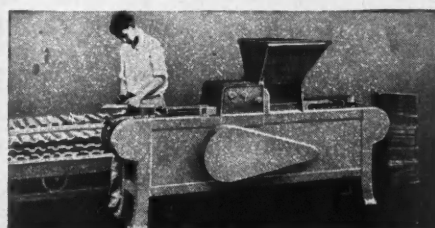
The contractor who can supply the new and ever growing demand for permanent construction at low cost is truly "sitting on top of the world." And if he is in a position to manufacture a large portion of his building materials, and make a double profit by selling the surplus, nothing can stop him!

That is why a \$1700 investment in Allentown five years ago is worth \$100,000. Why a plant in St. Louis did over \$100,000 worth of business in 1928. Why two Kansas City contractors multiplied their investment 33 times! Why Lyons, shown above, is set for life.

These men looked ahead. They saw the trend toward permanence, greater today than ever, and constantly growing. They saw that Duntile meets

take advantage of changing conditions—how you can hold the whip hand over competition. Use the coupon. Act now.

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



OVER \$50.00 A DAY PROFITS!

Roof a day capacity, and over \$50.00 profits—that's what this mechanical wonder can do for you, making Duntex, "The World's Most Beautiful Roof." Territory rigidly protected. Un-

limited sales and manufacturing co-operation. A new roof tile in 12 colors. Beautiful and permanent beyond any other. Low cost. Tremendously profitable. Get the facts.



this exacting demand—that Duntile has everything—beauty, strength, insulation—that it is a wall for every purpose—that its cost, laid in the wall, is no more and often less than good frame. Get these facts! Use the coupon.

We furnish complete equipment, start you in operation for making this super product, provide you with sales and advertising helps. Start in a small way, or as large as you like. Learn what a Duntile plant will earn for you supplying the building trade in your city.

Look ahead. Get the book showing how you can

Write NOW for Free Books

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

Gentlemen:

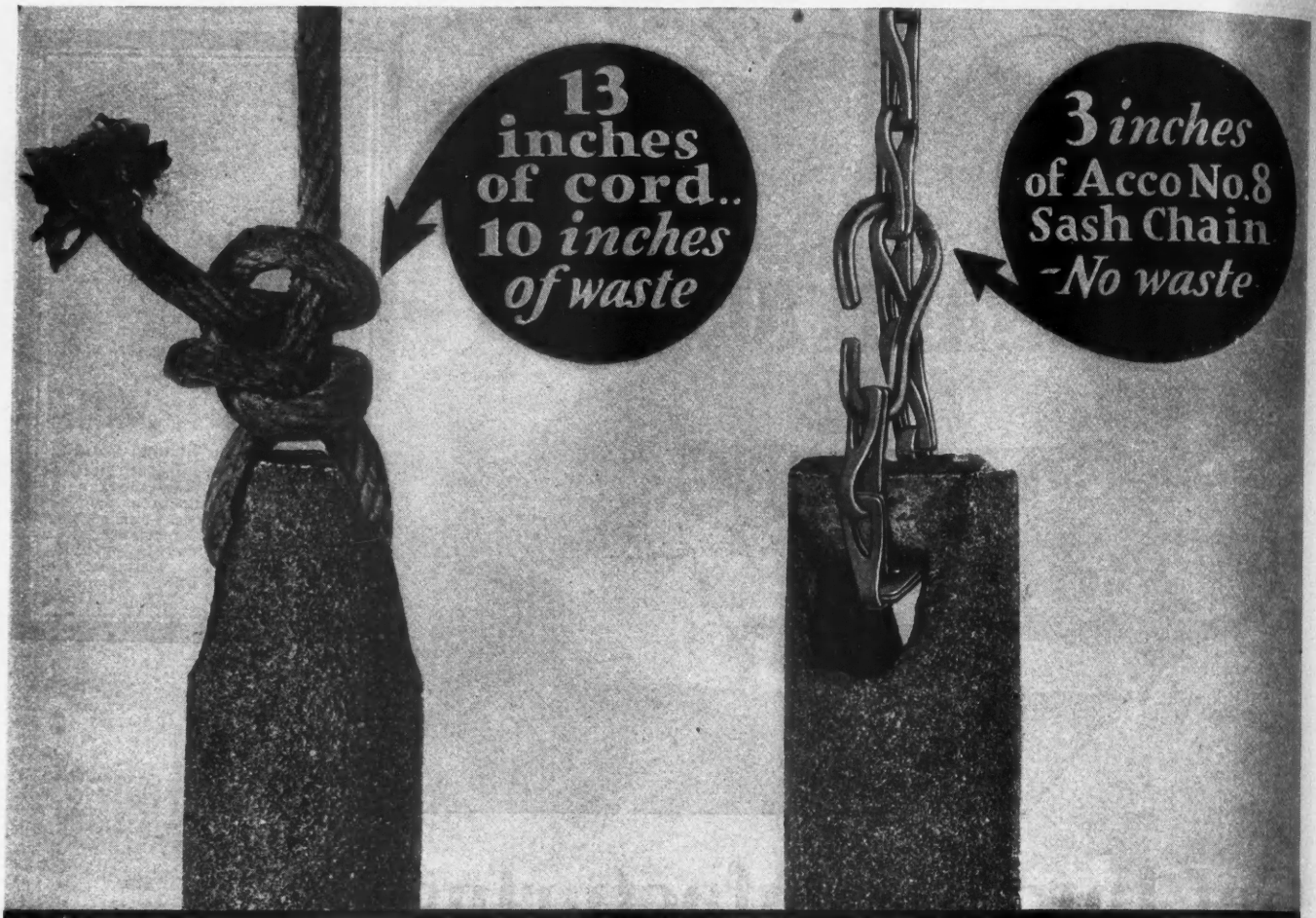
- ☐ Show me through your book, "Basic Facts," how I can start a profitable Duntile Manufacturing Business in this locality.
- ☐ Send me complete information on Duntex, "The World's Most Beautiful Roof," and how it offers profits of \$50.00 a day.

Also send sample ☐ of tile.

Name.....

Street..... Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



—and also a 25% labor saving with ACCO No. 8 Sash Chain

Try ACCO No. 8 Sash Chain next time. You will find that *four* windows can be hung in the same time that it takes to hang three windows with cord. *One hour in four saved.*

You will find, too, that 100 feet of ACCO No. 8 Sash Chain will hang, on an average, seven windows. (100 feet of cord hangs only five windows, on account of knot wastage.)

These savings are worth making, plus the assurance of a better, longer life job. ACCO No. 8 Sash Chain is *copper-bearing steel*—fireproof—will not rot or fray—cannot stretch or shrink.

**ACCO No. 8 Sash Chain operates
perfectly over any cord pulley**

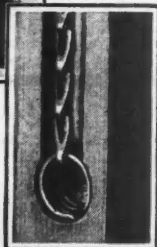
It is not necessary to specify special pulleys. ACCO No. 8 Sash Chain is made to operate with mechanical perfection over regular semi-circular grooved pulleys.

**AMERICAN CHAIN COMPANY, Inc.
BRIDGEPORT, CONNECTICUT**

In Canada: Dominion Chain Company, Limited, Niagara Falls, Ontario
District Sales Offices: Boston Chicago New York Philadelphia Pittsburgh San Francisco



**Sash is
anchored with
simple coil**



From roughing in to trimming out right on the job ~

On every building operation there is the usual rough framing—such as studs, rafters, joists, bridging, sheathing and other heavy work and, in addition, there are always door frames, window sash, cupboards, shelves, closets, special frames, stair stringers and other odd jobs that require attention.

You can handle *all these items right on the job* with one machine—the DeWalt Wonder Worker—just as cheaply as the mill and without having to wait for delivery.

Such is the *extra measure of usefulness* which makes the DeWalt so popular and so profitable on frame or brick buildings, row and development operations.

Let us send you more complete particulars or arrange for a demonstration on your job.

DeWalt Products Corporation

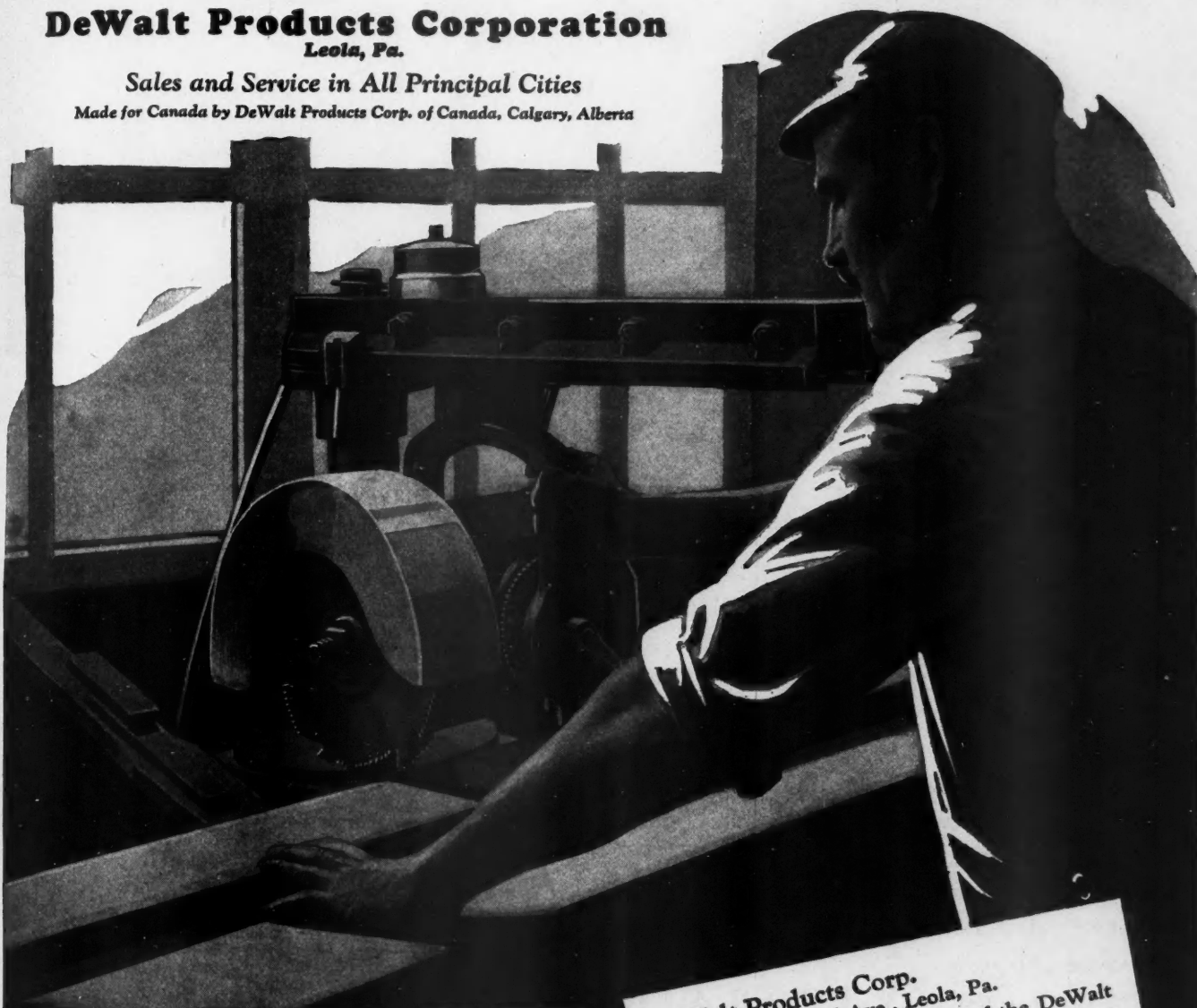
Leola, Pa.

Sales and Service in All Principal Cities

Made for Canada by DeWalt Products Corp. of Canada, Calgary, Alberta



Complete with motor, table, saw blade, safety guard, switch and connecting cord



DEWALT

Wonder Worker

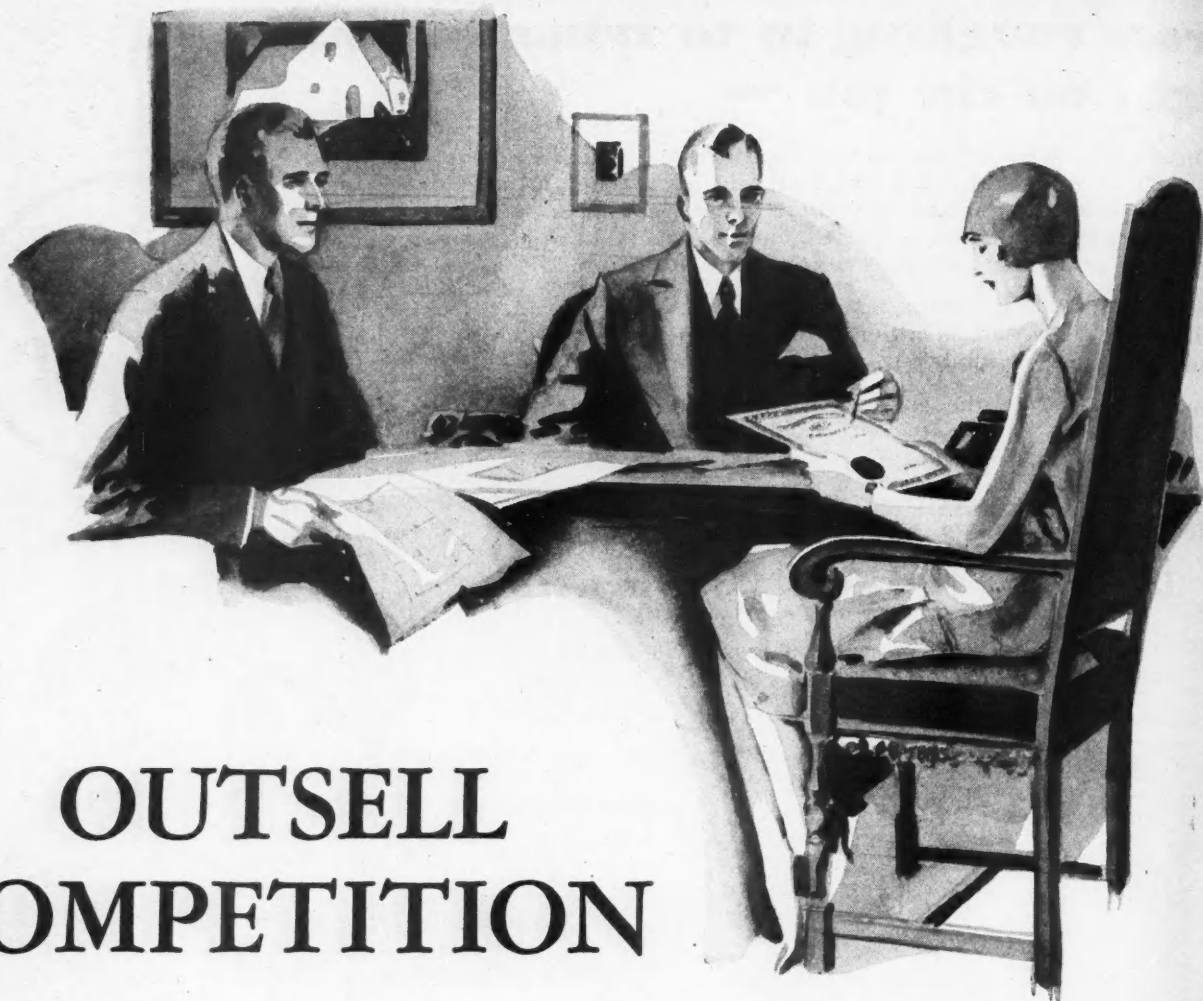
The Economy Wood Worker

DeWalt Products Corp.
766 New Holland Ave., Leola, Pa.
Please send me full particulars of the DeWalt Wonder Worker—the all-around wood-working machine.

Your Name.....

Firm Name.....

Address.....



OUTSELL COMPETITION

by guaranteeing year 'round comfort

Holland Aire-U-Well Heating will help you close sale after sale. Make the Holland name and Holland advertising work for you. Outsell competition! Guarantee year 'round comfort—we assume all responsibility. The modern Aire-U-Well system has an electric power unit that forces warmth to every corner of the home during winter.

In summertime the airplane-type propeller gives a cooling

effect equal to several electric fans in every room. Heating response is immediate—satisfaction lasting. Every Holland is especially designed for the home it serves and installed by factory-trained men under factory supervision. We guarantee every part and feature with an iron-clad written bond that protects you and your buyer. Get the

facts. Learn how Holland can help you sell more homes and keep them sold.

HOLLAND

VAPORAIRE HEATING

USE THIS **COUPON**
HOLLAND MEN KNOW WHO PLANS TO
BUILD OR BUY IN YOUR NEIGHBORHOOD
Get the facts. There's no obligation.



HOLLAND FURNACE COMPANY, HOLLAND, MICH.

Without obligation on my part, please

☐ Have a Holland man call

☐ Send me literature

Name _____

Address _____

City _____

State _____

AB-1

A Corner in WALL STREET

Architects:
DELANO & ALDRICH
New York.

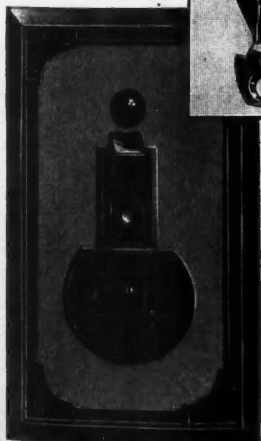
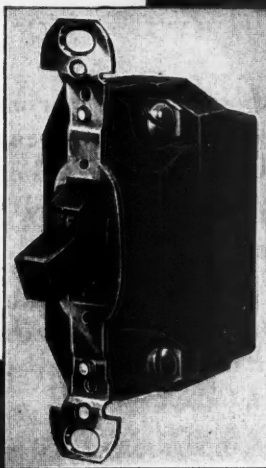
Builders:
STARRETT BROS. Inc.
New York

Engineer:
CLYDE R. PLACE
New York.

H&H

No. 1611
Enclosed
Tumbler
Switches

No. 3974
Switch &
Receptacle
Combinat's.



THE WALL & HANOVER BUILDING

CORNER WALL and HANOVER STS., NEW YORK

In this job WALTER H. TAVERNER CORPORATION, Electrical Contractors, installed 678 Enclosed Base Tumbler Switches (H&H No. 1611); 1060 Switch-and-Receptacle Combinations with Bakelite Plates (H&H No. 3974); 1025 Duplex Convenience Outlets (H&H No. 1437); 360 Single Convenience Outlets (H&H No. 1435); more than 2000 Plates and miscellaneous H&H Wiring Devices.

All told, a building of such merit and magnitude as to impose most careful selection of Wiring Devices. Which results, very generally, in H&H goods exclusively in the modern marts of business, big and little.

HART & HEGEMAN DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Father and Son

ROOF THEIR HOMES WITH *Winthrops*



HOME OF SON



THE owners of these attractive and substantial houses are R. S. and Royal N. Thompson, a father and son of Omaha, Nebraska.

When they built these two fine homes in the exclusive Country Club district of Omaha, they selected—from all the roofings they knew—Winthrop Tapered Asphalt Shingles. They wanted weather-sealed roofs of individuality. On the father's house is the Greenfield Blend and on the son's is the Slatefield—laid thatched effect. On both roofs there is a color blend particularly suited to the house itself and both have the advantages of Winthrop permanency.

There are twenty colors—solid and blended—from which to make selection. All are permanent—and non-fading, the natural colors of the crushed slate surfaces. The thick butts lie weather tight and double the wearing



FATHER'S HOUSE

thickness where exposure to weather comes. Winthrops are fire-resisting—they bear the Class C Label of Underwriters' Laboratories. Winthrops are unequaled over old roofs.

Free Samples

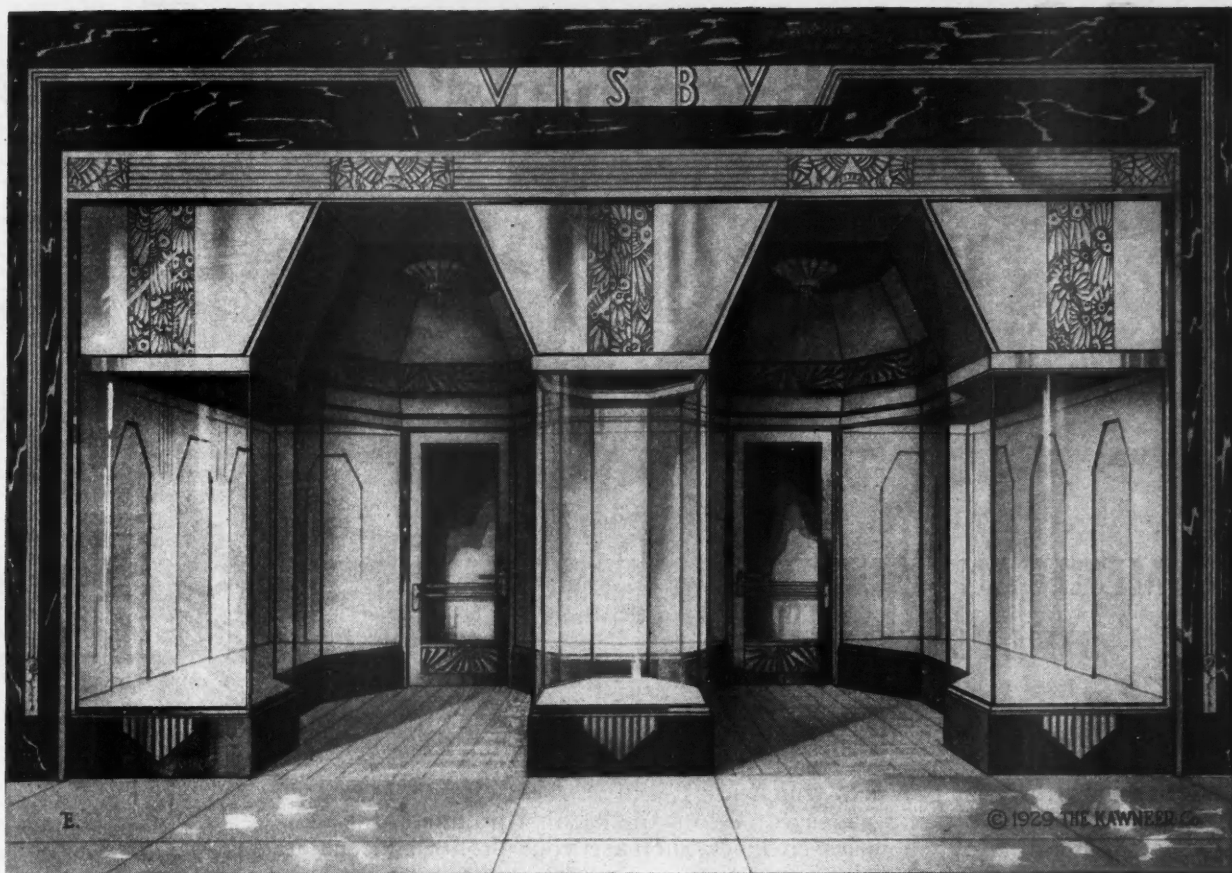
Most good lumber dealers carry Winthrops but we will gladly send you a full size sample—in solid color or one of our popular blends. Write to us, today.

BECKMAN-DAWSON ROOFING COMPANY
1632 Brooks Building, 223 W. Jackson Boulevard, Chicago, Illinois
Factories at Chicago, Detroit and Lockport, N. Y.

 **Winthrop**
Tapered Asphalt Shingles

Argotile (slate surfaced) Roofing, Supreme (mica surfaced) Roofing, Wearproof (talc surfaced) Roofing

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Contractors!

It will cost you nothing to investigate the opportunities of this great, uncrowded field of

STORE FRONT SPECIALIZATION

Hundreds of interested prospects. Let Kawneer's years of specialized experience assist you to better and more profitable business.

MAIL THE COUPON FOR FREE BOOK OF MODERN STORE FRONT DESIGNS

Kawneer

BRONZE
STORE FRONTS



THE KAWNEER COMPANY, 1726 Front St., Niles, Mich.
Send book, "Modern Store Fronts for Better Display."

Name.....
Kind of Business.....
Address.....
City.....
State.....

CONSULT AN ARCHITECT - THE SERVICE IS VALUABLE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Subscribers' Service Page

How The AMERICAN BUILDER HELPS YOU

The habit of reading AMERICAN BUILDER advertising is educational. Part of the purpose of the AMERICAN BUILDER is to give names and other valuable information concerning the best products which are useful in the Building Industry. Listed on the advertising pages you'll find the reliable products, the new ideas, material, etc., which lessen labor, increase your profits and enable you to lead the field in your community.

Products Advertised in The American Builder Should Have Your Preference

A manufacturer does not spend great sums of money advertising a product unless he has faith that it is of exceptional value and use in its field. When you see an article extensively advertised—you can bank on its value.

The AMERICAN BUILDER Magazine itself has maintained a high standard of service and integrity for twenty-three years. During all this time it has never knowingly taken an advertiser whose product was not all their advertisement claimed for it. Therefore, you can buy any AMERICAN BUILDER advertised product with a firm conviction that it is as represented.

Do You Get Your Share of the Business of Your Community?

One or more new machines, the use of a new material or an improved method of estimating may be just what you need to increase your profits over

last year. If you are interested in any kind of building materials, contractor's equipment and machinery, power shop equipment, heating systems, plumbing supplies, water supply systems, lighting systems, elevators, school, church or theater equipment, farm building equipment, building hardware, home conveniences or anything that is used in constructing or equipping any kind of building—we will help you get all information.

Keep Informed

One method of keeping vital information at your finger tips is to maintain a complete file of catalogs.

FREE TO AMERICAN BUILDER READERS

If there is some article which you want and lack the proper information regarding it, print or write your name plainly in the coupon below, list the articles and check your occupation. We urge you to take advantage of this great opportunity to procure valuable information.

AMERICAN BUILDER, 105 W. Adams St., Chicago, Ill.

A.B. 8-29

Gentlemen: Please put me in touch with manufacturers whom you know to be reliable and can furnish goods promptly. I am in the market for the following items:

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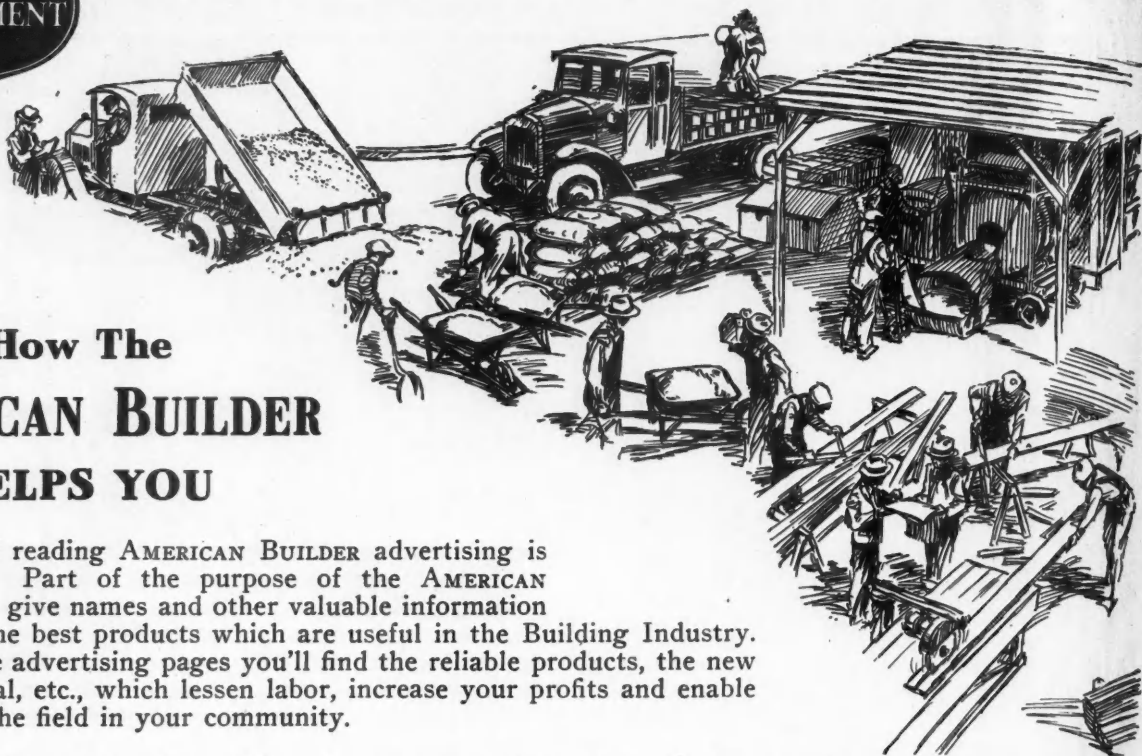
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More Practical . . .

More Convenient kitchens for your houses

Because You Design Them

with a Curtis Miniature Kitchen Set



Give the feminine home-seeker a real thrill when you show her the kitchens of your houses. The new Curtis miniature kitchen idea makes it possible for you to take a hand yourself in kitchen designing. For all Curtis kitchen units in all sizes are reproduced in miniature, ready to be assembled in numberless combinations.

Will you have a unit for pots and pans beside the stove—or near the sink? A broom closet (with that handy concealed ironing board) near the door—or in the corner? Storage units over the sink—with extra cabinets that go to the ceiling? And be sure to put in one of those fascinating special Curtis units with sugar bin, flour bin, and a cutlery drawer that tilt forward. Have the units “turn a corner” (as in illustration), making every inch of space count.

Curtis units come completely set up, ready to put in place . . . And when you know the cost, you’ll know that it “pays” to give women what they want.

Your Curtis dealer has a complete set of miniature Curtis units. He will be pleased to help you design attractive and convenient kitchens for your houses—right on your office table.

Free Planning Service

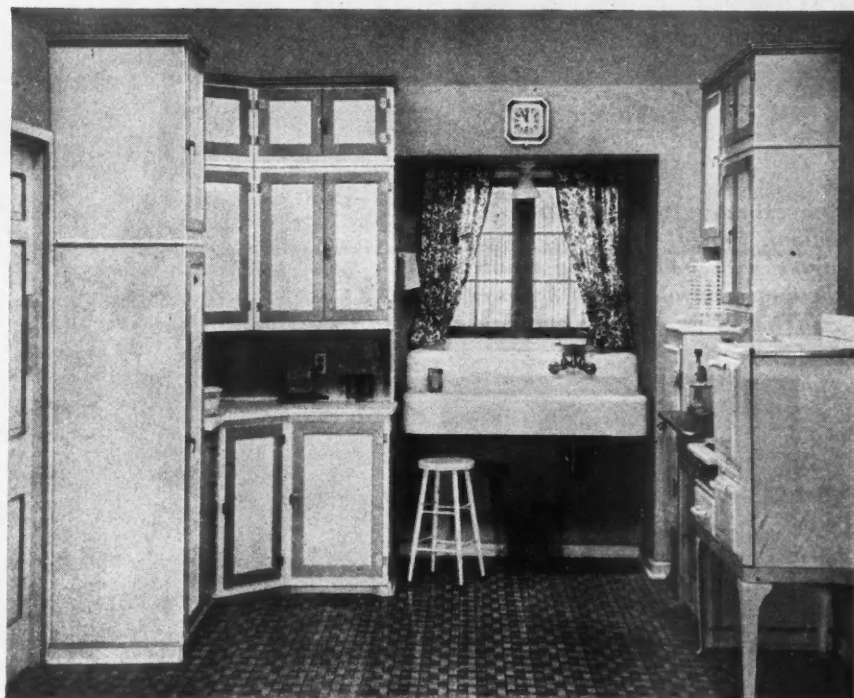
If you wish, you can at any time avail yourself of our free planning service. Simply send us plans of your kitchens, showing all dimensions and location of doors, windows, sinks, etc. We will send you sample layouts giving our suggestions for the use of Curtis units.

For Faster Sales . . . Quicker Rentals



The Rochambeau Mantel

Arouse favorable impressions in the minds of prospects with attractive woodwork throughout. The Curtis line includes a wide variety of designs and patterns from which you may choose—authentic reproductions of Early American and English entrances, mantels, stairwork—everyday items of woodwork such as windows, doors, frames, trim, kitchen units and a host of others.



Write for free literature describing Curtis kitchen units.

The Curtis Company Service Bureau,
933 Curtis Building, Clinton, Iowa

Representing

Curtis Companies, Inc., Clinton, Ia.; Curtis Bros. & Co., Clinton, Ia.; Curtis & Yale Co., Wausau, Wis.; Curtis Sash & Door Co., Sioux City, Ia.; Curtis, Towle & Paine Co., Lincoln, Nebr.; Curtis Door & Sash Co., Chicago, Ill.; Curtis-Yale-Purvis Co., Minneapolis, Minn.; and Curtis, Towle & Paine Co., Topeka, Kan.

Visit Curtis Woodwork, Inc., Display Rooms and Sales Office, Room 201, 9 East 41st Street, New York City. Chicago Display Rooms, Curtis Door & Sash Co., 1414 South Western Avenue, Chicago, Illinois.



The door to the broom closet serves a double purpose. Just release a catch, and down comes a sturdy ironing board adjustable to the proper height.

1865
CURTIS
WOODWORK

This trade-mark appears only on Curtis Woodwork and no item of woodwork that does not bear this mark is genuine Curtis Woodwork. For your own protection be sure this mark is on each piece.

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Please send me free literature illustrating and describing Curtis kitchen units, with complete information. Also send information on

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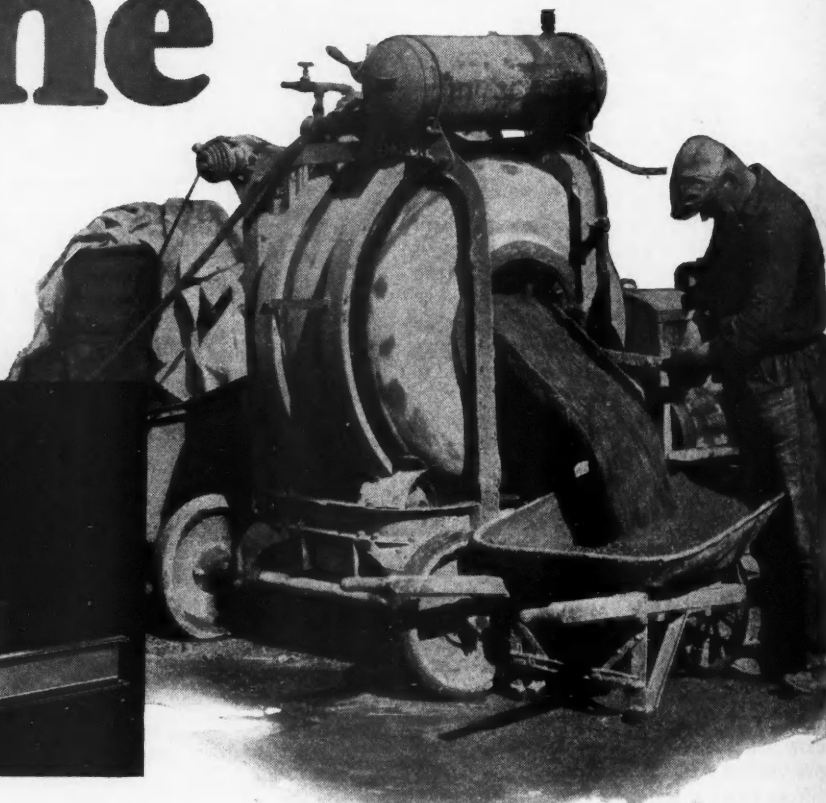
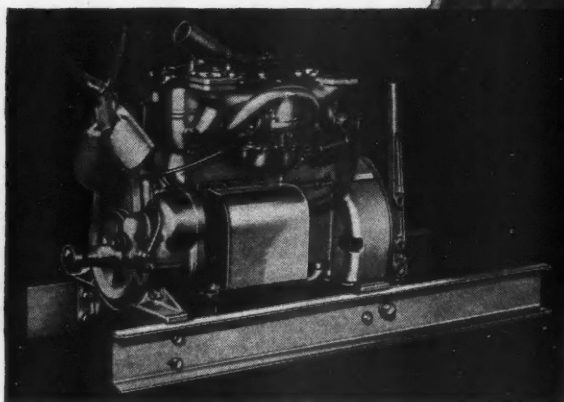
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5-S Dandie with 4 cyl. engine

Four cylinder, four cycle, 6 to 10 H. P., radiator cooled, high compression type engine with ball bearing crank shaft, hot spot manifold! Find a power plant like that on another one bagger!



FIND another mixer in the Dandie price range with all the outstanding features the Dandie gives you — worm gear drive on roller bearings in oil bath — high speed charging skip that needs no pounding — fast discharge that cuts off instantly—a rugged long

distance performer! And now smooth four cylinder power! Write for Dandie Catalog.

Dandie Mixers: 5-S, 7-S, 10-S

5-S single or four cylinder, 7-S two or four cylinder, 10-S four cylinder gasoline engine. Charging skip or low charging hopper and platform. Rubber tired or steel rimmed wheels. Comply with A. G. C. standards.

KOEHRING

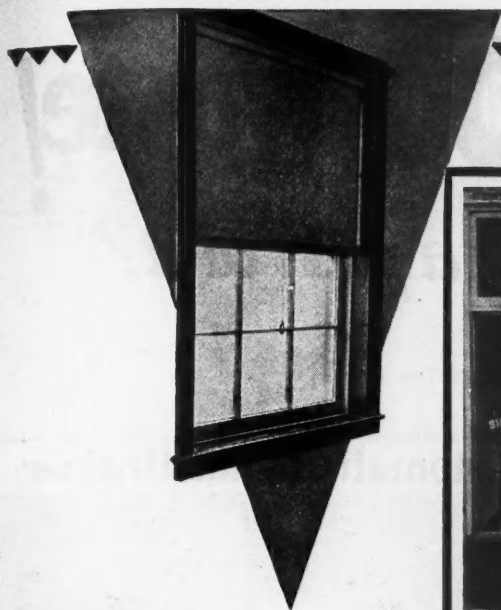
DANDIE

KOEHRING COMPANY MILWAUKEE, WISCONSIN
PAVERS, MIXERS—GASOLINE SHOVELS, PULL SHOVELS, CRANES AND DRAGLINES
Sales Offices and Service Warehouses in all principal cities
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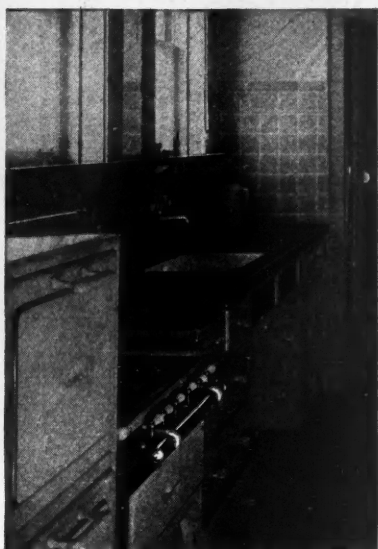


AS361-I

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A Beautiful *NEW* Material that **STANDS UP.**



FORMICA is a most attractive material for various building purposes which combines a number of qualities that were never available before.

The pictures show a store front bulk head, a window stool and a kitchen cabinet top all made with Formica surfaces.

The material has a gloss equal to glass, or a fine, dull rubbed finish; there are two marble patterns: Verd Antique and Belgian black and gold, five wood finishes, several solid colors, and three art moderne patterns.

It is almost inert chemically, does not spot with ordinary liquids including alcohol, gasoline, or cleaners of any kind. It is not brittle and will not break. It holds its gloss better than marble in the weather.

In short it provides a surface that will be free from maintenance and refinishing costs.

Write for samples and information

THE FORMICA INSULATION COMPANY
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FORMICA

for **BUILDING PURPOSES**

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A \$600,000,000 Waste!

Are you responsible for a part of it?

The annual loss in the United States due to rust is estimated at \$600,000,000. This figure is appalling—particularly when you realize that much of the loss is preventable by using equipment made from copper and its alloys.

Do you contribute to this waste by installing equipment that can rust—for service where it is constantly exposed to dampness?



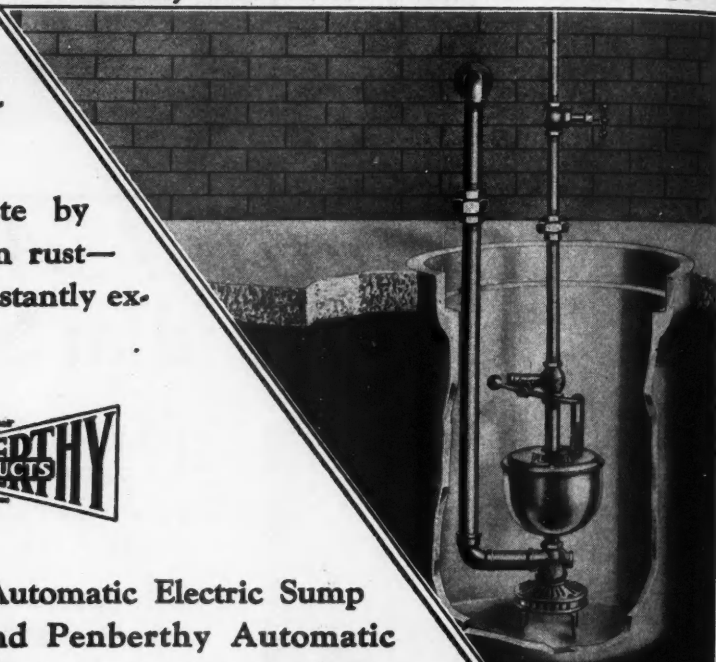
Penberthy Automatic Electric Sump Pumps and Penberthy Automatic Cellar Drainers cannot rust, because they are constructed of copper, brass and bronze throughout. Builders who install them keep their clients' dollars out of the rust pile.

The operation of Penberthy Sump Pumps and Cellar Drainers is thoroughly dependable and economical. There is a size and type for every drainage requirement.

The Penberthy Pumps are quickly available—they are carried in stock by the leading jobbers throughout the country.

Penberthy Automatic Electric Sump Pump

Penberthy Automatic Cellar Drainer



PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 **DETROIT** **CANADIAN PLANT WINDSOR, ONT.**

AMERICAN BUILDER



BERNARD L. JOHNSON, *Editor*

105 West Adams St., Chicago—30 Church St., New York City

Who Actually Builds the Home?

IT is a peculiar field we builders work in. Every citizen and his wife knows just a little about home building, and most think they could do it better than the professionals!

Ask any home owner and he will declare—"yes, I built that home"—when as a matter of fact he may have been only remotely connected with the enterprise. Nevertheless the owner-occupant always thinks *he* built it.

The real estate man who furnished the vacant lot and perhaps helped to arrange the financing thinks he built it. The dealer who supplied the lumber and building materials will say he built it.

The architect or designer says, "It's mine."

And the craftsmen who labored on the job naturally feel that they should have the credit.

* * *

Of course all of these men have contributed something to the final result; but none of them is the *real* builder, nor chiefly responsible for the form and substance of the completed structure.

The general contractor and builder is the man responsible for the successful outcome of the enterprise; and it is his judgment, knowledge and experience that determine what materials and equipment go into the job and how they are installed.

The professional builder is the man who can truthfully say, "I built that house"—but he is usually so busy planning, financing and building other homes that he doesn't have much time to talk.

* * *

Several million dollars have been spent by manufacturers during the past few years advertising to the general public their special types and brands of building materials, construction methods and home equipment. Although costly, these campaigns have served a useful purpose. They have been one of the important factors that have educated the taste and raised the home building standards of the American people.

These campaigns have built "consumer demand" and "consumer acceptance."

The professional men of the home building industry have taken advantage of many of these campaigns—where they have known about them—and have arranged their work along the lines recommended.

Our investigations among builders, both those building on contract and those building "speculatively" for sale, indicate that the big consumer advertising campaigns have created a market in very general terms for certain classes of materials and home equipment; but that it remains for the builder, *as the purchasing agent* and the responsible installer, to select the particular brand or make within that class of commodity which will best serve his purpose.

For instance, several of the kitchen cabinet manufacturers have done a great educational work advertising direct to the housewives through the popular magazines. They have made the women want kitchen cabinets and associated cases and cupboards built into their new homes. No home is modern or complete without its step-saving kitchen.

But the builders, acting as the purchasing agents for these women when building their new homes, know that there are on the market a dozen or more kitchen cabinets and case assemblies, any of which will satisfy this consumer demand.

* * *

We are not advocating here any policy of substitution, but simply calling attention to the fact that after all it is the *builder* who builds the house, who acts as purchasing agent for every bit of material and equipment that goes into it, and is responsible for its proper installation and satisfactory service.

No campaign to educate the general public to the merits of a building material or item of building equipment is complete until it includes a constructive message to the builders also.

No sales campaign can secure maximum results unless it lays its message before the real purchasing agents, the buying power in the building field, namely, the contractor-builders, and wins their sympathetic and cordial support.

During the past few years there have been many new offerings in materials, methods and equipment for homes and other buildings. Some of these have been real improvements; others have not proved out so well.

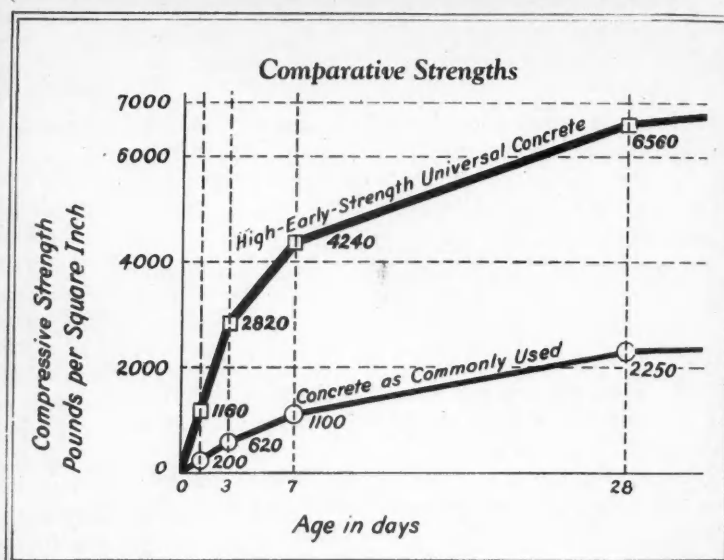
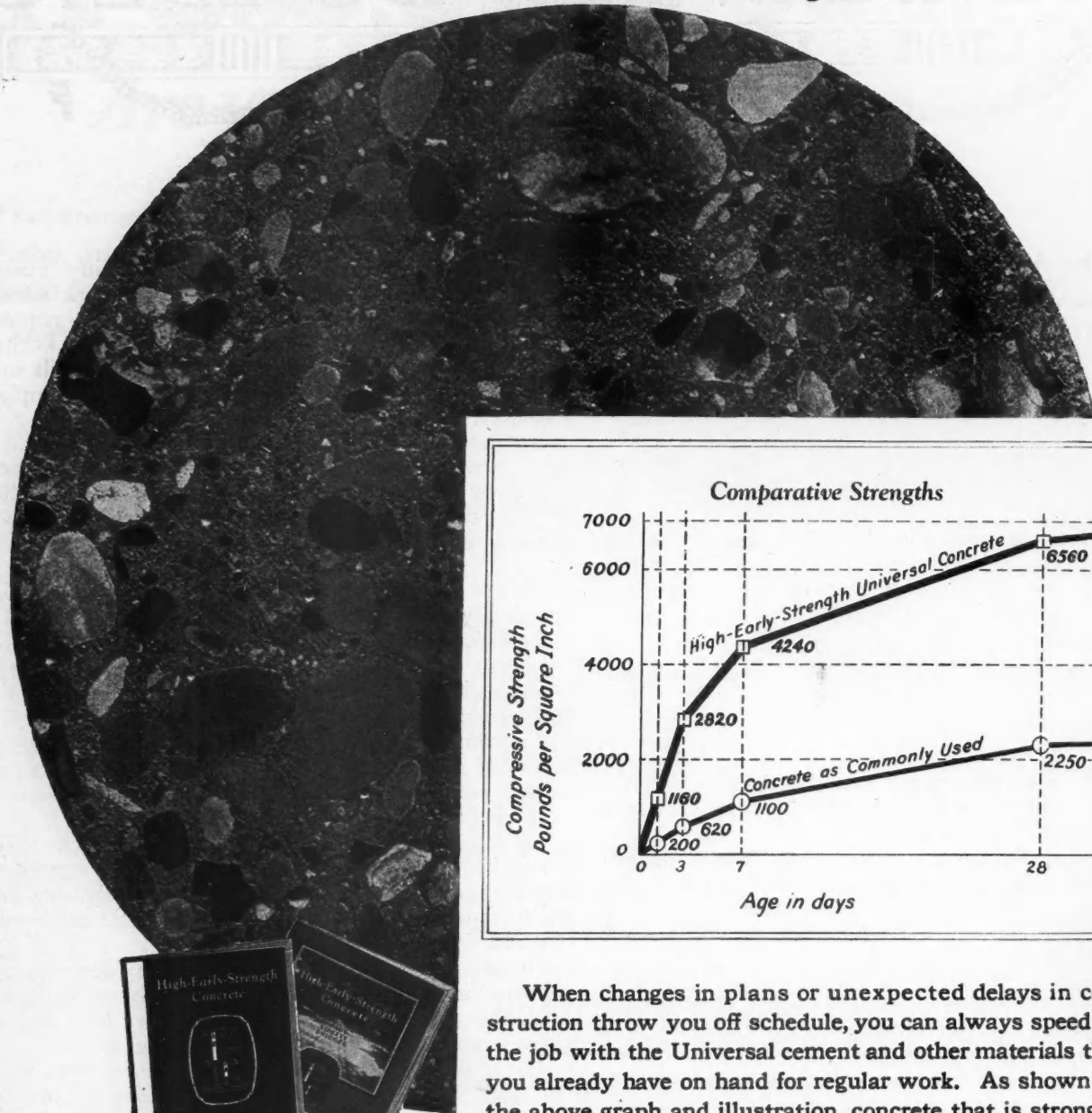
Sometimes the professional builders have been harder "to sell" than the general public. They are more conservative and require more actual proof of performance. But when finally satisfied that the material is *right* the builders will see to it that it is used and used right—not on one job only but on hundreds of jobs.

The contractors and speculative builders, readers of the *AMERICAN BUILDER*, are quantity buyers and continuous buyers. They are interested in quality and service just as much as price, and they are receptive to new ideas. These are the men who really build the nation's homes and other needed structures. They loom large as the real market and the deciding factor in the choice and use of home building materials, supplies and equipment.

The editors of the *AMERICAN BUILDER* are working for the best interests of the readers of this publication and also of the manufacturers, when they urge every manufacturer to make certain that *every builder* thoroughly understands his proposition and its proper installation and use. Only by so doing will smooth functioning of "consumer demand" be accomplished and the industry go forward in a big way to utilize the many improvements that have been created and are being urged upon the general public.

Right at Hand!

This high-early-strength concrete was made with the same Universal Cement that is used for regular work.



When changes in plans or unexpected delays in construction throw you off schedule, you can always speed up the job with the Universal cement and other materials that you already have on hand for regular work. As shown by the above graph and illustration, concrete that is stronger, denser and more water-tight in from 2 to 4 days than ordinary concrete is in 28 days is secured with standard Universal portland cement by the application of tested methods. Description of these methods for obtaining **High-Early-Strength Universal Concrete** will be furnished on request. Just mail the coupon for either or both of the booklets. There is, of course, no obligation.

Yours
for the asking!

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Address _____

Universal Portland Cement Co.
208 So. La Salle Street, Chicago

Without obligation, please send me the following booklet:

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A.B. 8-29

One Standard Cement for All Concretes and Mortars
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Concrete for Permanence

Hospitals of Today *

Their Design, Construction and Equipment to Meet Present Day Requirements

By JOHN A. McNAMARA

MANY influences have contributed to the increased activity in the construction of hospitals in the United States during the past ten and particularly during the past five years.

Perhaps the basic reason for larger and better hospitals has been the complete change in the living conditions in the entire country. The popularizing of apartment houses and hotels as domiciles for all classes has tended to make the care of the sick in the home practically an impossibility. Hence it has become necessary to provide for those who are unfortunate enough to be ill places that in some way approximate the home conditions to which they have been accustomed.

Another dominant factor has been the radical change in the practice of medicine and the introduction of specialization among physicians and surgeons. There has been added to medical treatment a great amount of diagnostic and therapeutic "machinery," such as X-ray equipment, physical therapy apparatus, greater operating room facilities and deep therapy equipment, which have made it almost imperative for the sick man to seek the haven of the hospital.

When it is considered that there are approximately ten million visits paid to the hospitals of the country every year and that the hospital population every day amounts to one and a half million, it can be readily understood how great is the importance hospitals have assumed in our social scheme. And when it is further considered that the building program for hospitals this year is estimated at close to \$300,000,000 the importance of these institutions from the standpoint of the builder and the manufacturer of building materials is great indeed.

Those who build hospitals, build them for occupancy, not for selling purposes, as is the case, for instance, with most apartment houses and hotels. The project is usually well financed, quality products only are used and the question of price over durability and convenience is seldom raised. Perhaps this is best evidenced by the fact that it has been estimated that well built hospitals cost from seventy five to eighty cents a cubic foot in our larger cities, a cost that is higher than nearly any other type of building.

It must be admitted that a few years ago hospitals were not very popular. They were places where very sick people went and from which many of them did not come back. Today the old order has been changed and people go to hospitals much more willingly and with greater understanding and confidence than they did ten years ago.

The hospital itself has greatly changed. Bare white walls, hallways smelling of medicines, bleak entrances and desolate wards were once customary, and it must be admitted they were terrifying. Today great attention is given to the lobby and the office, the walls of the hospital have taken on color, floors are quiet, no smell assails the nostrils of the incoming patient or the visitor, there are more private rooms and smaller wards and everything consistent with good care for the patient is done to welcome those who come to the institution. Perhaps the most surprising thing about this change is the realization that pleasant surroundings have a definite beneficial effect upon the patients.

It has cost much to make the hospital popular but the cost has been more than justified. The building itself has had to be entirely changed. To eliminate odors, corridors had to be made wider and special attention had to be given to ventilation. Nearly every hospital has installed mechanical ventilation in order to banish hospital odors and also to promote the welfare of the patient by providing only fresh, bacteria-free air. This is particularly necessary in populous areas, such as New York and Chicago, where smoke, dirt and automobile gases have a definite effect upon the sick.

Another important factor is the elimination of noises that originate from within the hospital. Acoustical correction has been found to be necessary, and wall and ceiling treatment, better space allotments and other noise destroying methods have been used. The proper use of certain wall materials, the skillful construction of walls, floors and ceilings, the inclusion in the building of fabrics and furniture that will absorb noises and the elimination of hollowness and echo, all are factors that have been given a great deal of thought and study on the part of hospital superintendents, hospital architects and consultants.

A consideration that must not be neglected in this type of building, although it can be disregarded in many buildings erected for other uses, is the cubic footage per patient. Here we have a large group of persons,

all of whom are infected with some disease or whose resistance is lower than usual. If these persons are thrown in close contact with each other cross infection may result, epidemics are probable and the whole scheme of hospitalization will be defeated. From a public health standpoint a generous amount of space must be allotted to every hospital bed. In most states laws have been enacted to see that this provision is strictly carried out. The architect therefore must face the problem of getting as large a number of beds

More than three hundred million dollars are spent annually for new hospitals in this country.

From 450 to 500 new hospitals are built.

Some of these buildings replace old ones, some will be new units of already established institutions, while others will be new projects altogether.

There are approximately 60,000 additional hospital beds installed in these new buildings each year.

*This is the first of a series on the Important Classes of Structures other than Residential which go to make up the total building activity of American Builder readers. Next month CHURCHES will be surveyed—Editor.

as possible within the smallest allowed space, always keeping in mind the comfort of the patient, the laws governing cubic space per patient and the money available.

Flooring has become a controversial subject recently, with architects and hospital authorities at variance over the best type of flooring for hospitals. The question of nurse fatigue enters into this discussion and there are many who are firm in the belief that rubber or rubberized flooring is the only solution for hospitals, from the standpoint of the patients' comfort, the fatigue of those who are constantly walking over the floors and the ultimate expense. Maple flooring has its adherents also, as well as terrazzo and other forms of floorings. A popular form of flooring is the rubber or rubberized floor center with a terrazzo border.

There is no agreement as to the type of windows to be used, although of late many of the hospitals have been installing the ultraviolet ray transmitting glass which has proved of benefit to the patients, particularly to tuberculous patients and convalescents. General hospitals have used this material to advantage in their solariums and sun parlors.

Color was introduced first in maternity hospitals and now is common in nearly all general hospitals. Some valuable data have been collected on the subject of color in hospitals and the psychological effect of color upon patients. Green seems to be the most acceptable wall color for patients' rooms, with blue and red the only primary colors that are in disfavor. Halls are being done in buff or gray, entrances in almost any color and operating rooms in gray or green, both dull finish. White is completely disappearing from operating rooms. Tile work three quarters up the wall in either of the above mentioned colors is being chosen, with the floor usually of a dull gray or dark tile.

An interesting reason for the elimination of white in the operating room is found in the fact that it proved to be too glaring and tiresome for the surgeon's eyes, especially during prolonged operations. Some hospitals have gone so far as to change the color of the operating gown from white to light gray.

One important factor in building the operating room is the elimination of static electricity. Combustible gases are used as an anesthetic in nearly every operation, and some serious accidents have resulted from the explosions caused by a static spark. Either the operator or the patient must

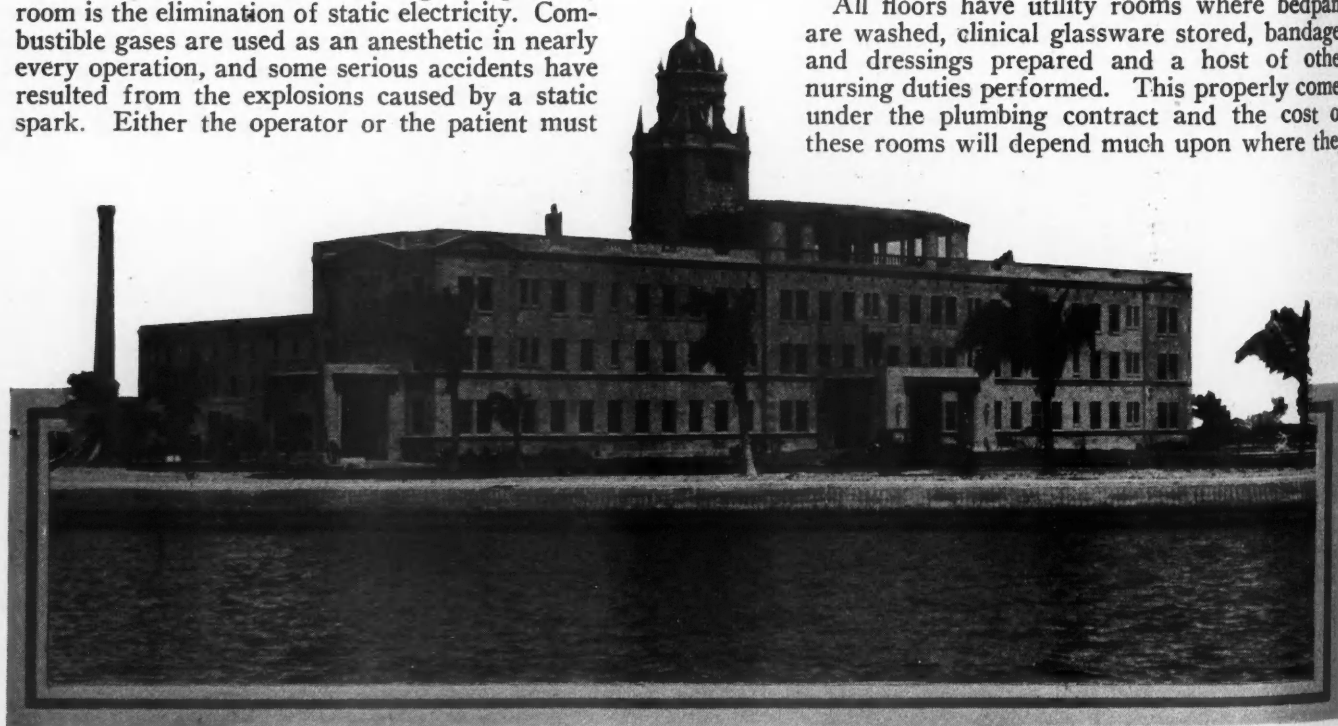
be grounded or the atmospheric conditions changed to preclude static, if safety is to be assured. With sufficient humidity in the room, static will not develop. Floors may also be so constructed that no matter where the surgeons or the attendants step they will be grounded. Some of the manufacturers of anesthetizing gas have also constructed their containers in such a manner that much of the danger has been done away with. The elimination of static electricity is, however, still a problem and at the present time the Fire Underwriters Laboratories are working on ways and means of wholly eliminating the hazards.

The most expensive mistake that hospitals can make is the installation of unsuitable plumbing. Hidden plumbing, hard to reach when repairs are necessary, will cause not only the expense of breaking open walls and floors but will also result in the closing down of a room or of several rooms until the repairs have been completed. All plumbing must be easily accessible and as simple as possible considering the complex nature of hospital plumbing, with its sterilizers, utility rooms, bath facilities and floor kitchen spaces.

Wiring is another problem that causes some trouble and its installation may prove to be an expensive burden unless special care is given to it. In addition to light wires, telephone wires and the usual wiring found in other buildings, the hospital has extensive signal systems going from the bedside to the nurses' stations and often to the superintendent's office. Recently, wiring for radios has become popular, offering another problem for the builder to solve. No special rules can be laid down for electric wiring in the hospital because local conditions, type of signal system and other factors make each hospital an individual job.

Nearly every well regulated general hospital will have a service kitchen or a diet kitchen on every floor, with an ice box or some cooling system, dishwashing space, a dumb-waiter or automatic service system and other appurtenances. These rooms further complicate matters because they are in continual use, must be well placed on the floor, must be as noiseless as possible and must be conveniently arranged.

All floors have utility rooms where bedpans are washed, clinical glassware stored, bandages and dressings prepared and a host of other nursing duties performed. This properly comes under the plumbing contract and the cost of these rooms will depend much upon where they



The Allison Hospital, Miami Beach, Fla., Containing 100 Beds, Illustrates the Attractive Setting Which Is So Important.

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The Highland Hospital, Oakland, Calif., Accommodates 500 Patients.

have been located on the floor.

Every hospital of more than fifty beds and many of less than that size has a complete laundry doing all of its work, including sheets and pillow cases, blankets, doctors' gowns and in most instances the regular laundry work for the interns and resident physicians, as well as nurses' uniforms. Hospital laundries have proved an economy and they have become an accepted part of the hospital building. Their proper location in reference to the rest of the building, suitable space requirements and skillful arrangement of the machinery and lines of travel are the factors that will make them successful. Most laundries are located either over or near the power plant, all on one floor. If it is at all possible, they should be connected with every floor by laundry chutes. When this is not possible the laundry chutes should lead out somewhere near the entrance to the laundry.

The two objections that must be overcome are vibration from the machinery and excessive heat from the room. Proper space allotment will overcome the latter and proper installation will usually overcome the former. Because of these two difficulties many hospital superintendents feel that the laundry should always be placed in a separate building yet many of the latest hospital buildings include the laundry in the same building as the beds.

Laboratories form still another part of hospital construction and these must be placed near the operating suites. Space allotment will differ with the different types of hospitals and according to the amount of laboratory work that will be required. The lighting must be good, the ventilation must be capable of being regulated and provision must be made for refrigeration. There is nothing unusual about the construction of the room itself but care should be taken to see that the tables and floors are acidproof.

High or low pressure boilers, coal or oil are the two questions that are continually arising regarding the power plant, without any satisfactory solution. Both

high and low pressure boilers are used, with the majority of hospitals using high pressure, due to the uses of steam in the laundry and for the sterilizers. Oil for fuel is used and is found successful in many hospitals where the matter of transportation of oil is not too difficult. In the heart of Pennsylvania, of course, it would be foolish to use oil as hard coal is very cheap, yet in West Chester, Pa., not far from the anthracite fields, oil burners are used. In New England and in some of the central portions of the country many of the hospitals burn oil, particularly as the oil regions of Kansas and Oklahoma are reached.

Both convenience and price should be considered in the purchase of boilers. Oil heating does insure a uniform heat, cleanliness and less handling of materials. Cheap grades of coal, however, can be and are used by hospitals when mechanical stokers have been installed.

A consideration of first importance is the elevators. It must be remembered that in most hospitals the elevator must be large enough to admit easily stretcher carts, which are about six feet long and two feet wide. These same elevators are also used as passenger elevators. They must lead out conveniently so as not to cause unnecessary travel for the patient going to or from the operating room. The elevators should be as noiseless as possible and great care should be taken to see that doors are not slammed or are not slammable and that cables cause as little disturbance as possible. The elevators must be conveniently placed so as to eliminate unnecessary travel both from the rooms and on the operating floor.

A most important part of the hospital, of course, is the kitchen. It does not differ materially from the hotel kitchen, except for the fact that usually there is a special diet kitchen in conjunction with the regular kitchen. Food service is one of the big factors in the hospital and while there is a divergence of opinion, many of the hospitals built during the past five years favor the central service type, with the dumb-waiter leading up to the floor diet kitchens. However, many

of the leading authorities on hospital construction contend that the proper way to serve food is by taking containers up to the floors on service elevators in heated carts and distributing the various portions from these points. It is a question of whether the food will remain fresh and palatable longer by the use of the carts or by the system of dumb-waiters.

The kitchen is usually divided into several parts. The dietitian has an office, there is a preparation room for vegetables, etc., a bakery, a cooking department, serving department, a dishwashing department, a root cellar and a storage department. All hospitals have some form of cold storage, ranging from simple refrigerators up to elaborate cold storage plants, depending upon the size of the hospital and climatic conditions. The proper storage of foods is probably more important in hospitals than hotels or restaurants and more money is spent upon providing for this phase of kitchen work.

Recently it has become customary to plan hospitals with a view to expansion and a regular program is mapped out for additions to the buildings. A hospital may start with a hundred beds with the idea of adding another hundred beds five years later. Or it may start with beds for the acutely ill only, with an idea of later adding a maternity department or a convalescent unit.

If thought has been given to the subject of expansion, provision will be made for it at the time the first unit is planned. Storage space, kitchen facilities or facilities for expanding the kitchen, arrangement made for the quick and economical installation of a delivery room

CHURCHES, NEXT MONTH

IN the September American Builder will appear the Second of this Series on Special Buildings, "Churches to Meet Present Day Requirements".

by SAMUEL D. FUSON

DON'T MISS IT!

for the maternity department, the doubling of the operating room facilities, the connection of corridors with the least possible trouble and expense and other considerations must be studied carefully. It is not unusual to find that one department has been neglected in the planning, such as the power plant or laundry, and when the second hundred beds are added either an expensive addition must be made to the laundry or an entirely new unit planned.

Perhaps in no other field is it so necessary for the architect and builder to familiarize himself with the details of the business. Because an architect can build a satisfactory factory does not qualify him for hospital construction. Glaring errors in hospital construction have been made because the architect was not what could be properly called a hospital specialist. For this very reason there has developed the hospital consultant who is an expert in hospital management and construction, who works with the architect in the planning and construction of the building. Lest a mistake be made, it may be well to define here rather carefully what are the functions of a hospital consultant and what is his worth to the field of hospital construction. First of all he should be a successful hospital administrator, either the head of an important institution or a man who has had many years experience in capably administering a hospital. That he has an M. D. degree and a little actual experience, probably as the unsuccessful head of an institution, does not qualify him to act in the capacity of consultant. His value comes when he is called upon to help an architect who has had little or no experience in hospital construction. There are today in the United States and Canada no more than six competent hospital consultants and the selection of a consultant should be made with care. The selection of the architect and the consultant is most important for economical building.



IN next month's magazine we will present a most timely and valuable article, "How Steel Joists Meet Modern Requirements," by Frank Burton, consulting engineer. Study it and profit by it.

EDITOR.



The New Hahnemann Hospital, Philadelphia, Is Typical of the Skyscraper Style.

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Kansa
Knox
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Long
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A Skyscraper Survey

Made by the Thompson-Starrett Company, Inc.

Prominent Contracting Firm, New York City

THE term skyscraper in its generally accepted sense is hardly more than relative; for while it conjures up visions of the high buildings in some of our larger cities, a 15-story building in a smaller city is much more of a skyscraper than is a 20-story building in New York's towering financial center.

That high buildings are not confined exclusively to the larger cities is shown in a survey recently completed, covering 173 cities of the United States having a population of 50,000 or more. Of these, 36 have one or more buildings over 20 stories high. On the other hand, 42 cities have no buildings as high as 10 stories, and 59 cities have less than five such buildings.

The survey reveals that there are in this country 4,778 buildings 10 stories or more in height, and of these only 377 are more than 20 stories high. Approximately half of all buildings between 10 and 20 stories

and of those over 20 stories are located in New York. Carrying the analysis further, it is found that 50 per cent of the buildings in New York from 10 to 20 stories and 60 per cent of those over 20 stories are located between 14th and 59th streets.

New York has 188 buildings over 20 stories, Chicago has 65 and Philadelphia is third with 22. Only six cities have 100 or more buildings over 10 stories high.

There are 10 buildings in the country taller than 500 feet and five others are in the course of construction. The highest is the Woolworth Building, whose 792 feet has not been surpassed in 16 years. This mantle of supremacy will pass this year to the Chrysler Building, which will rise 808 feet above the sidewalk, but shortly thereafter the Bank of Manhattan Building, mounting to a height of 836 feet, will claim the distinction of the loftiest building in the world.

List of Cities in Which Are Five or More Buildings of Ten Stories or More

City	No. Buildings	
	10-20 Stories	21 Stories or More
Albany, N. Y.	9	2
Atlanta, Ga.	17	1
Atlantic City, N. J.	21	0
Baltimore, Md.	36	4
Beaumont, Texas	5	1
Birmingham, Ala.	13	1
Boston, Mass.	102	2
Chicago, Ill.	384	65
Cincinnati, Ohio	24	2
Cleveland, Ohio	40	4
Columbus, Ohio	16	1
Dallas, Texas	31	1
Dayton, Ohio	15	0
Denver, Colo.	9	0
Des Moines, Iowa	14	0
Detroit, Mich.	102	19
Duluth, Minn.	5	0
Fort Worth, Texas	11	3
Galveston, Texas	5	0
Houston, Texas	24	5
Indianapolis, Ind.	23	0
Jacksonville, Fla.	14	0
Jersey City, N. J.	16	0
Johnstown, Pa.	5	0
Kalamazoo, Mich.	5	0
Kansas City, Mo.	60	2
Knoxville, Tenn.	6	0
Little Rock, Ark.	6	0
Long Beach, Calif.	14	0
Los Angeles, Calif.	134	1

City	No. Buildings	
	10-20 Stories	21 Stories or More
Louisville, Ky.	17	0
Memphis, Tenn.	23	1
Miami, Fla.	25	1
Milwaukee, Wis.	15	1
Minneapolis, Minn.	32	3
Montgomery, Ala.	5	0
Nashville, Tenn.	17	0
Newark, N. J.	18	3
New Haven, Conn.	5	0
New Orleans, La.	21	1
New York, N. Y.	2,291	188
Oakland, Calif.	14	1
Oklahoma City, Okla.	20	2
Omaha, Neb.	9	0

Cities with 100 or More Buildings Over 10 Stories

New York	2,479
Chicago	449
Los Angeles	135
Detroit	121
Philadelphia	120
Boston	104

City	No. Buildings	
	10-20 Stories	21 Stories or More
Peoria, Ill.	12	0
Philadelphia, Pa.	98	22
Phoenix, Ariz.	5	0
Pittsburgh, Pa.	52	15
Portland, Ore.	25	0
Providence, R. I.	5	1
Richmond, Va.	20	1
Rochester, N. Y.	12	0
Sacramento, Calif.	7	0
St. Louis, Mo.	83	3
St. Paul, Minn.	7	0
Salt Lake City, Utah.	10	0
San Antonio, Texas.	21	3
San Diego, Calif.	8	0
San Francisco, Calif.	45	8
Seattle, Wash.	41	2
Springfield, Ill.	5	0
Stockton, Calif.	6	0
Syracuse, N. Y.	4	1
Tacoma, Wash.	6	0
Tampa, Fla.	11	0
Toledo, Ohio	6	1
Tulsa, Okla.	37	2
Washington, D. C.	20	0
Wheeling, W. Va.	6	0
Wichita, Kans.	14	0
Wilkes-Barre, Pa.	5	0
Youngstown, Ohio ...	5	0

"Air-Rights" and Locomotive Smoke

How the Perplexing Problem of Smoke Disposal Is Handled in the New Daily News Building Over the Union Station Tracks in Chicago

BY JOHN V. DODGE

THE story of one of the most difficult problems of concrete laying in recent years and its successful solution was revealed recently in Chicago at the completion of the twenty-six story Daily News Plaza, new home of the Chicago Daily News on West Madison Street.

The building is constructed on air rights over railroad tracks where hundreds of trains pass daily. In order to carry away the smoke and fumes from locomotives passing under the building the architects, Holabird & Root, designed a special smoke chamber covering an area of 65,000 square feet. Since the gas from locomotive smoke rapidly eats away steel, the architects specified that the chamber should be coated with non-porous and very dense concrete that resists the damaging effects of the fumes.

The laying of the concrete was done in freezing

weather under great difficulties. Traffic on the railroad could not stop, and absolute clearance for all trains had to be allowed by the contractors, Hegeman & Harris. The workmen were forced to work over certain tracks at certain times, abandoning their work often to allow trains to pass. Some quit under the hardships of the labor and of the zero weather. The job, however, continued, until the entire chamber was laid with concrete.

To protect the newly mixed concrete from freezing, salamanders were placed on a platform below the work. As fast as the concrete was laid, it was covered with marsh hay. Straw for this purpose is inadequate because it is filled with chaff and dust.

The slab of the smoke chamber had to be completed before the slab of the building above was laid. The chamber was then hung from the structural part of the building. Forms were stripped from the under side of the Plaza slab. More than 4,000,000 square feet of form lumber were used in this construction. All the hangers of the chamber were thoroughly fireproofed before the actual laying of the concrete was begun.

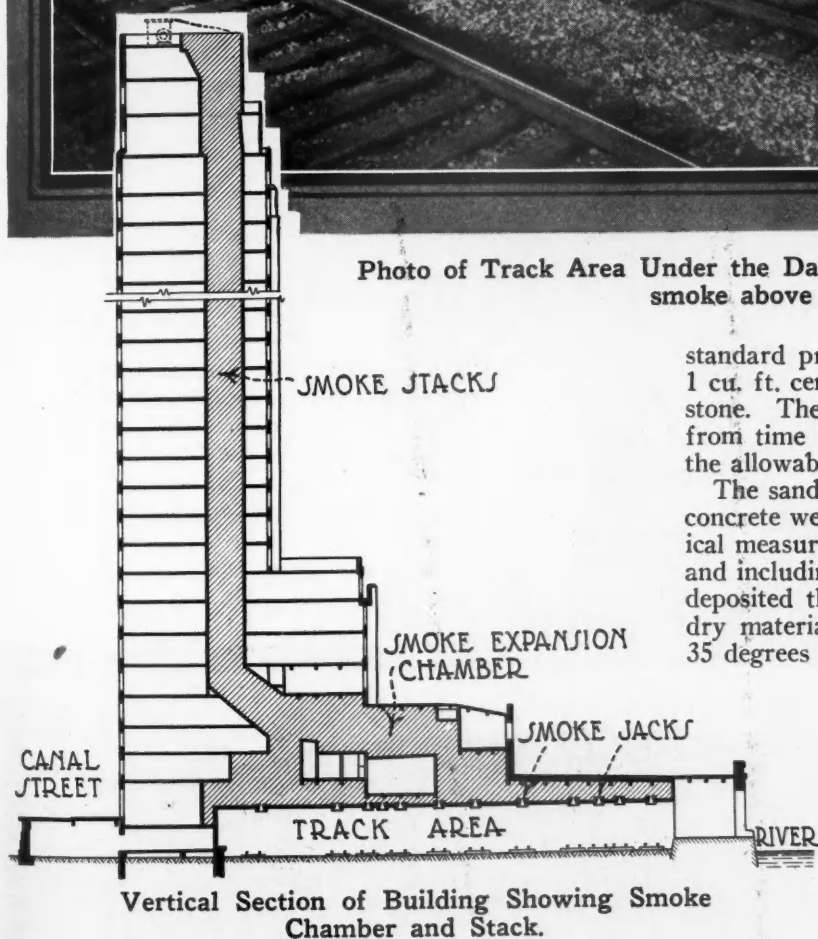
More than seventy-five tons of cast iron baffle plates are installed in the smoke chamber to conduct the smoke, steam and fumes from passing locomotives into the proper air channels so that the gases may escape through the smoke shaft up to the chimney top on the roof of the building. Although engineers consider the draught of this tall chimney sufficient to dispose of the smoke, a system of fans capable of discharging 493,000 cubic feet of air a minute has been installed in the chamber to provide against the contingencies of down-draughts. These fans, in addition to disposing of locomotive smoke and steam, afford mechanical ventilation for any por-

**The Daily News Building, Chicago,
Constructed Over Steam Locomotive
Tracks.**





Photo of Track Area Under the Daily News Building. Note exit for smoke above each track.



Vertical Section of Building Showing Smoke Chamber and Stack.

tion of the building which requires it.

Approximately 35,000 yards of concrete were used in the construction of the entire Daily News Plaza. Every precaution was taken by the architect and the contractors to insure the highest grade of materials in the building. The concrete was mixed in a batch mixer operated by electric power which was thoroughly cleaned at regular intervals while in use. Raw materials were not allowed to enter the drum of the mixer until after the discharge of all the material of the preceding batch. The

standard proportion of materials for the concrete was 1 cu. ft. cement, 2 cu. ft. sand and 4 cu. ft. of crushed stone. The consistency of the concrete was determined from time to time by the architects by the slump test, the allowable slump being between one and four inches.

The sand, stone and gravel used in the mixing of the concrete were measured in volume by means of mechanical measuring devices readily adjustable as to capacity, and including an automatic strike-off. No concrete was deposited thirty minutes after water was added to the dry materials. Whenever the temperature was below 35 degrees Fahrenheit, the contractors took proper precautions to prevent the work from freezing until it was thoroughly set. The wood and metal forms were wetted or oiled before the deposit of any material upon them, and they were left in place until after the architect directed their removal.

Cement top dressing throughout the building is of $\frac{3}{4}$ " thickness, except on the stairs, where it is $\frac{1}{2}$ " thick. The top dressing consisted of one part of cement to two parts of fine torpedo sand. In sidewalk work, however, and on the floor of the Plaza, fine granite screenings were used as substitute for the torpedo sand.

After the pouring of the concrete, workmen carefully spaded it so that all reinforcement should be thoroughly encased to eliminate voids and to provide a dense compact mass. The concrete used in the smoke chamber was much denser than that used in other parts of the building so as to resist the action of the smoke.

? Does It Pay ? to Modernize ?

Well, That All Depends on How It's Done,

Says Miss E. A. MARTINI, Architect

"IT pays to modernize!"

This statement so often used in today's modernization activities is very true provided modernization is done correctly. But if a building is unwisely modernized, it does not pay, and both the owner and the public will suffer, because an inferior modernization will discourage such building activity.

The owners of an old building discussed the advisability of rehabilitating their home. "We must modernize our house, the bare siding hangs loose, the rain is rotting the sash because the putty has fallen off, the cornice needs a new gutter and the wooden front door creates a pitch dark hall. We have no sun parlor and the facade is uninteresting. All our neighbors have new homes and they probably ridicule ours," were some of their arguments.

Various advertisements also called the owner's attention to the advantages of modernization. Some advertisements showed before and after pictures of remod-

eled buildings and contained statements like "Modernization Brings Utilization," "Modernization Re-creates Value," "It Pays to Modernize," "How Does Your Home Look to Your Neighbors?" "Property Value Increased by Modernizing," "Give Youth to the House the Years Have Made Old-fashioned."

But when the owners noticed the announcement of prizes offered for the best reshingled houses, they immediately became intensely interested, and decided to compete for a prize. They examined pictures of modern homes, looked over attractive new houses in town, and made crude drawings which indicated their wishes pertaining to their new requirements.

When the owners finally agreed upon the changes they wanted, they brought their data to a reliable contractor and asked him to modernize their house. He had just completed a new house similar in plan to the owners' old one, consequently he considered it easy to estimate on the new construction and on the changes



An Old House at Beverly, Ohio, as Shown Below, Was Remodeled for \$2,000 Into What We See to the Left.

TOO BAD!—When It Would Have Been as Easy to Change This Old House Into a Really Beautiful Colonial.



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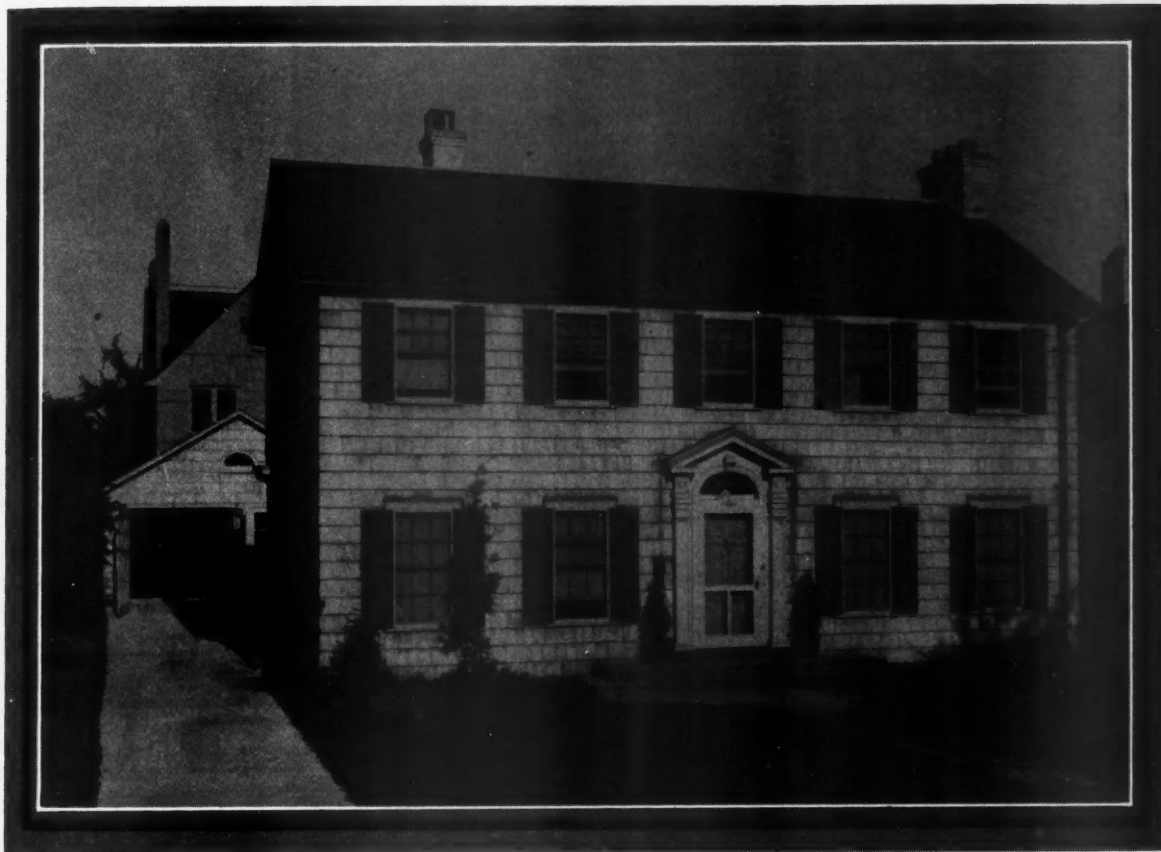
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the old house required. After he submitted his bid together with a verbal statement describing the appearance of the house after the changes would be completed, he received the contract to modernize the house in accordance with the owner's sketches and with ideas suggested by the contractor.

The pictures opposite show the result of the modernization. While the material and workmanship is similar to that employed for the average small house, the new building is unbalanced. This fault is emphasized by the absence of a break in the wall between the new two story addition and the symmetrical old house. There is nothing

tation must associate modernization with harmonious design.

They would have saved themselves much time and trouble and outwardly would have had an attractive home if they had employed an architect instead of trying to do their own designing. It is an architect's business to design beautiful structures and he devotes many years of his life exclusively to his profession. The average home owner cannot model a beautiful statue nor execute an artistic painting, but many owners who have never studied architecture consider themselves capable of designing an attractive home. The owners



A Perfect Colonial Designed and Built by Peter Lauer & Son, Inc., Milwaukee. How easy to have changed the old house to this style.

ing on the right side to balance the wing on the left. The windows on the new wing do not agree with the old ones, nor with the group of three new windows on either side of the entrance, which protrudes beyond the house as though it were kicked out. The wide Colonial doorway, although well proportioned by itself, overwhelms the vestibule because the narrow space on the sides gives the appearance of vestibule walls 1 inch thick. A gable roof with exposed rafters protrudes so high above the arched doorway that the second floor window above is reduced in size and the main gable roof extends beyond the wall line and covers the window tops like a hat which is too large for the head. Instead of a dignified cornice exposed rafters similar to daggers scare onlookers away.

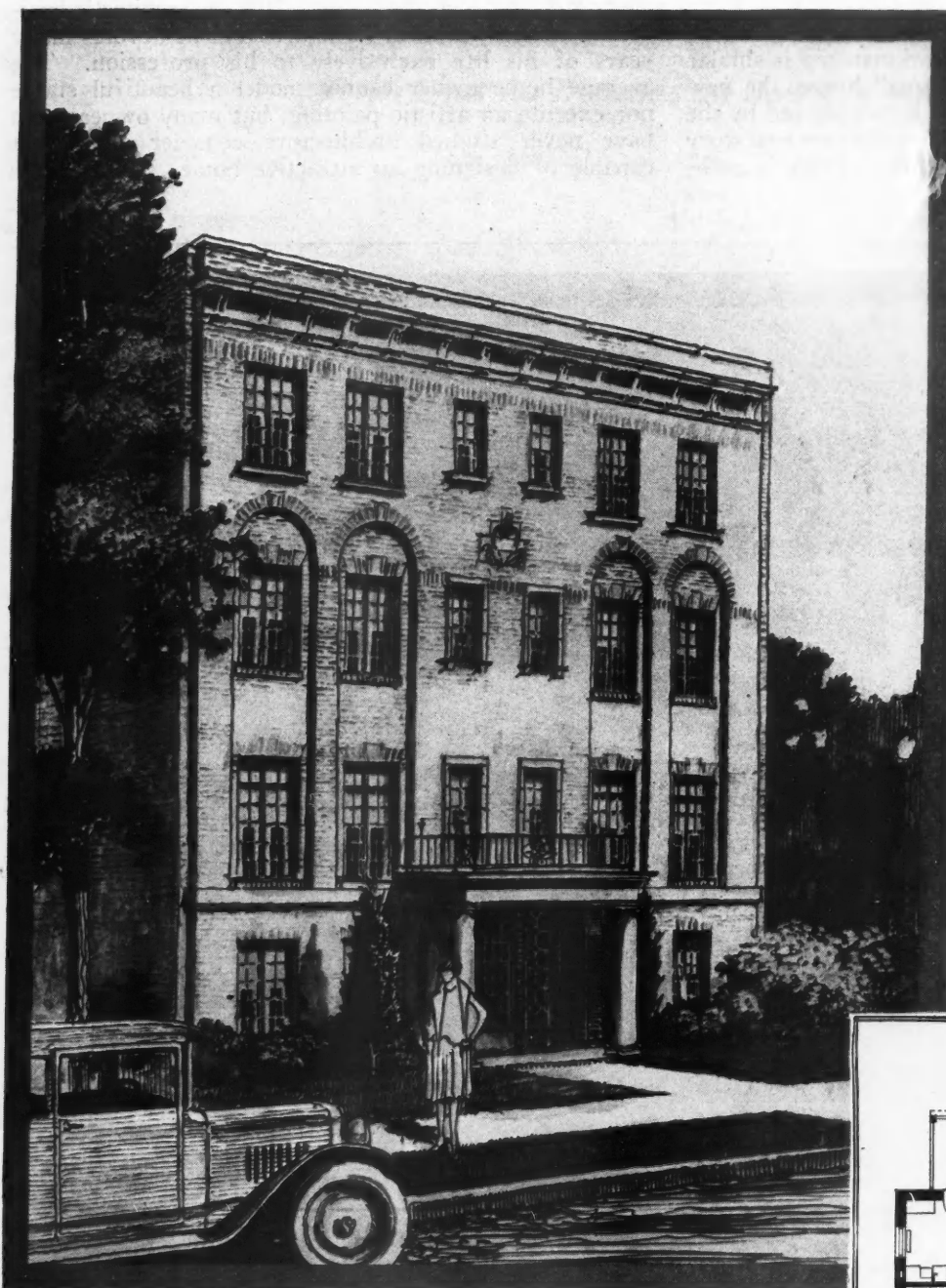
Is it necessary to explain the reason why the owners failed to receive a prize? They expended greater energy and more money than other contestants and their disappointment in finding their house rejected in the contest is logical because they failed to realize that true rehabili-

did not know that their house could have been transformed into a beautiful Colonial home for less money.

A picture of a new Colonial home designed by a noted architect is shown herewith, and a comparison between the original old structure and the picture of this Colonial house shows that the plans of the two buildings almost coincide. Besides new shingles, the only changes necessary to transform the old house into a Colonial residence as charming in appearance as the third illustration are new shutters, gable roof with slight overhang, and a Colonial doorway. Perhaps if the owners had changed their home to resemble this Colonial house, they might have secured a large prize.

The owners spent approximately \$2,000.00 and increased the value of the modernized home over the old one \$4,000.00 or a net increase of \$2,000.00. It would have required less than one-half this amount of money to change the house into a true Colonial house, and the increase in value would have been proportionately more.

Standardized Planning for S



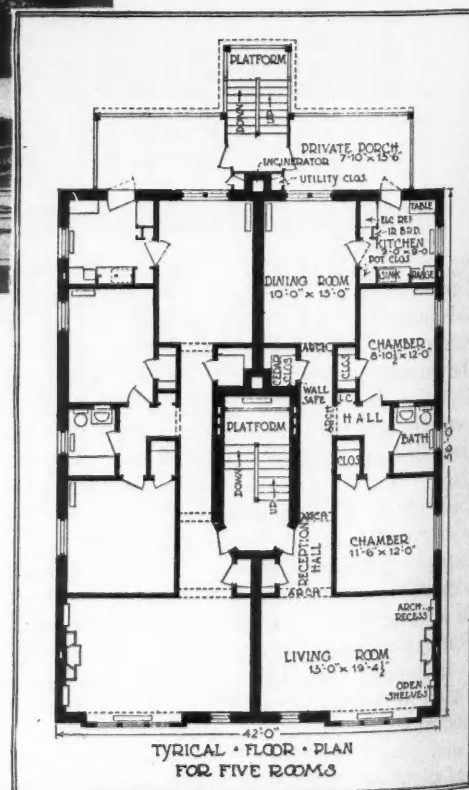
A Solution of the Problem of Producing Apartment Buildings on a Sound Investment Basis.

Either This Design or That on the Opposite Page May Be Used with Either of the Two Floor Plans Shown on These Pages.

IN order that it may be a really good investment proposition, an apartment building must be built at a reasonable cost and must afford a satisfactory return on the investment. It sounds simple but experience has proved that it is more of a problem than would appear on the surface. It is all a matter of design, however, and with the proper design any builder can produce such a building.

William G. Krieg, Architect, of Chicago, has made a study of this problem for a number of years and has evolved a standardized method of planning which produces the results desired by apartment builders. He has worked out the two designs illustrated on these pages to take care of the moderate priced 50-foot lot. These designs are alternative and either floor plan may be used with either of the exterior designs.

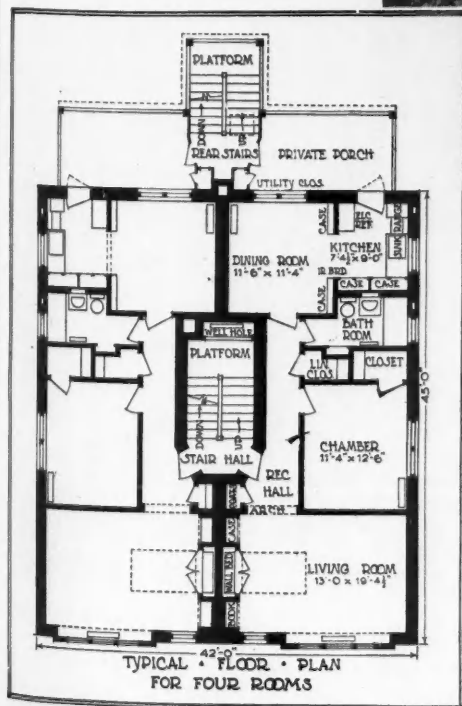
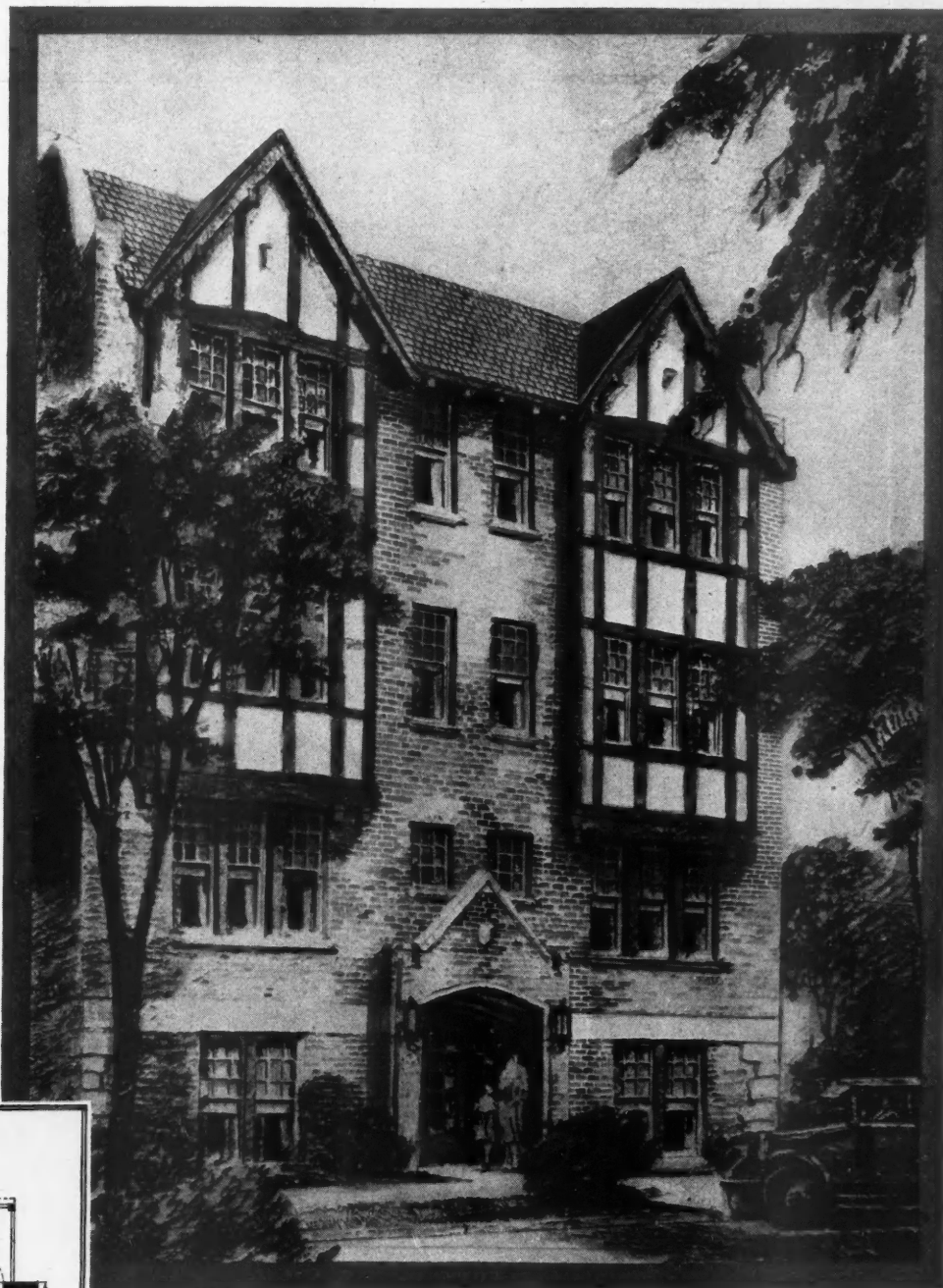
It will be noted that each of the plans calls for a building 42 feet wide and rectangular in shape. This is a big item in economy of construction. A common practice is to use a wider front, the



or Six-Apartment Buildings

WILLIAM G. KRIEG,
Architect, Chicago.

Outside of the City Areas This Unit of Four Room Apartments Can Be Built at a Cost of About \$20,000. They will rent for \$65, making a gross income of \$4,680 and, allowing 33 1/3 per cent for operation, will net over \$3,000 annually on the investment.



full width of the lot, for the depth of about one room and then to narrow the building for the balance of the depth. This increases the cost of construction and produces a floor plan which can be utilized to the best advantage.

These plans afford plenty of light and air for every room in every apartment. There is a back yard where that modern essential—a garage—can be built and where there is play space for children. The stair well is placed in the center of the building and does not take up any exterior wall space, so leaving a greater amount of window space available for the rooms.

The equipment of these apartments throughout is handled with standardized products which may be obtained at reasonable cost anywhere in the country. This means standard doors, windows, plumbing, heating equipment, cabinets and built-ins and so on. In this way a considerable amount of expensive detailing is eliminated. All of this plays an important part in reducing the cost of construction and increasing the desirability.



Mrs. Kennett's Clients Breakfast *Al-fresco* Under Such Gay Awning Stripes, Painted on the Ceiling; a Simple Touch But Effective.



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The Feminine Touch

Woman Builder Wins Success by Putting Her Personality Into Five Million Dollars' of Apartment Buildings.

As Related by E. A. Magurn.



MRS. EMMA C. KENNETT
KENNETT CONSTRUCTION CO.
Chicago

BUILDING is usually regarded as a man's work, requiring all the forcefulness supposed to be exclusively a trait of the male sex. But this story is about a woman whose success in the building industry would have been remarkable, even for a man. Nor is she, in any sense, a mannish woman, but one of the truly feminine type—and indeed, a wife and mother.

Mrs. Emma C. Kennett, active head of the Kennett Construction Company, Chicago, is the lady in question and the specimens of her work illustrated herewith are eloquent testimony to her originality and ability.

During the last four years, Mrs. Kennett has constructed in the Chicago area 150 buildings, mostly apartment buildings, with a total aggregate value of over \$5,000,000. And perhaps the most astounding part of it all is that this unusually successful builder had practically no capital and no practical knowledge of building at the outset. She says so herself, and, with a twinkle in her blue eyes, freely admits the mistakes—sometimes absurd—which were inevitably a part of her first experience in the building business.

At the outset, she employed no sub-contractors, hiring her own gang and superintending their work. She realizes now the greater efficiency of sub-contractors with their specialized equipment and freely employs them. But she has acquired a detailed knowledge of the business which sub-contractors have reason to respect; so, naturally, she is her own building superintendent. Who else could do it as well?

Among the laughable mistakes which Mrs. Kennett relates as among her experiences when she was learning the building business are the following:

She had an apartment building up to the roof line, when, one day, she received an urgent telephone call from the job:

"We can't go ahead; the city building ordinance requires a water table and there is none."

"That's all right," responded Mrs. Kennett, "go ahead and put it in."

As every builder knows, the water table comes just above the grade line, so that Mrs. Kennett's instructions left the man speechless. How the building department was appeased or the deficiency supplied need not be told in order to enjoy the humor of the situation.

On another occasion, an owner erected a building on a lot adjoining the one on which Mrs. Kennett was building. This owner copied her style of entrance. Now, one of the secrets of Mrs. Kennett's success is distinctiveness and her answer to this resulted in a change of plan whereby her building would have another style of entrance. The walls of her building were up and the floors down, but Mrs. Kennett promptly changed from a side to a front entrance.

Now, the Chicago building ordinance requires concrete over the vestibule entrance to an apartment building of this type, as a precaution to protect the entrance in case of fire. Without a thought as to this, Mrs. Kennett changed her entrance—and it cost her \$500.00. She admits it. But look what came out of it—an entirely new type of apartment entrance!

In place of the conventional vestibule, with rows of mail boxes and speaking tubes, one steps through an attractive English basement entrance into a large reception room, with chairs and a divan, where callers may comfortably wait. She has used this feature with great effect in other buildings and it has been one of the reasons for their ready sale at profitable figures. "If this be treason (to old ideas), make the most of it!" We feel sure that apartment dwellers would like to see more mistakes of this nature.

But perhaps the most laughable (?) experience which Mrs. Kennett had was this: She built an apartment building on the wrong lot—property owned by another owner. Laugh, you apartment-builders—what would you expect of a woman builder? But, hold on; the mistake wasn't hers at all. It was the mistake of a surveyor when the moon was full or who was full of "moon."

This little error cost Mrs. Kennett \$500.00, and she



Every Exterior Is Different in Mrs. Kennett's Apartments.

was lucky, indeed, that it didn't cost her more. She certainly was at a disadvantage in buying that lot!

From the outset, Mrs. Kennett has designed her own buildings. Indeed, her success is largely due to this fact. For she has offered the public better planned buildings—buildings more attractive than ordinary and more easily rented at profitable rentals. Another reason for her success is that she has chosen her real estate wisely; in fact, has built up an entire neighborhood—a pleasant neighborhood of fine, new buildings, well landscaped with grass, shrubbery and flowers.

This section is becoming one of the city's finest residential neighborhoods, at the extreme north limits of Chicago, a few blocks south of Evanston. Evanston express trains run to the Howard Street station in 20 minutes from the Loop.

Mrs. Kennett's latest building enterprise consists of six six-apartment buildings on North Hoyne Avenue, three blocks south of Howard. There are three of these buildings on each side of the street. On the west side, the designs are French—reminiscent of old Normandy. In fact, Mrs. Kennett got her inspiration from the photography in "Lilac Time," where the pictures show an old chateau in the background as a German plane is shot down in flames.

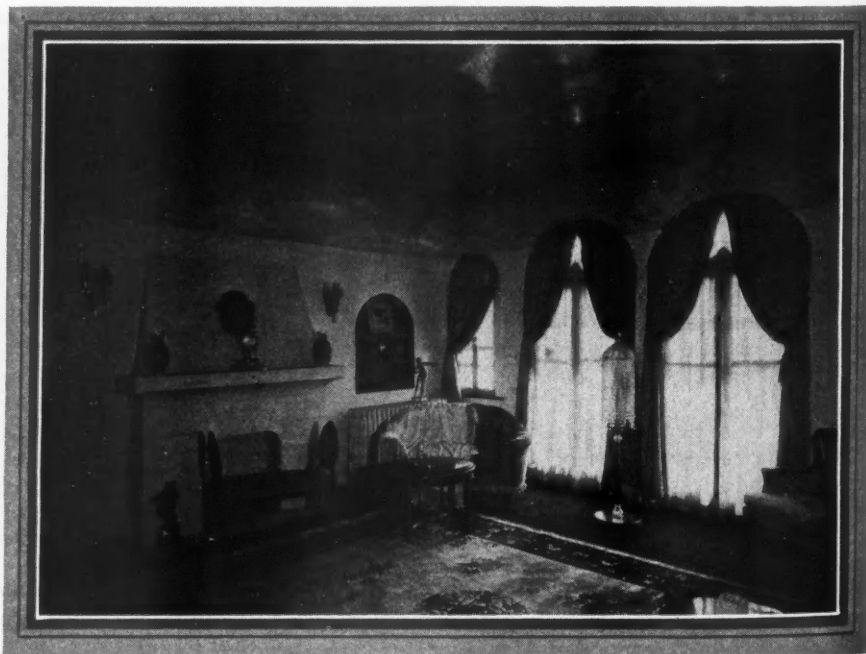
Those who have seen the picture, will remember the stream of French refugees, the heroine who turned and ran back to the little village where the planes were brought down and where she finds her wounded lover. Well, there in the background was this distinctive French chateau, the lines of which inspired the design of the "Chateau Beauvois" Apartment Building, at 7452-54 North Hoyne Avenue.

Each of the buildings in this development is about 50 feet wide and the rooms and halls are commodious

—with plenty of vista and daylight. Moreover, due to the Norman towers, a number of the living rooms have semi-circular fronts, with five windows in each.

Each of the apartments in these buildings has two baths. Mrs. Kennett found this to be one of the best selling features she could install. She has followed this idea in practically all of her buildings in this neighborhood, since she found that buyers liked it. The master bath rooms in these suites are finished in peach colored tile, with showers, steel bath room cabinets and linen closets. The maid's bath is finished in white tile, trimmed with green, and the maid's room, kitchen and bath room are practically en suite.

These six-room apartments rent for about \$150 per month—the suites at the top of each building for as much as the others. For, knowing the resistance to renting the top floors on account of the extra stairs to climb, Mrs. Kennett has made them extra attractive. The living rooms are "studio" living rooms, with the added height of the sloping roofs and with handsome beamed ceilings. These rooms are extremely spacious—approximately 18 feet by 19 feet.



This Charming Living Room, with Its French Windows, Has Unusual Mural Decorations, the Ceiling Being Painted in Imitation of a Summer Sky.



Old English and Norman-French Designs Are Popular.

Over the entire ceiling area is insulation, to retain the heat in winter and to keep the rooms cool in the summer. Each living room has a fireplace, with hearth attractively tiled, and built-in book case niches—some in the living rooms and some in the reception halls. The windows are wood casement of a special type, well screened and weather-stripped.

The kitchens in all these apartments have complete modern equipment and are exceptionally attractive to any housekeeper. There are colored enamel gas ranges, electric refrigerators and an abundance of steel cases and shelving conveniently arranged, as well as built-in cases with shelving and drawers in the butler's pantry, between kitchen and dining room.

Most of the rooms and passageways have canvassed walls, attractively painted, and palm-textured, painted plaster is used elsewhere. The color scheme is stippled old ivory. The canvassed walls do not require repainting every season, as they can be perfectly cleaned by washing. This is a distinct economy in upkeep.

One of the tenants so thoroughly appreciates the distinctiveness and originality of these buildings that he

has enhanced the effect with modernistic decorative murals in his living room and dining room. As shown in the illustrations, one gives a canopy, or awning effect and the other an effect of sky, clouds and stars.

In keeping with the architecture, the buildings on the west side of the street have stone fronts—Minnesota rough and smooth travertine, laid in random masonry courses. Some of the upper stories are finished in stucco and half-timbering, so appropriate to the Norman architecture.

Other features of the Norman designs are the oriel window effects. These windows are leaded—some in blue and some in amber bottle glass. These colored light effects fall upon the stair landings producing an effect not soon to be forgotten.

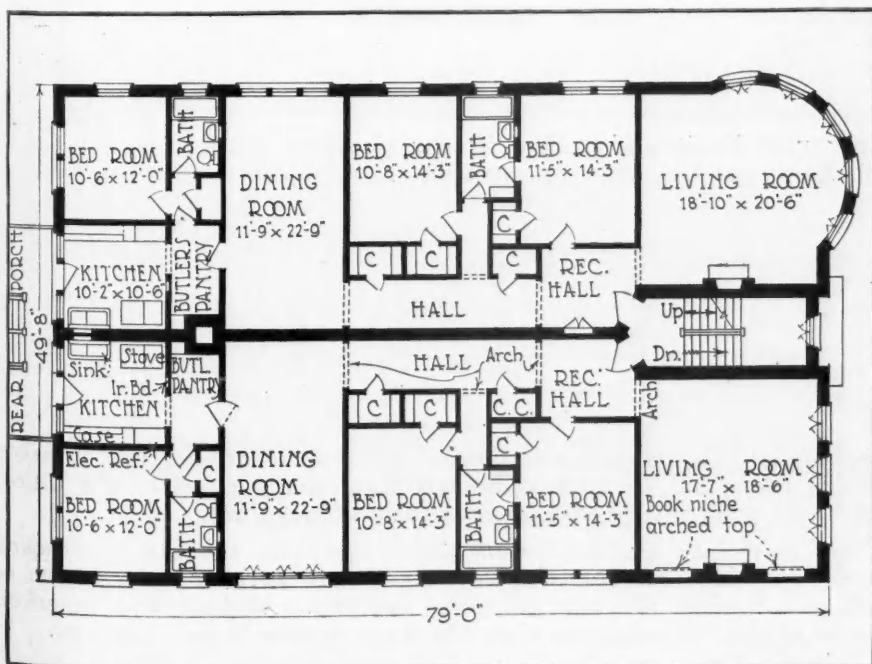
The architecture of the buildings on the east side of the street is Spanish—one in particular being a perfect California Mission type. They are finished in sanded stucco, with red tile roofs and decorative balconies—some iron and some of stained wood.

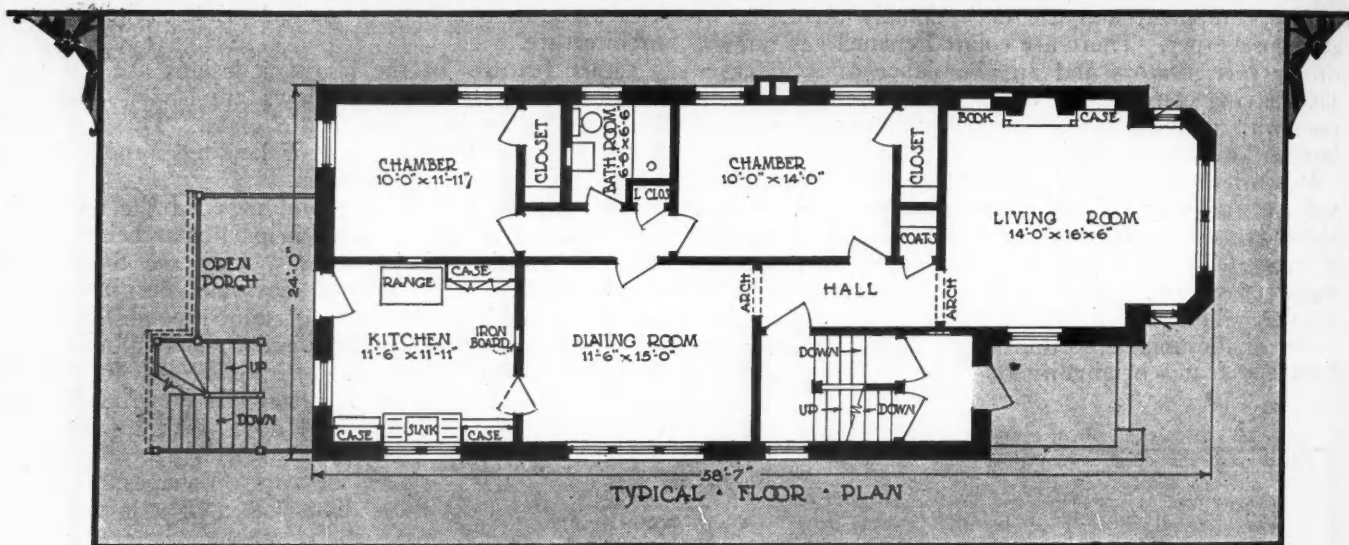
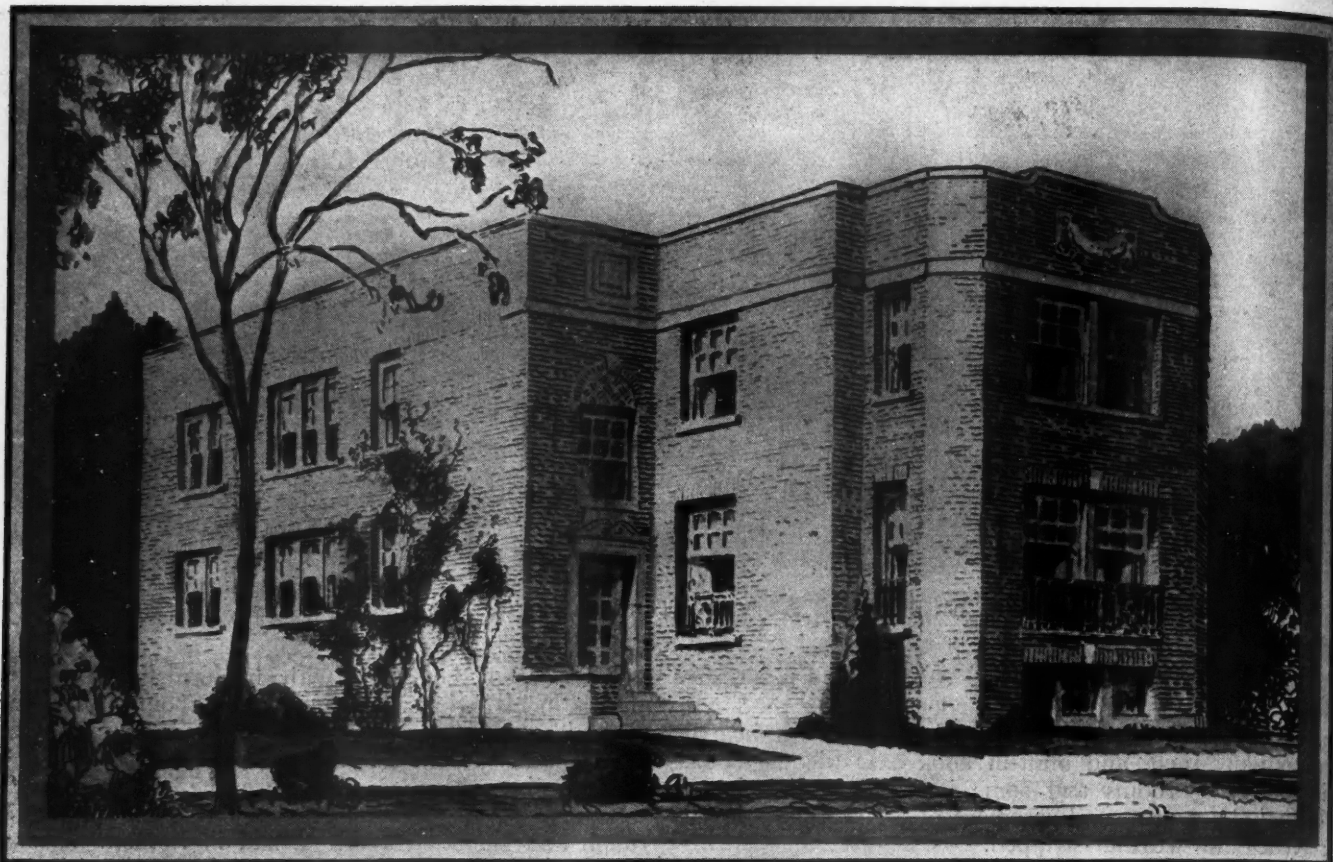
The entrance doors to these buildings are all of special millwork—very high class—of solid oak in antique effects. They have wrought iron hinges and door sets in period designs, also small lights of glass in special decorative shapes. One of these doors has a light in the shape of a lion rampant over a crown; others in the shape of a half-moon or a decorative medallion.

One entrance on the east side of the street is especially noticeable and costly. Being in the circular wall of a tower, the door is curved, with decorative panels carved around the top of the entrance arch. This door has wrought iron hinges.

This high class development has greatly increased surrounding values. The buildings have been appraised in value at \$80,000 per building, and have been financed by a \$45,000 bond issue on each.

A Typical Floor Plan for Six-Room Six-Apartment Buildings as Worked Out By Mrs. Kennett.





A Clean-Cut Two-Apartment Design with Five Rooms on Each Floor;
C. W. Lampe & Co., Chicago, Architects.

SERVICE TO HOME BUILDERS

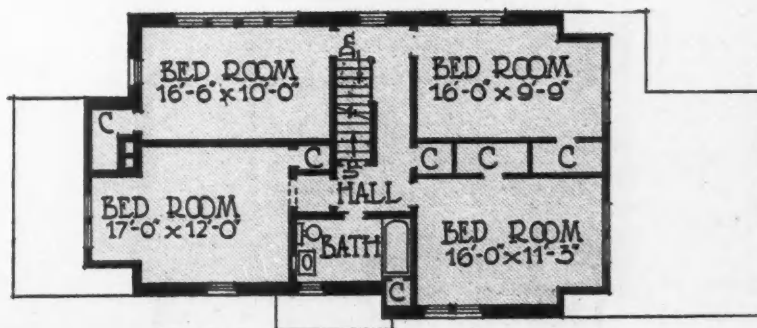
Throughout this magazine we present many building designs. A variety of home plans are included, selected from many parts of the United States and designed by various architects of standing.

The "American Builder" will gladly serve its readers by bringing them together with these architects if any further information or plans are desired for any of these designs. Address the American Builder Home Planning Service, 105 West Adams Street, Chicago.

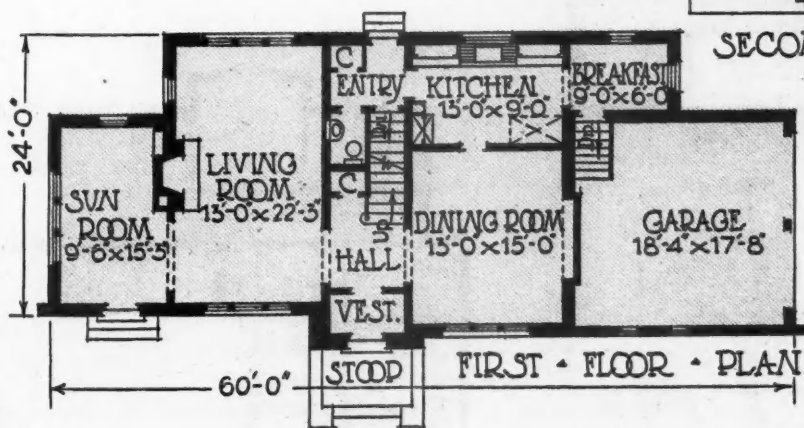
With Sweeping Roof Lines



Designed by
T. H. Maenner & Co.,
Architects
Omaha, Nebr.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Nine rooms and attached
double garage in this
home 24 by 60 ft.

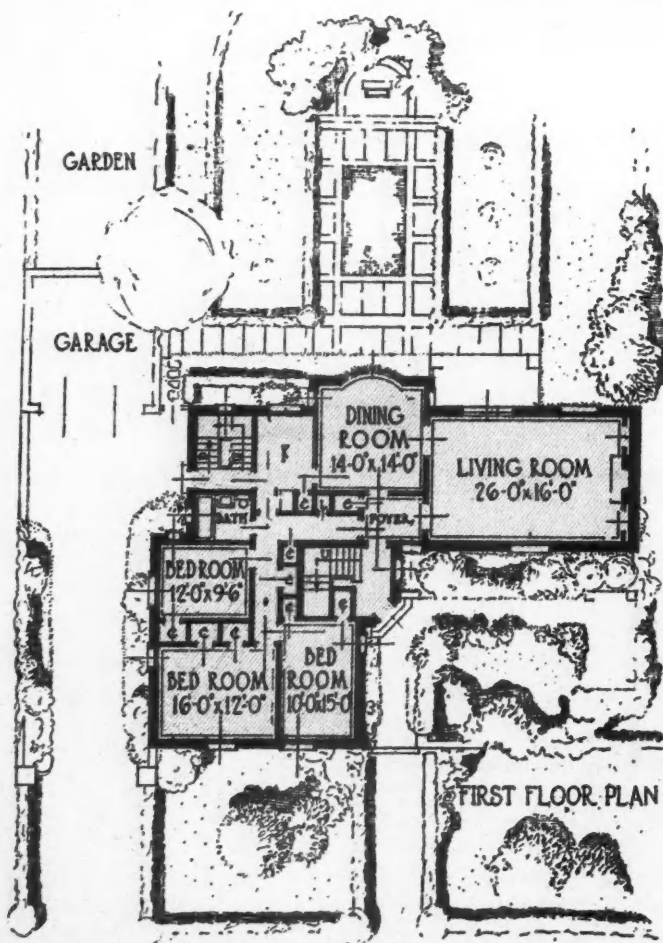
SIXTY FEET FRONTAGE MAKES THIS HOME IMPRESSIVE

First Prize Duplex House

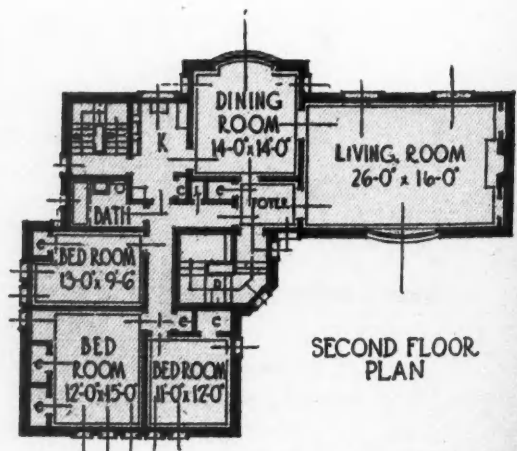
PHILADELPHIA T-SQUARE CLUB COMPETITION



Two six-room apartments are provided in this residential type building of concrete masonry construction and Portland cement stucco finish.



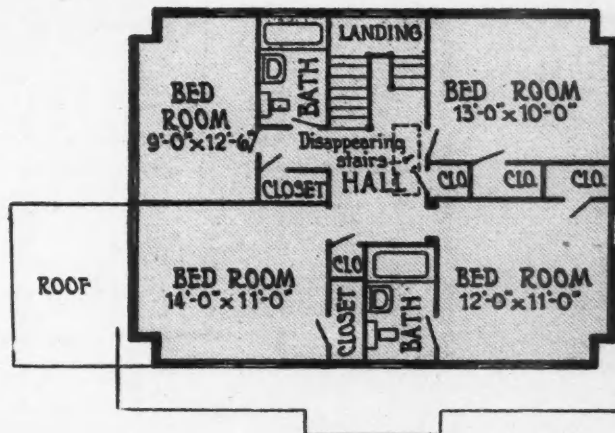
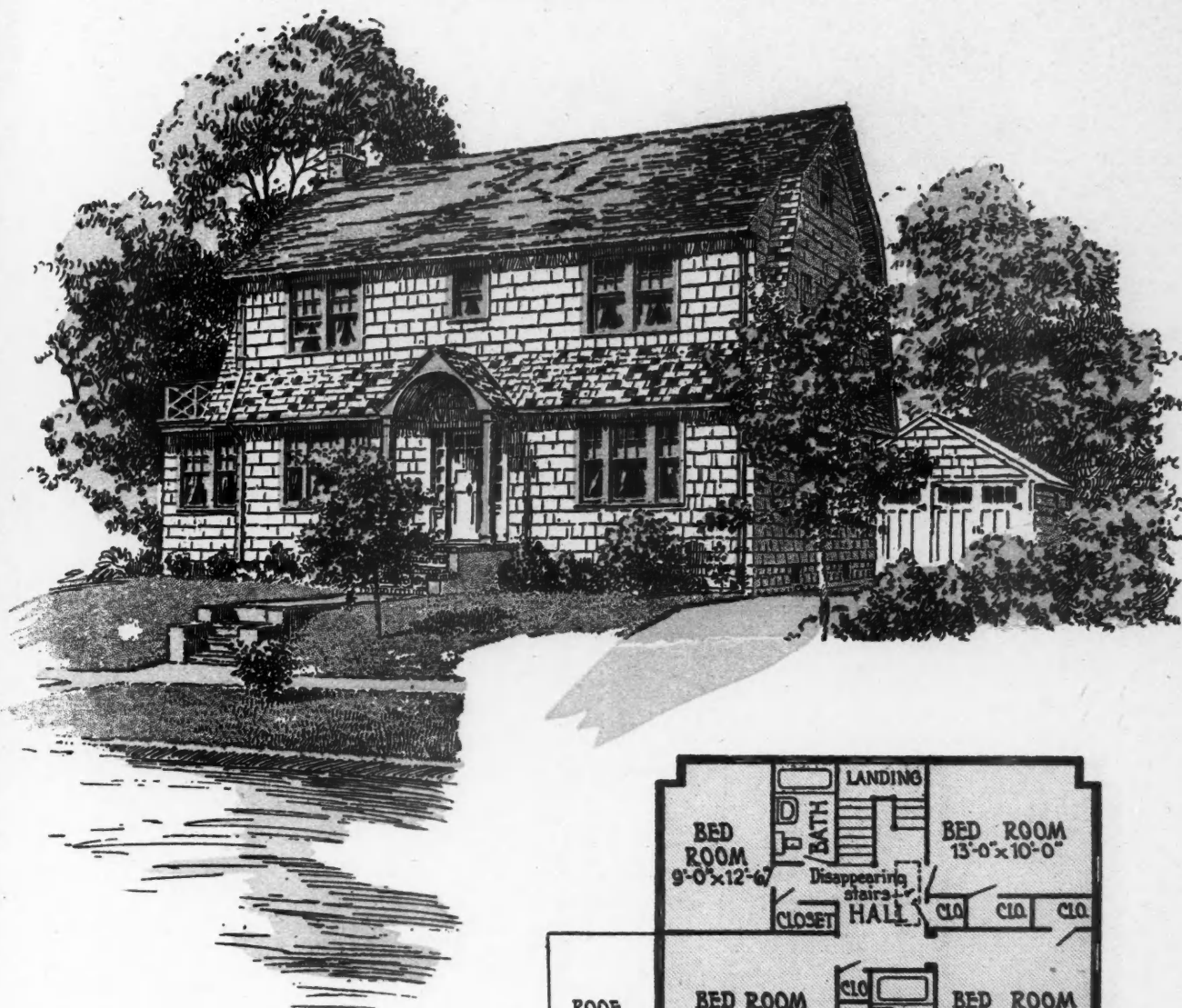
Designed by
ALFRED KASTNER
154 East 46th Street
New York City



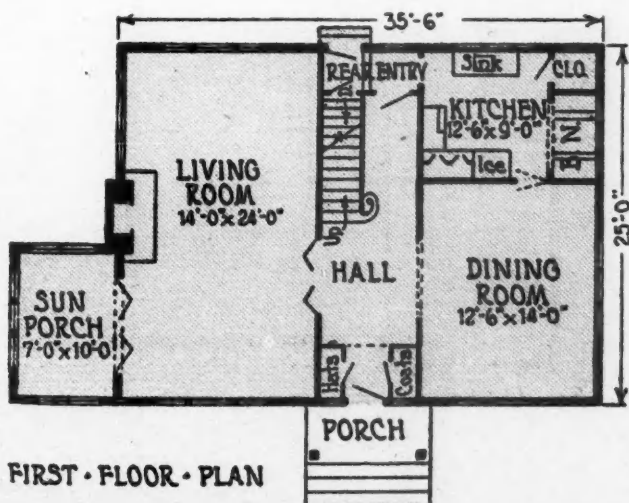
A DUPLEX DESIGNED TO HARMONIZE WITH PRIVATE HOMES

A Shingled Dutch Colonial Home

SEVEN ROOMS AND TWO BATHS



SECOND-FLOOR-PLAN

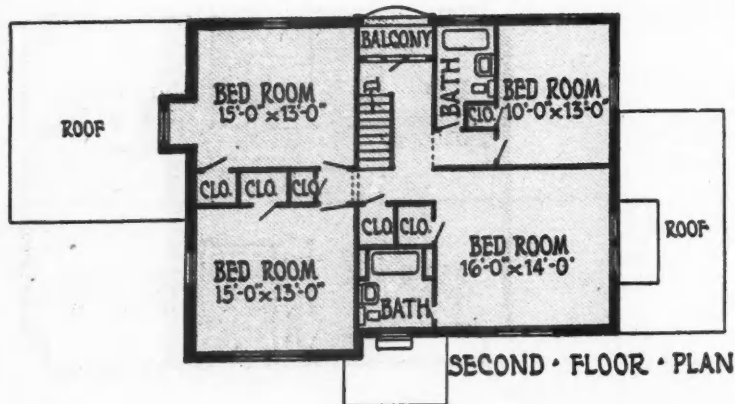


FIRST-FLOOR-PLAN

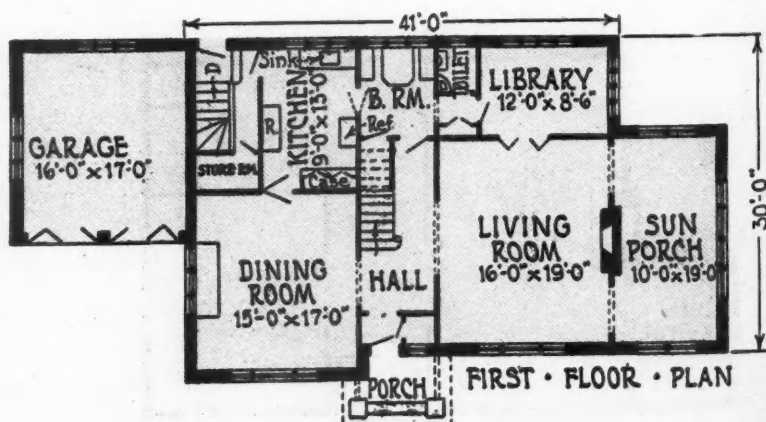
Designed by
The American Builder
Home Planning Service
105 W. Adams Street
Chicago

BALANCED DESIGN IN KEEPING WITH THE TRADITIONS

Half-Timbered Panels Attract



Nine rooms, two baths and attached double garage.



Designed and Built by
George & Company
Omaha, Nebr.

DIGNITY, GRACE AND COMFORT IN THIS FINE HOME

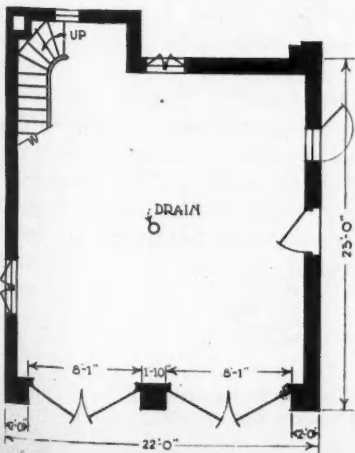


An Old English Garage

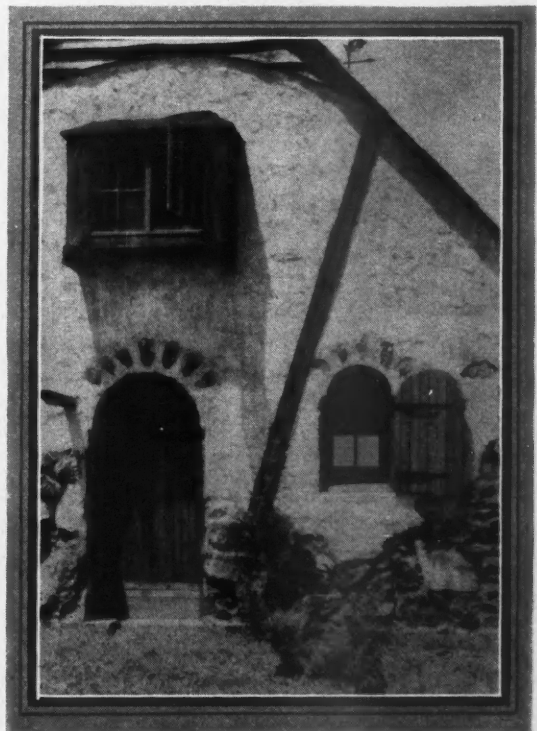
IT is estimated that about 300,000 private one and two-car garages are being built each year in this country. Most of them are anything but artistic. They may protect the car all right, but they certainly don't add much to the general attractiveness of the homeplace.

Now garages ought to have style. Autos have style. Owners are very fussy about how their cars look. Why not get some fun and satisfaction out of having a garage that's really artistic, too, and good to look at and in style with the house?

Did you ever see anything more charming than this Old English motor house? Two-car capacity and living rooms above for the chauffeur.



Double Garage of Very Individual Design Built for Mr. Kit Vickery, Joplin, Mo.





"Open to the Rafters", a Living Room at Stamford, Conn.; Shape, Bready & Peterkin of New York, Architects.



HIGH CEILINGS

THE height of style now seems to be a living room with ceiling ten to eighteen feet high. These are often known as studio living rooms because of their large high windows admitting light such as artists require.

Perhaps the American home-buying public has turned artist, at least they are showing a fine appreciation for real art in home design and home decoration. And the high ceiling living room, while a costly item, certainly does help to create a home atmosphere of distinction.

Many homes being built for sale, as well as those individually built, are featuring the studio living rooms. Many apartments, especially the co-operative apartments, secure a double height ceiling by planning the living room to extend through two full stories. With such an arrangement there is usually an ornamental stairway and an interesting balcony along one side of the room at the second floor level.

Double Height Beam Ceiling in the Home of Edwin D. Martin, Architect, Los Angeles.

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*Modified Barrel Ceiling, Story and a Half High;
T. H. Maenner & Co., Omaha, Architects.*

FOR STUDIO LIVING ROOMS

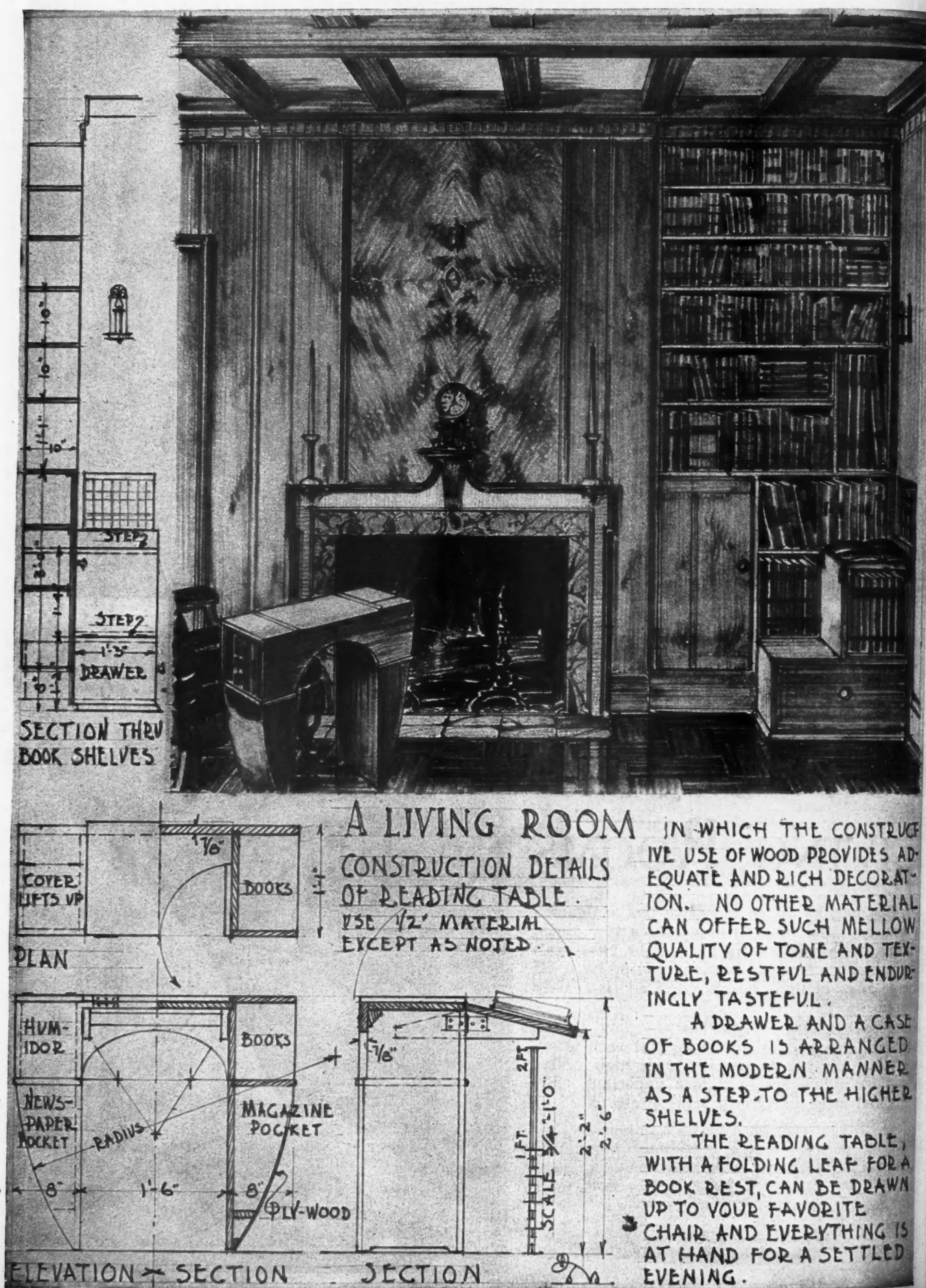
Ceiling heights of ten to twelve feet are gained by lowering the living room floor a few steps, making low head-room in part of the basement. Often the high living room is in a wing by itself where any ceiling height desired is easily secured.

Exposed rafters, rough hewn ceiling beams, barrel ceilings and other ornamental semi-primitive types are the vogue for such high ceiling rooms. Window design is also important, casements and large fixed sash being preferred.



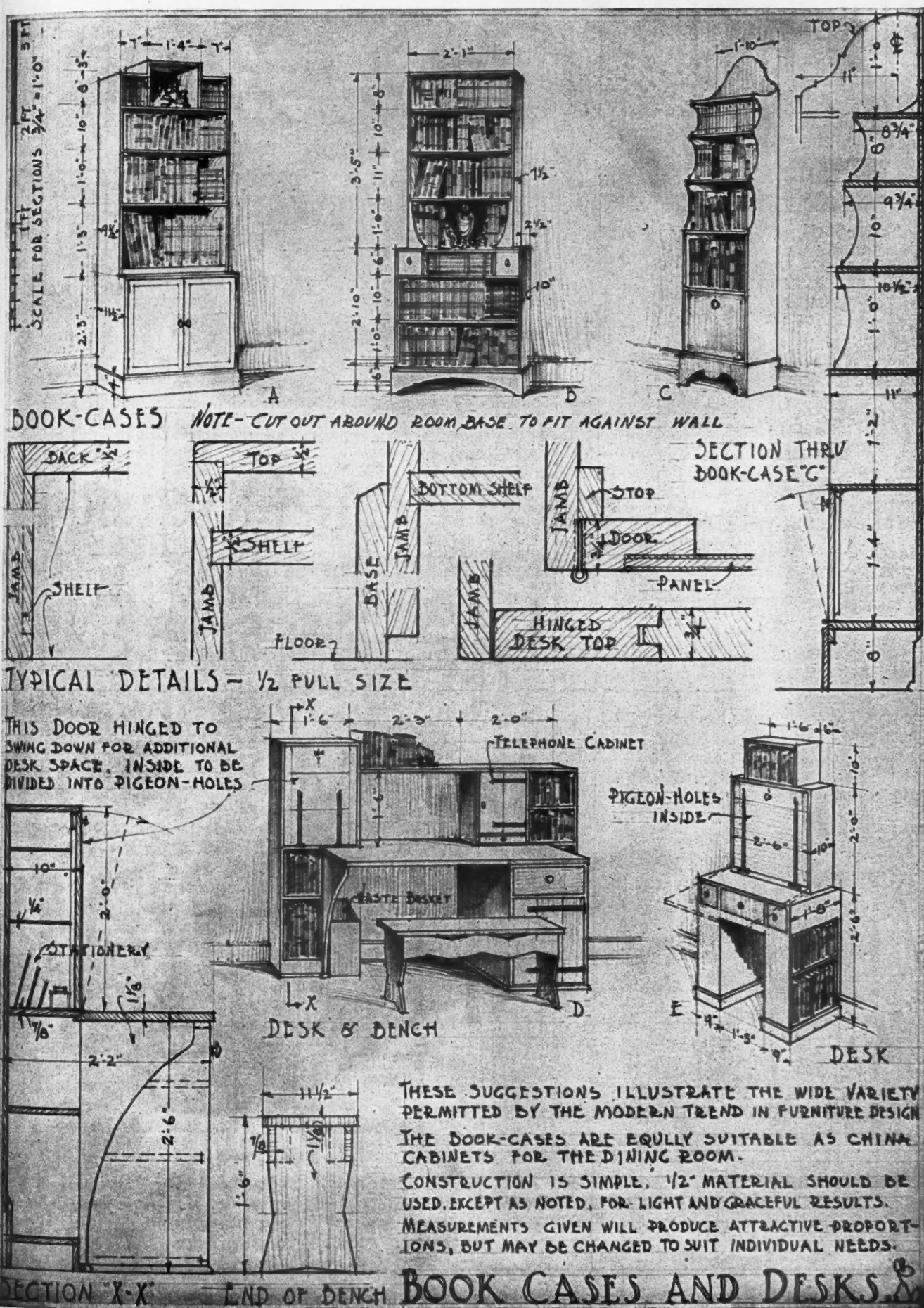
Modern Home Interiors

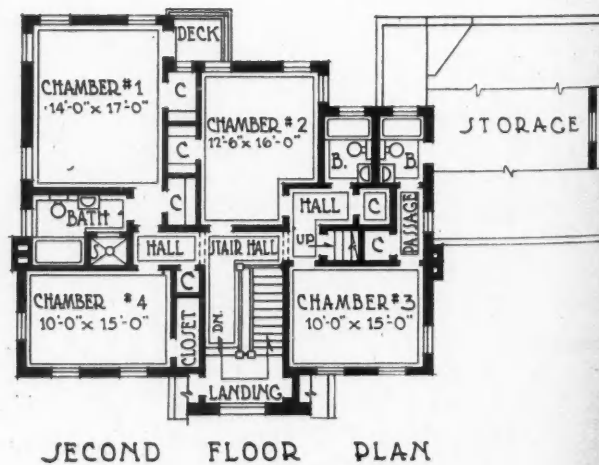
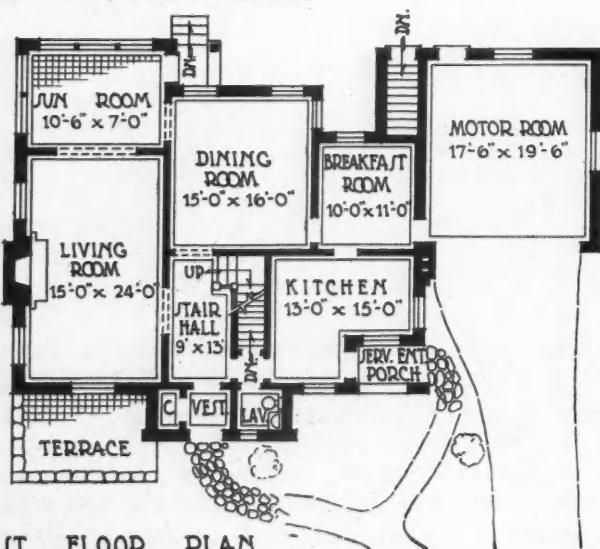
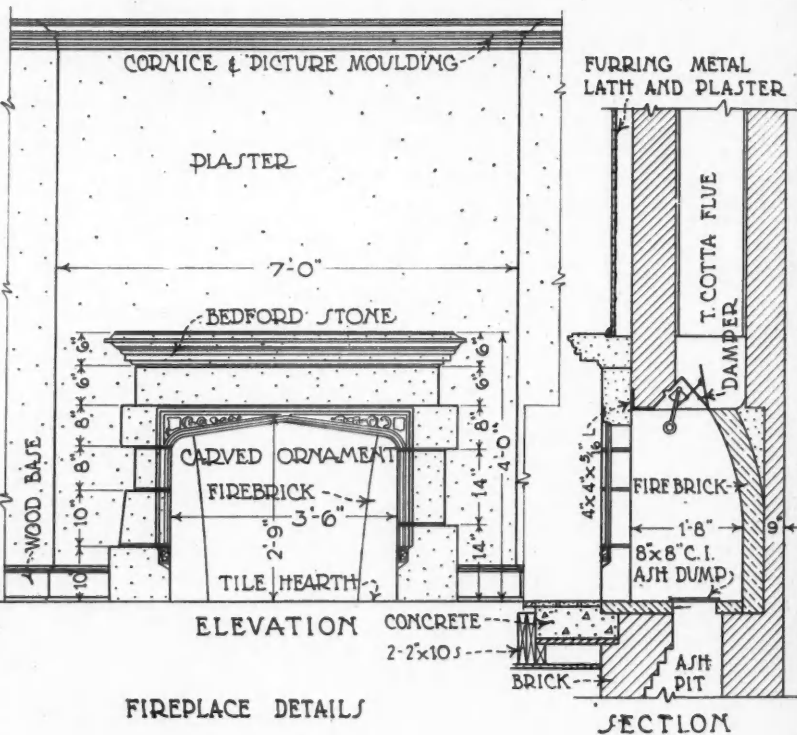
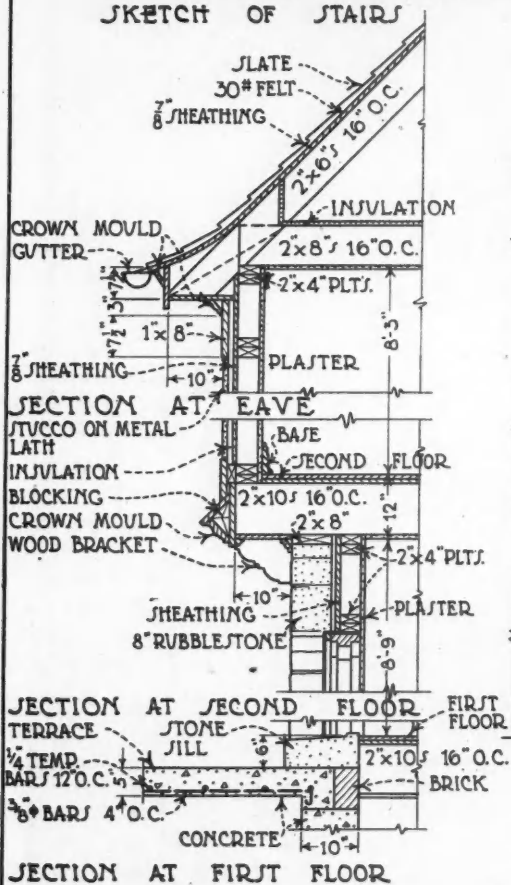
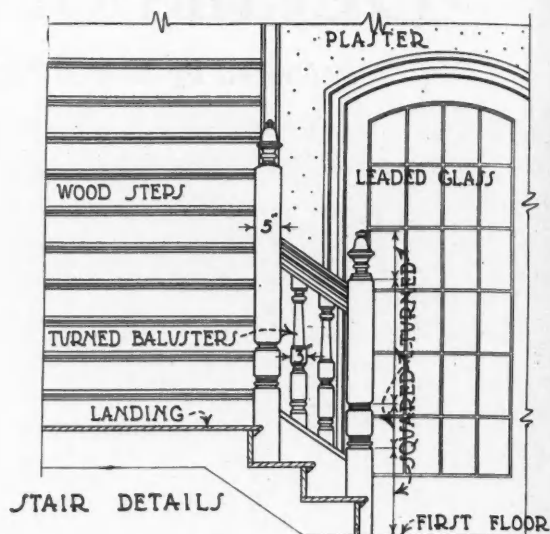
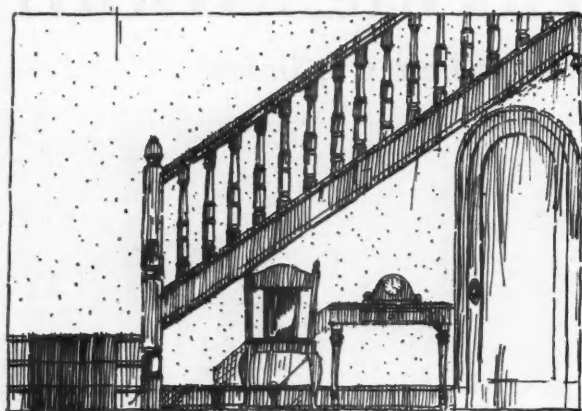
The Second of a Series of Plates

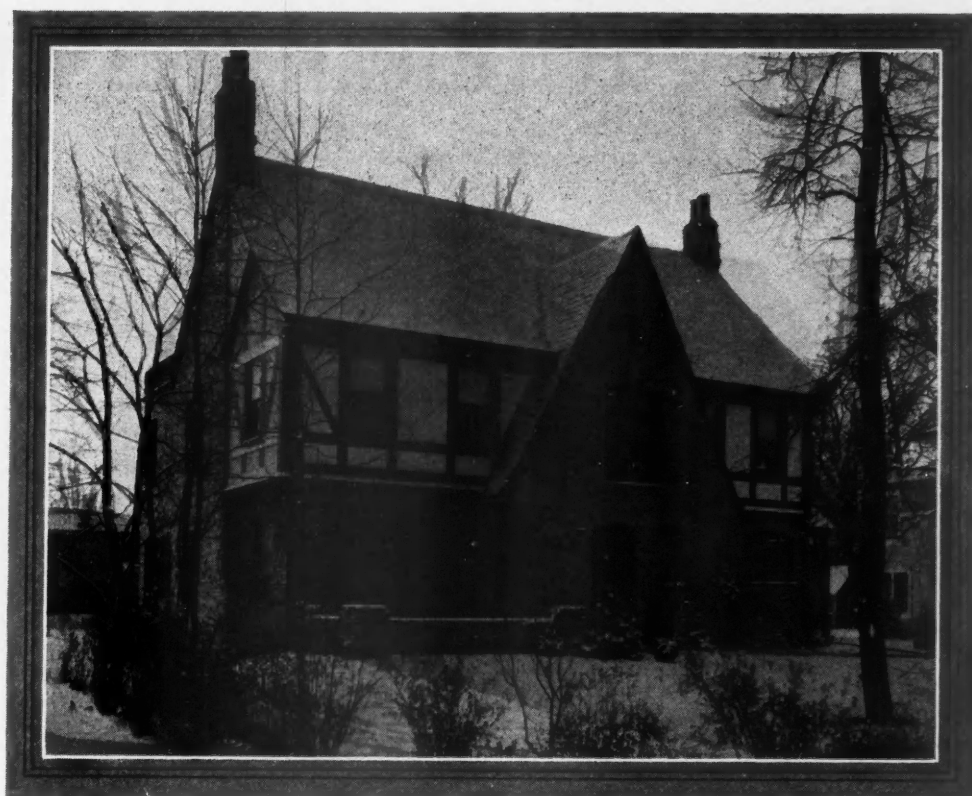


—Details of a Living Room

Prepared by Eldred Mowery and Richard G. Kimbell







Home of English Characteristics

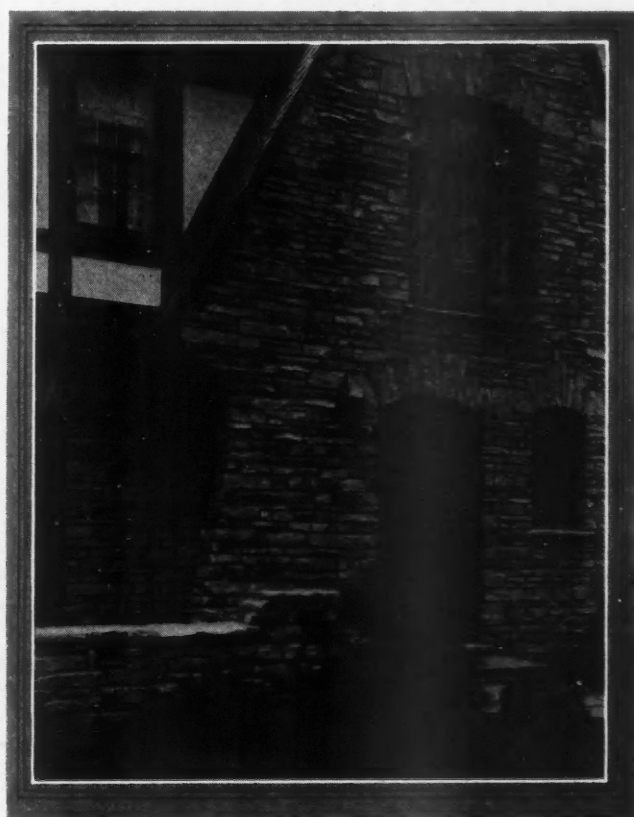
Plans and Details of Construction on Page Opposite

BY ALLEN E. ERICKSON, A. I. A., Architect

THIS home carries out the needs of the modern American family in a most interesting use of materials and a very convenient plan. (See page opposite.)

There are certain characteristics of the exterior design that stamp it English. Notice the sharp gabled entrance accentuates the entrance and upper stair-hall. It tells the story of the plan. The window and door openings are well placed and balanced, giving what is termed scale and proportion to the house. This entrance motive is placed directly in the center as shown by the plan, balancing it on either side are the openings or voids in proper proportion. The first story of these sides is carried out in the same stone as the entrance motive. It is the Wisconsin weathered lime stone of various tinted colors, bordering on a light cream. Some stone have water stains of a bright orange tint; this adds a great deal of warmth and color to the entire house. The upper part of the house is in plaster and half timber work. To the left, the chamber No. 4 over the living room projects beyond the stone, giving added room and a picturesque exterior, as may be seen from the detailed section on opposite sheet.

The details that make this house are the use of proper materials in the properly balanced design. The interior as well as the exterior carries out the English feeling. The fireplace mantel is a simple Tudor Gothic carved stone mantel. See the opposite page for a detail showing the proper flue and throat construction. The stairway is of a heavy English design and has been finished in a soft dull brown.

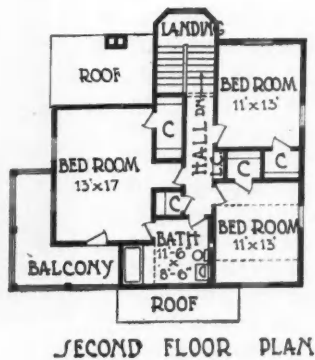
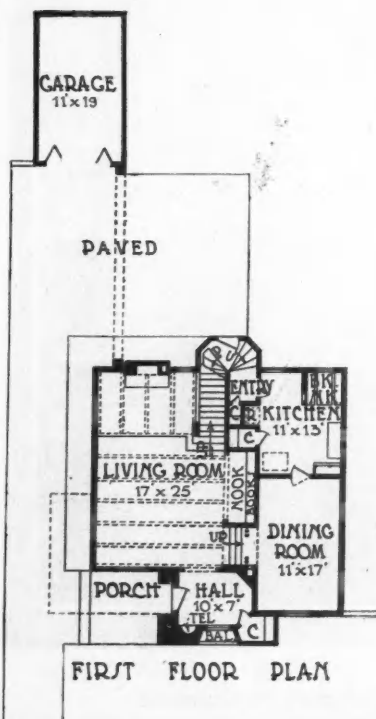
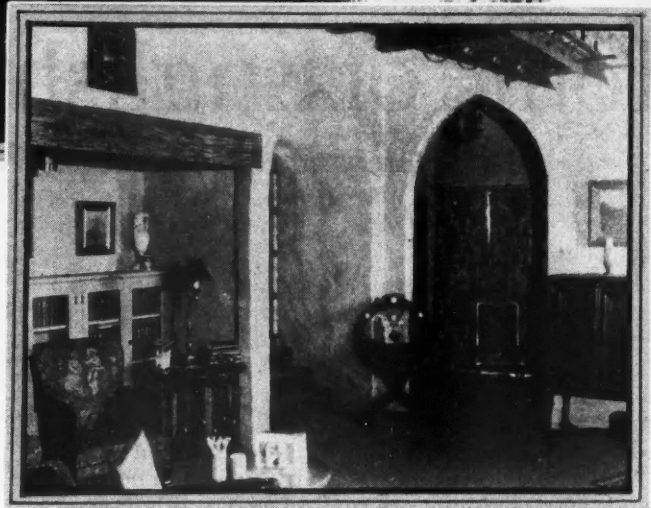


Detail of Entrance in Summer.



\$14,400 Spanish Home at Park Ridge, Ill.

CHARLES P. RAWSON
Architect



Architect's Description

1—House designed to accommodate family of three.

2—House of frame construction, insulated walls and roof. Composition floors in first story. Textured plaster. Tile baths. No interior trim. Ceiling beams cantilevered for balcony. Casements.

3—Walls—White Spanish plaster.

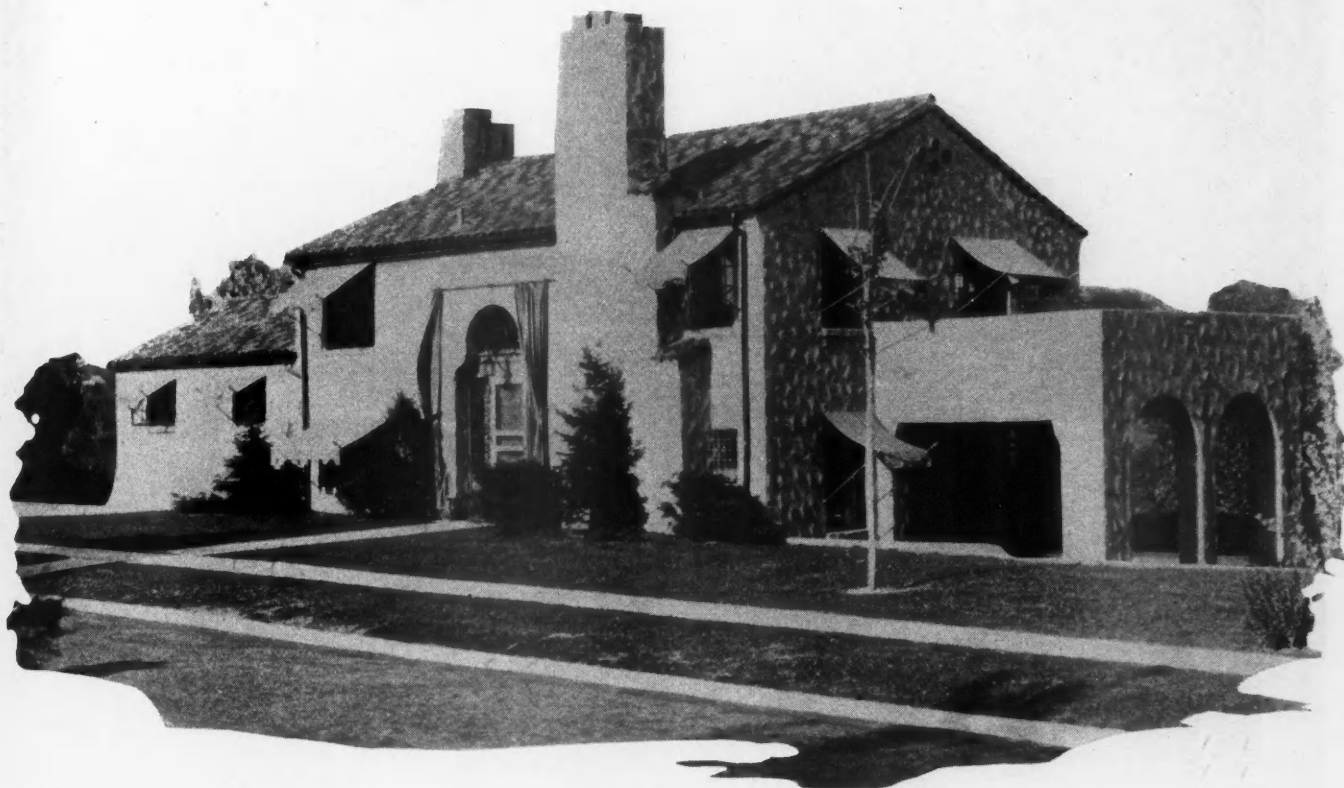
4—Roofs—Red tile in white mortar.

5—Outside woodwork painted blue, green and brown.

6—Interior view of living room shows book nook and arches into hall and dining room.

Two High Scoring Designs

In Chicago Builders' Exposition Competition



THE management of the Permanent Exposition in the Builders Building, Chicago, recently sponsored an architectural competition of unusual interest, in that the competing designs were those of homes actually built. The photographs and plans which were awarded the first and second prizes together with the twenty-four honorable mention exhibits have been placed on display in the Builders Building.

We have chosen the two accompanying designs as representative of this display—the Spanish type six-room home on the opposite page by Charles P. Rawson, architect, Chicago, and the Italian type home herewith by Clausen, Kruse & Klein, architects, Davenport, Iowa.

Architects' Description Davenport Home

1—Composition of family: Husband, wife, son, daughter and two maids.

2—Special construction problems: The hillside lot upon which the house was to be situated with west front and a desirable exposure to the east calls for a plan which should compensate for the decided slope in the lot. The street flanks the east and west lines of the lot. A quality house was demanded with accommodations usually found in more expensive houses only.

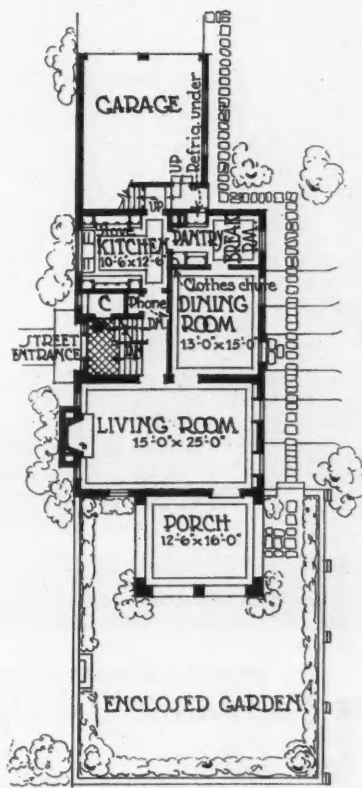
3—Material and color of exterior walls: Stucco over hollow tile colored a buff-tan.

4—Material and color of roof: Factory run Spanish tile in random variegated colors of reds, browns, tans and "fireflash."

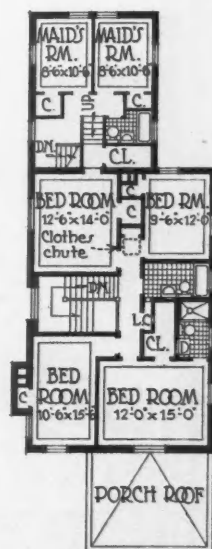
5—Color of outside trim, doors and windows: Outside trim consists of under side cornice and door frames, over all of which is stained a bluish-green. Iron grilles about the front entrance were left to rust and then lacquered. Doors are stained a bluish-green.

\$19,000 Home at Davenport, Iowa

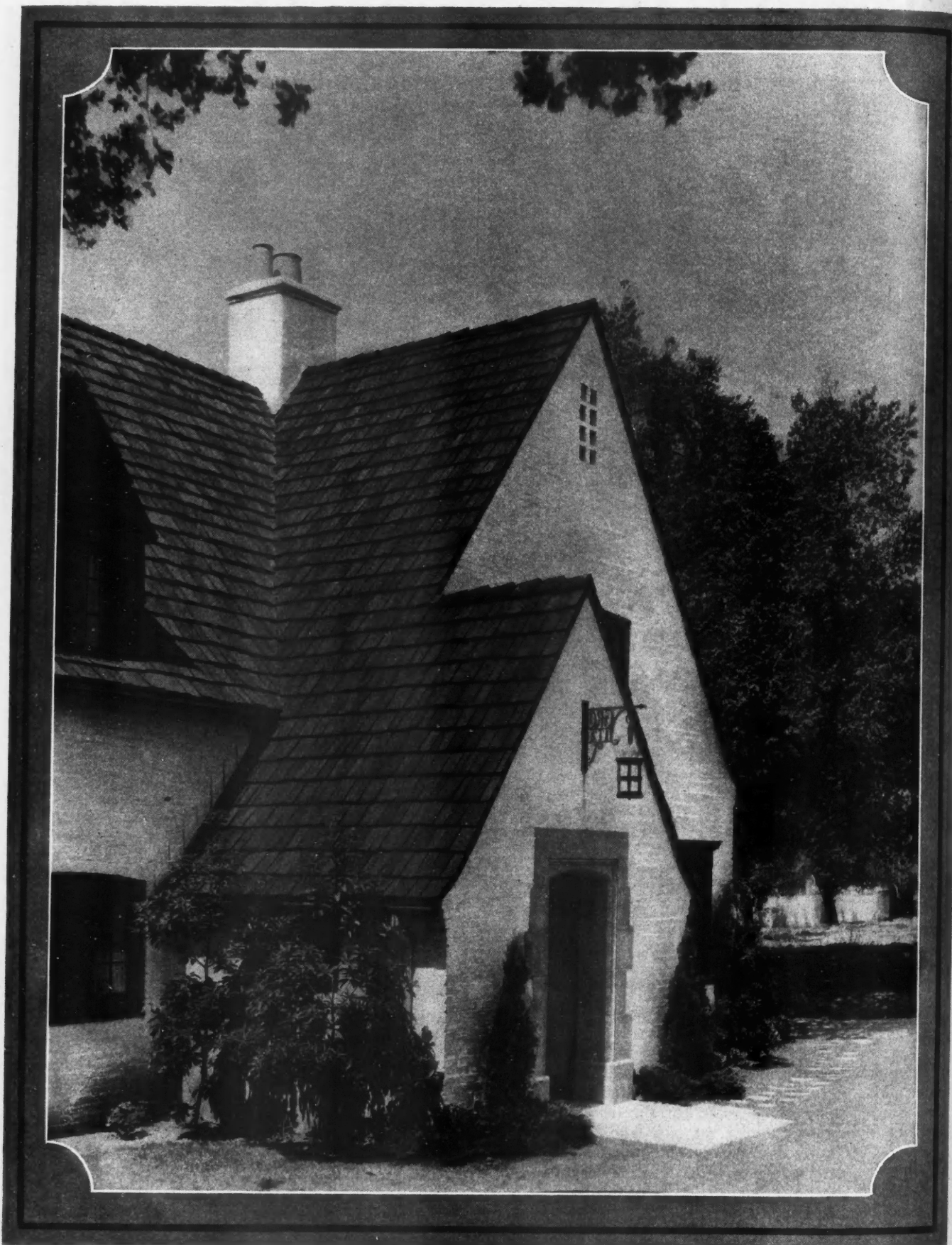
CLAUSEN, KRUSE & KLEIN
Architects



FIRST FLOOR PLAN



SECOND FLOOR PLAN



THE ENTRANCE DETAIL

The brick walls of the house have been painted over with a white cement paint which produces an uneven and fine texture. The stone entrance trim around the doorway, not having been made a conspicuous element, is a pleasing detail.

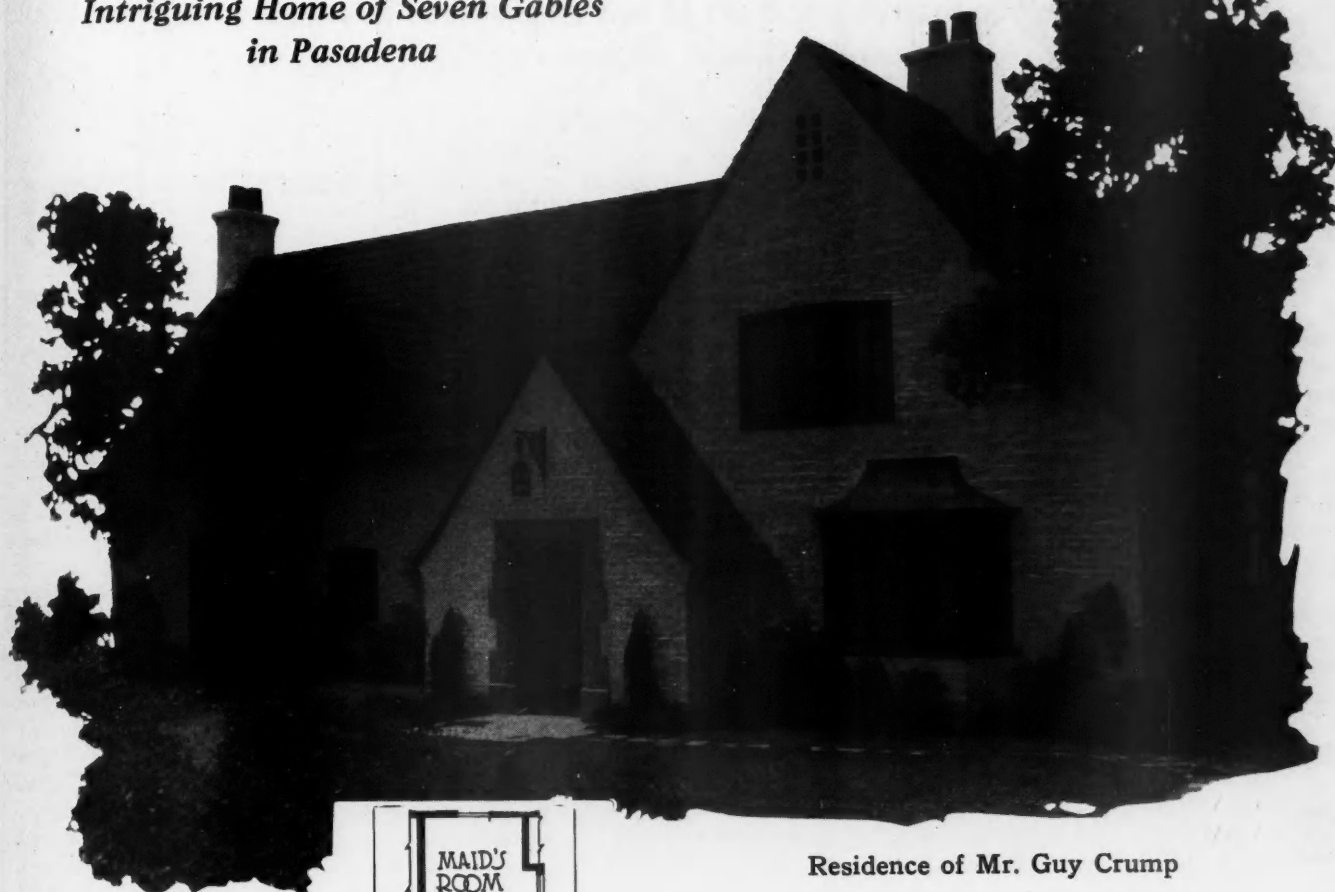
BATH
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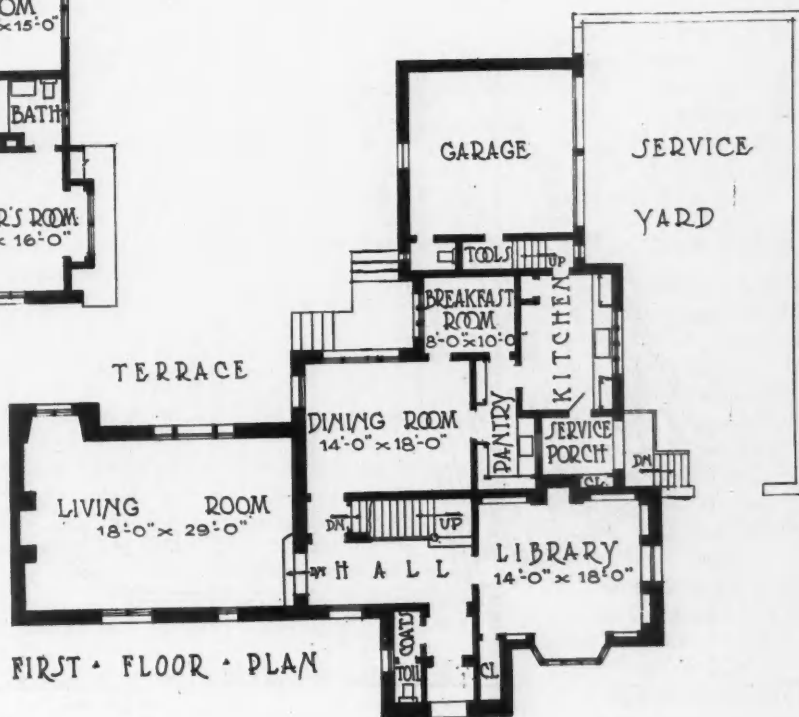
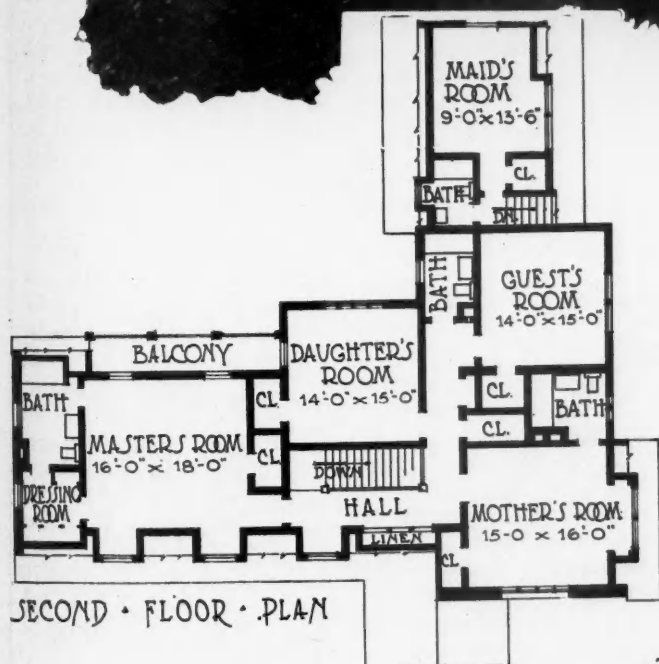
Of White-Washed Brick

*Intriguing Home of Seven Gables
in Pasadena*

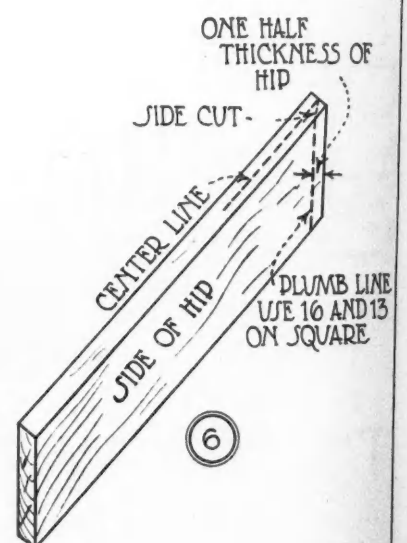
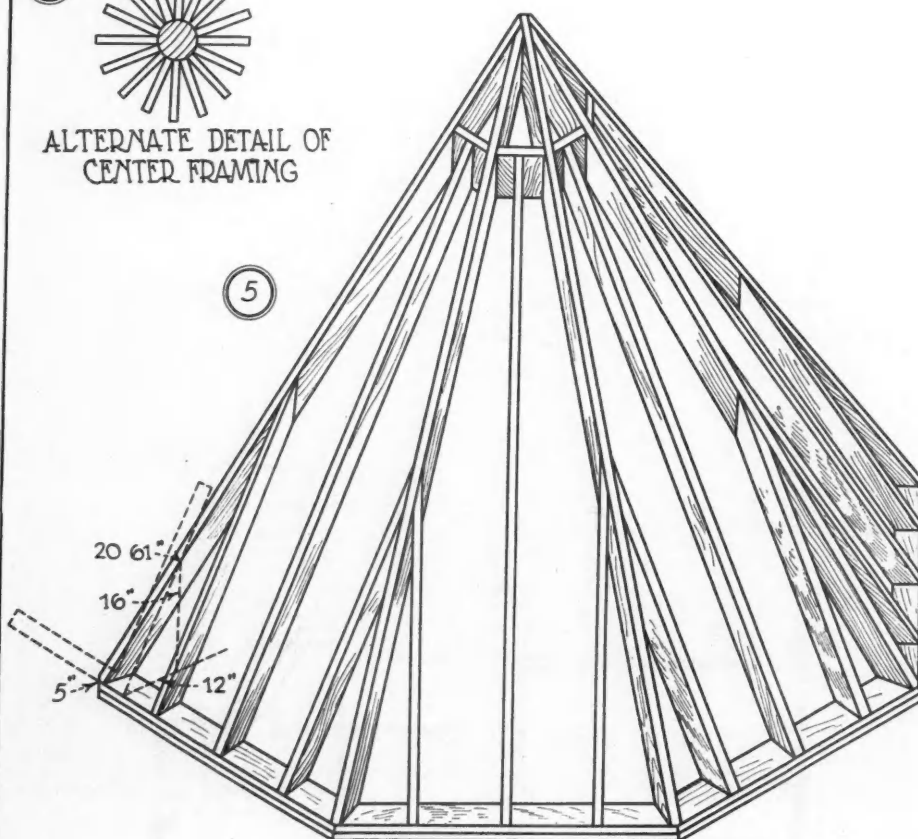
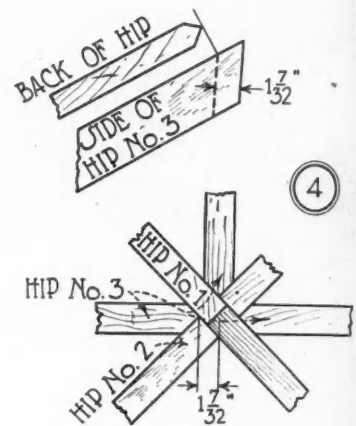
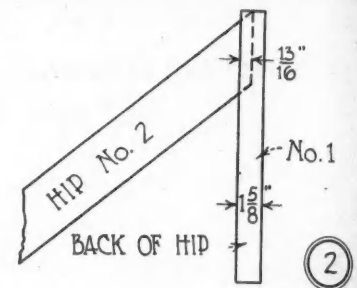
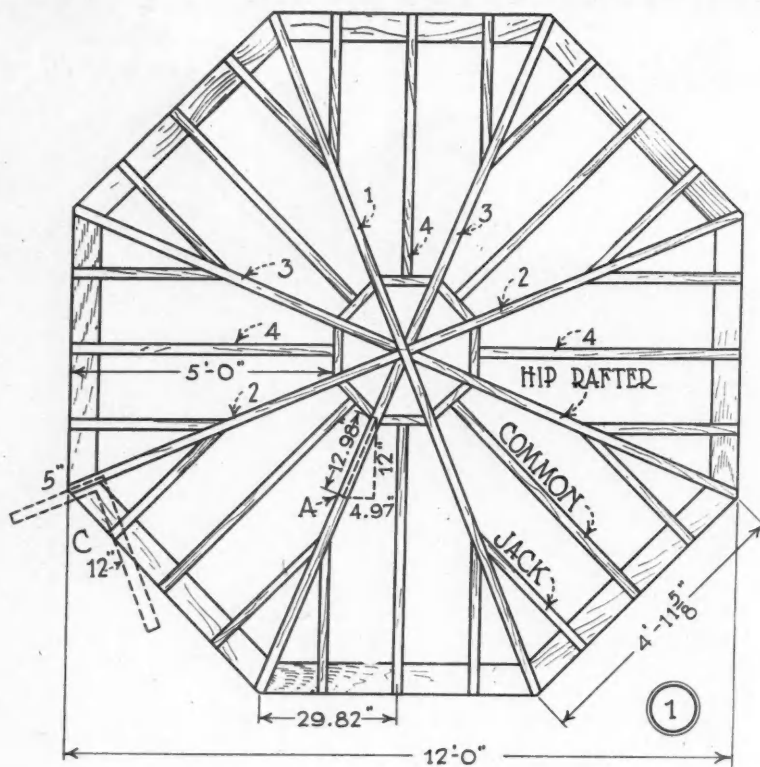


Residence of Mr. Guy Crump

JOHN D. ATKINSON
Architect



THIS delightful home is fashioned about a rambling floor plan which has been exceptionally well developed with the library placed away from the rest of the rooms. The lowness of the walls gives a snug appearance, and the manner in which the window frames have been built with a slight arch of the segment head which supports the brick arch lends considerable charm to these openings.



The Octagon Tower Roof Analyzed for Steel Square Framing.

Framing An Octagon Roof

*Detailed Analysis by Use of the Steel Square of Roof
Illustrated on Page Opposite*

BY JOHN T. NEUFELD

IN OUR LAST discussion we compared the square, hexagon and octagon roof plan. We will now take a more definite problem and show how each part of the octagon roof is figured and cut. The roof illustrated by plan and isometric view in Figs. 1 and 5 will be used as a problem. This roof is 12 feet 0 inch wide and 8 feet 0 inch high. This gives the common rafter a run of 6 feet and a rise of 8 feet 0 inch in 6 feet 0 inch, or 16 inches per foot. The pitch is the rise over the span $= 8/12 = \frac{2}{3}$. Our first problem is to find the length and cut for the plate.

In Fig. 1 at A we show a small triangle, one side of which is equal to 1 foot or 12 inches of run of the common rafter. We note that the side that is parallel to the plate is 4.97 inches long and that the length corresponding to the run of the hip is 12.98 inches long. As we learned in our last discussion, the line perpendicular to the run of the common rafter is called the tangent. For every foot of run we have 4.97 inches, length of tangent. The total run in this case is 6 feet. Therefore the tangent is $6 \times 4.97 = 29.82$ inches. The length of the plate of each side is two times this $= 2 \times 29.82$ inches $= 59.64$ inches $= 4$ feet $11\frac{5}{8}$ inches.

Some of our readers may have difficulty in changing decimal parts of an inch to ordinary fractions. This is quite simple. To show this we will change the above .64 of an inch into a fraction that can be measured with an ordinary rule. Changing .64 to sixteenths we multiply .64 by 16 and get 10.24. Therefore .64 inch is equal to $\frac{10.24}{16}$ inch, say $\frac{10}{16}$ or $\frac{5}{8}$ inch.

The joint at the corner of the plate is parallel to the run of the hip rafter. Therefore the triangle which is described by the run of the common rafter, the plate and the run of the hip rafter, also describes the cut for the plate. This would be laid out by using 12 on the blade and 4.97 or 5 on the tongue of the square. See Fig. 1 at C.

The Hip Rafter

The next in order for framing is hip rafter No. 1. The hip rafter has a run of 12.98 inches for every foot run of the common rafter. The length of hip per foot of run of common rafter is generally taken from a table similar to the one given here. Note carefully that the length of

hip is given per foot of run of common rafter and not per foot of run of hip rafter. For a two-thirds pitch the length of hip is given as 20.61 inches per foot run of common rafter. The total length of the hip rafter is $20.61 \times 6 = 123.66$ inches or 10 feet $3\frac{5}{8}$ inches.

In laying out the cut for the hip rafter we use the same principle as we have been using on a square-cornered roof. The run of the hip and the rise will describe the cut for the top and bottom. We may take the total run and the total rise in feet and use these numbers on the square or we may use the run of hip per foot run of common rafter, which is 13 inches, and the rise per foot run, which is 16 inches. Thus 13 and 16 taken on the square will lay out the seat cut and also the top or plumb cut for the hip rafter. There is no side cut for the two hips numbered "1."

The two hips numbered "2" will be the same in length with the exception of one-half the thickness of the first hip. This can be deducted as shown by Fig. 2. One-half the thickness of a rafter $1\frac{5}{8}$ inches thick is $13/16$ inch. This is measured horizontally as shown. The hips numbered "3" on the plan are also similar in length, but a deduction must also be made as shown in Fig. 4. First we measure the length of deduction on a horizontal plan. This distance, $1-7/32$ inches, is then measured on a horizontal line on the side of the rafter as shown in Fig. 4.

The length thus found is to the longest point of the rafter. Fig. 6 shows how the side cut is laid out.

The Common Rafter

Rafter No. "4" may be considered as a common rafter. This does not run to the center of the roof, but frames to a header piece. The run for this rafter is 5 feet 0 inch; length per foot run is 20 inches; length is $20 \times 5 = 100$ inches or 8 feet 4 inches.

The Jack Rafter

The jack rafter would in cases like this be set in between rafter No. 4 and the hip rafter, it would therefore have a run of one-half the total run of the roof or 3 feet. The length would be 20 inches $\times 3 = 60$ inches $= 5$ feet 0 inch.

There is also a side cut to be made for the jack rafter. This is illustrated in Fig. 5.

A square is placed so
(Continued to page 90)

Problems

1. An octagon roof has a span 20 feet 0 inch. What is the length of the plate for one side?
2. What numbers on the square will give the cut for the plate at the corner?
3. If the above roof has a one-half pitch, what would be the length of hip rafter No. 1?
4. What numbers on the square would lay out the plumb and seat cut for the common rafters?
5. What numbers would lay out the plumb and seat cut for the hip rafter?

Answers

1. The length of the plate on one side is 10×4.97 inches $\times 2 = 99.40$ inches $= 8$ feet $3\frac{5}{8}$ inches.
2. The numbers 5 and 12 taken on the square will give the cut for the plate.
3. The length of hip per foot run of common rafter is 17.69 inches for a one-half pitch roof. The run is 10 feet 0 inch. The total length of the hip is $10 \times 17.69 = 176.9$ inches $= 14$ feet $8\frac{7}{8}$ inches.
4. The number 12 and 12 will lay out the plumb and seat cuts for the common rafter.
5. The numbers 13 and 12 taken on the square will lay out the plumb and seat cut for the hip rafters.



Questions and Answers

This Department Conducted by
V. L. Sherman, Engineering Dept. Lewis Institute

Have You a Question You Would Like to Have Someone Answer?

Have You An Answer to Any of the Questions Listed Below?

QUESTIONS TO BE ANSWERED IN THE OCTOBER ISSUE

Give Us Your Answer—Those Published Will Be Paid For.

1. Please show a method for flooring a shower bath over a wood floor.
2. How is it best to frame the curved roof shown in the picture? (Fig. 1.)
3. I wish to stucco an old brick chimney using expanded metal lath. How should I arrange for the flashing?
4. Can the concrete-slab roof shown in the sketch (Fig. 2) be built without danger of its cracking?
5. What construction can I use to build a light beam for a porch roof? The span is 22 feet.
6. Can one soil stack be made to vent fixtures from the first and second floor bathrooms if they are in line or nearly so?
7. When building a frame house and using steel joists and posts, how much shrinkage should be figured in the framing? Is it any less than when wood joists and posts are used?
8. If I hire a surveyor to set the batter boards for a house and later find that I have gone outside my own property lines while building, who is legally responsible for the mistake?

SEE SEPTEMBER FOR ANSWERS TO JULY QUESTIONS

Following are the questions asked in the June issue, and their answers

The editor of this department has been justly called to account for failing to mention the "dead-line" in the first, or June issue, of this department. We stated at that time that the questions posted at the top of the page would be answered the second month following, and that this would give the readers ample time in which to frame their replies. Press-time for the department is such that answers should be in before the third of the month preceding publication. That means about four weeks to get the answers in for publication. And the answers published will be paid for. We also wish to restate the fact that we are just as interested in questions, and that all questions will be answered by mail from this office whether they are posted for publication or not.

Question: How can a retaining wall along a sunken garage-drive be made safe from frost heaving?

ANSWER: If a retaining wall is treated about the same as a house wall, except that a lack of cross-supports must be considered, no harm should come from frost heaving. The lack of support from within means that the wall should be built with a wider footing and that the center of gravity should be lowered by making the wall heavier at the base than at the top. Unless the wall is too high this will make it safe so far as tipping out is concerned. But the wall and the footing should be kept dry. It should not absorb moisture during mild weather so that it will crack with the frost. As I show in the sketch (Fig. 3) it should have a heavy coat of asphalt on the dirt side, down the footing, and through to the roadway. The wall should not be entirely brick, but brick can be used as veneer, if desired. A broken tile should be run along the footing as in any foundation, and a gravel fill thrown next to the wall to allow for quick drainage. Standing water is nearly always the cause

of heaving, and when a wall is already loosened up by internal frost the results will show for themselves. G. M.

Question: In arranging stairs, are there any rules regarding landings or locations of landings, or the number of treads to be used to approach landings?

ANSWER: If I am not impertinent I would like to say that headroom, width of stairs, uniformity of risers, and suitable lengths for treads are much more important than any of the rules in the question you ask. But there is this to say about it: A landing ought not to be taken off the first riser. To a stranger it is awkward and can cause stumbling, since it is very uncommon. At least three risers should be used to reach any landing. If a stair is long, landings make it seem shorter. They make the stairs easier to climb. If possible, place the landings just above the middle of the height. And speaking of winders, of which you were not, never place them near the head of the stairs for the children to fall over and down the stairs. V. L. S.

Question: Why are bankers disposed to examine very carefully into the construction of new homes?

ANSWER: Briefly, there are two reasons bankers are interested in the details of construction of new homes. In the first place, of course, the better the construction the better the security. In the second place, the better construction the more satisfied are the purchasers and the more apt are they to keep the house and increase their equities.

Bankers ordinarily loan on first mortgages, making a loan that runs for five years with little or no reduction of principal. If the house is poorly constructed the value of the security is apt to be impaired, and if foreclosure becomes necessary the banker must consider extensive repairs, as well as redecorating, legal expense, past due interest, past due

taxes, tax penalties, and unpaid insurance premiums. With impaired security there is a real possibility of loss in a poor market when all these items are considered.

There is less danger of foreclosure on well built homes. They attract a better class of careful people who are more apt to keep up their payments regularly. As most small homes are built by contractors, many of them of small financial responsibility, and sold on easy payments, it is very desirable that the people purchasing be satisfied with their purchase and disposed to continue their payments regularly. Otherwise there is a strong possibility of the purchasers moving out, and the house becoming again the property of the builder, who may not be in a position to carry it.

L. A. CLARAHAN,

Vice-president, Oak Park Trust and Savings Bank, Oak Park, Ill.

Question: Is there any way to prevent the contents of backed-up sewers from rising through basement drains?

ANSWER: The writer designed a "contraption" that does the work. The water in the sewer, of course, rises, and when it rises there is a pressure which should be taken care of. For this reason check valves on these lines so near the sewer level are not always satisfactory. In the sketch (Fig. 4) a drain casting is shown securely cemented on the end of the sewer and also bolted to the floor, so there are no cracks whereby the water can escape. Above the grating a collar is threaded for a pipe which may be screwed in at any time. The water may rise in this pipe as high as necessary since the pipe is open at the top. When not in use the pipe is daubed at the end with a little grease and looped on the joists above the basement drain.

GEORGE ALEXANDER ROSS,

318 N. Ridgeland Ave., Oak Park, Ill.

Question: Must any regard be paid to the location of soil-stack outlets in the roof?

ANSWER: In some towns the regulations require a distance of 12 feet or more from the soil stack opening to the nearest window, door, or chimney-cap. There is still some argument about the effect of sewer gas, and maybe it is just as safe to regard such a rule. But a soil stack would never be placed where it is likely to be stopped by a down-draft, say at a low spot in a valley, or too far down on the roof. And it should not be placed where there is a chance of its being partly covered by snow or ice. It will frost over in cold weather fast enough, anyway. For the sake of looks, soil stacks can be kept off the front of the roof by carrying them up between the rafters and then taking them back of the ridge.

V. L. S.

Question: In what way are power hand-tools a benefit to the smaller contractor?

ANSWER: The recent rapid development of power hand-tools which make the contractor and builder lay out his work instead of just "going along" has helped make of the smaller contractor a much better business man. The small builder who is getting the business and making money now makes practically everything that goes into the job with

the exception of doors and some items that can be produced at lower costs in mills.

Under the classification, "power hand-tools," the most popular machines are the electric saw, jointer, and band-saw. The fact that so much of the special cabinet work now so popular in homes can be built right on the job without the complication of long delays involved in ordering from the mill has invited the slogan, "Built homes—not houses."

On the cheapest bungalows a saving of thirty to thirty-five hours is often possible on framing alone by using this type of equipment on such operations as squaring and notching joists, trimming sub-flooring, squaring studding ends, squaring studding for window openings, cutting sheathing to lengths, ripping to widths, and other similar operations which are common to the small contractor. Out of waste material a few moments work with these small power machines produces the necessary bridging or grounds.

By ordering lumber in width of 8 and 10 inches and standard lengths everything necessary in the way of trim, kitchen, library and wall cabinets, ironing boards, linen closets, clothes chute, breakfast sets, radiator covers and the many other convenient and attractive features, that make the homes instead of just houses, are easily produced.

J. D. WALLACE,

President, J. D. Wallace & Co., Chicago.



FIG. 1 CURVED PORCH ROOF

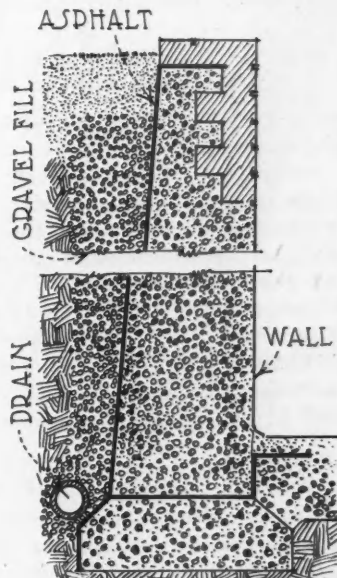


FIG. 3 RETAINING WALL

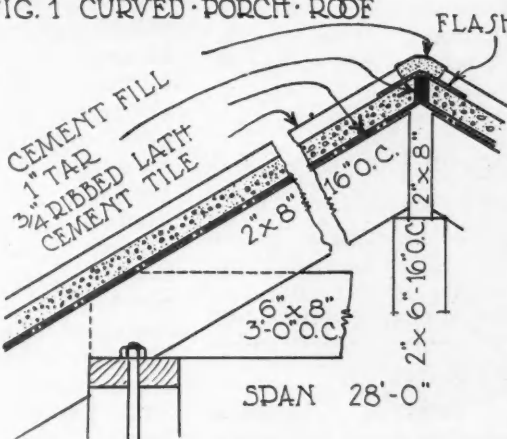


FIG. 2 CEMENT SLAB AND TILE ROOF

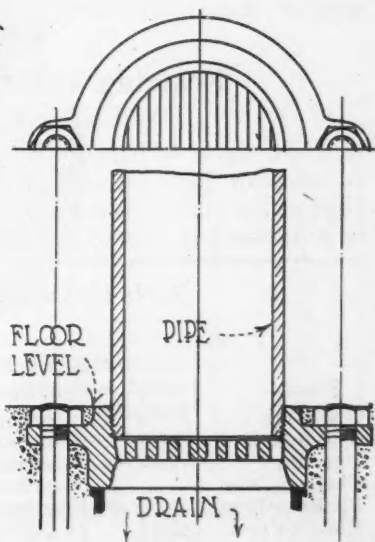


FIG. 4 BASEMENT DRAIN

Question: Is there any type of window glass through which more of the sun's rays pass than ordinary?

ANSWER: During the past few years many window glass substitutes have been placed on the market. These window glass substitutes for the transmission of the vitally active ultra-violet rays from the sun, which are entirely cut off by ordinary window glass, vary from fused quartz to glazed cheesecloth. A series of tests made to determine the effectiveness of these substitutes after they had been in use for one year, indicate that about one-half of these have deteriorated in this period to about 5 or 10 per cent of their original effectiveness. After this period the transmission remains fairly constant.

The various substitutes for the transmission of ultra-violet rays of the sun range in price from approximately the same cost as ordinary glass up to many times the cost of ordinary glass, and the value with respect to health is well represented in the statement made by investigators that it would be necessary to expose the body to light passing through some of these substitutes for from 15 to 20 hours to obtain the same benefit that would be derived from 2 minutes exposure to direct sunlight. In most parts of the country the amount of ultra-violet in the winter sun is so low as to make these substitutes entirely ineffective during the winter season.



ALFRED O. STOEHR,
Elmhurst, Ill.

Institute Elects Officers

AT the annual meeting of the Concrete Reinforcing Steel Institute the following officers and directors were elected for the coming year: C. Louis Meyer (president of the Concrete Engineering Company), president; O. W. Irwin (vice-president of the Truscon Steel Company), vice-president; Hugh J. Baker (president of Hugh J. Baker & Company), re-elected treasurer; Charles M. Gunn (president of Gunn, Carle & Company), re-elected to the board; George E. Routh, Jr. (vice-president of the Kalman Steel Company), re-elected director; Louis J. Lind (president of the Carlem Engineering Company), director. M. A. Beeman was reappointed as secretary and R. W. Johnson was reappointed engineer.



THE American Institute of Steel Construction, Inc., 200 Madison Ave., New York City, calls attention to the fact that the governor of Pennsylvania has recently signed the bill enacting the new State Building Code for the state of Pennsylvania. This code substantially incorporates the Institute's Standard Specifications, it is stated, and has jurisdiction over all building in cities of the first class within the state of Pennsylvania.



Framing an Octagon Roof

(Continued from page 87)

that the blade is parallel or in the same plane as the common or jack rafter and the tongue lies along the edge of the plate. The length of jack or common rafter is 20 inches per foot of run and the plate length is 4.97

Table for Octagon Rafters

Pitch—	Length of		Length of
	Rise per	Foot Run	Hip Rafter
	Foot Run	per Foot Run	per Foot Run
One-sixth	4 inches	12.65 inches	13.59 inches
One-fourth	6 inches	13.42 inches	14.30 inches
One-third	8 inches	14.42 inches	15.26 inches
Three-eighths	9 inches	15.00 inches	15.80 inches
Five-twelfths	10 inches	15.62 inches	16.40 inches
Eleven-twenty-fourths	11 inches	16.28 inches	17.03 inches
One-half	12 inches	16.97 inches	17.69 inches
Two-thirds	16 inches	20.00 inches	20.61 inches
Three-fourths	18 inches	21.63 inches	22.20 inches

inches or 5 inches. The square in this position gives us the numbers to be used for laying out the side cut, 5 and 20. The side cut is marked on the back of the rafter along the arm of the square on which the 20 is taken.

In Fig. 3 we illustrate how the framing at the center may be simplified. A big block or pole from 6 to 8 inches in diameter is used at the peak of the roof to which all the rafters frame. By using this block the side cuts on the rafters are avoided. This simplifies the framing.



Building Trades Wages per Hour in Chicago

JULY, 1929

Information Secured from the Building Construction Employers' Association Monthly Bulletin

Architectural Iron Workers—Oct. 1, 1929,	
\$1.62½	\$1.60
Asbestos Workers	1.62½
Boilermakers	1.50
Bricklayers—Oct. 1, 1929, \$1.70	1.62½
Bricklayers Fireproofers—Oct. 1, 1929, \$1.90 ..	1.65
Caisson Men (Diggers)—Sept. 1, \$1.25; Oct. 1,	
\$1.27½	1.20
Caisson Men (Windlass; Niggerhead)—Sept. 1,	
\$1.10; Oct. 1, \$1.12½	1.05
Carpenters—Oct. 1, 1929, \$1.62½ (\$1.10*)	1.56¼
Cement Finishers—Oct. 1, 1929, \$1.62½ (\$1.10*)	1.56¼
Composition Floor Finishers—Oct. 1, 1929,	
\$1.62½	1.56¼
Composition Floor Laborers96¼
Electrical Workers	1.62½
Elevator Constructors	1.60
Elevator Constructors' Helpers	1.12
Fixture Hangers	1.62½
Gas Fitters	1.62½
Glaziers	1.62½
Hoisting Engineers—Oct. 1, 1929, \$1.62½	1.56¼
Hoisting Engineers, Derricks or Cranes (\$1.00*)	1.62½
Laborers, Common—Sept. 1, \$0.95;	
Oct. 1, \$0.97½	(\$0.82½*) .90
Laborers, Plasterers96¼
Lathers	1.62½
Machinery Movers and Riggers Foreman	1.55
Machinery Movers and Riggers	1.45
Machinists	1.50
Marble Setters	1.67½
Marble Setters' Helpers	1.12½
Mosaic and Tile Setters	1.62½
Mosaic and Tile Setters' Helpers	1.12½
Painters—5 Day Week	(\$0.95 to \$1.25*) 1.62½
Pile Drivers—Oct. 1, 1929, \$1.62½	1.56¼
Plasterers—5 Day Week	1.62½
Plumbers	(\$1.25*) 1.62½
Roofers, Composition	(\$1.10*) 1.62½
Roofers, Slate	(\$1.15*) 1.75
Roofers, Slate Helpers	1.05
Sheet Metal Workers	(\$1.15*) 1.50
Sprinkler Fitters	1.62½
Sprinkler Fitters' Helpers	1.00
Steam Fitters	1.62½
Stone Carvers	1.75
Stone Cutters	1.50
Stone Derrickmen	1.20
Stone Planermen	1.17½
Structural Iron Workers	1.62½
Terrazzo Mechanics	1.50
Terrazzo Laborers	1.07½
Terrazzo Helpers, Operating Machines	1.15
Tuck Pointers—Oct. 1, 1929, \$1.70	1.62½

* Open Shop Rate.

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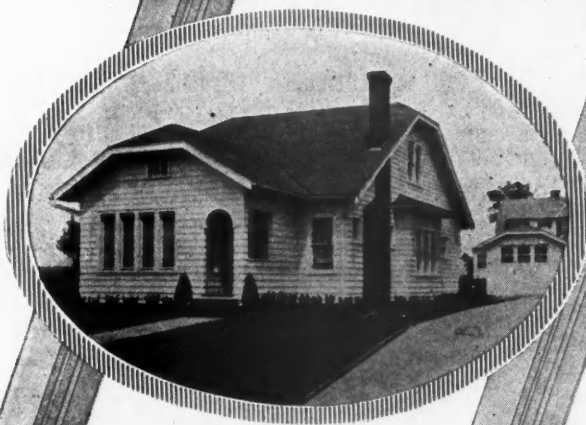
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"Buying a Window Frame for price alone is not economy

Andersen FRAMES are standard on all our JOBS"



Vosler & De Loof,
Kalamazoo, Mich.

Why. Andersen FRAMES
add Sales Value

- (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 for home comfort.
- (4) Absolute accuracy of milling insures tight-fitting joints.
- (5) Dependable because guaranteed by a reliable manufacturer.
- (6) Andersen Trade Mark is on every frame.

For further details, see
Home Builders' and Sweet's
Architectural Catalogs.

If you build for sale, you will be interested in Vosler & De Loof's experience in the matter of window frames. We quote below a recent letter from this progressive Kalamazoo concern:

"During the past few years, we have used several makes of frames, many of them at a low price, but we have definitely reached the conclusion that buying a window frame for price alone is not economy and, for this reason, Andersen

Frames are standard on all of our jobs.

"Our policy is to eliminate all items on which we have any report of trouble. There has been no complaint registered on your frames, either by our own workmen or by the customers who have bought our homes."

There is an Andersen dealer near you who can tell you more about Andersen Frames and why they help sell houses built for sale.

SUPERIORITY
GUARANTEED
by the trade mark

Andersen
Genuine
White Pine
Sills and Casings

1 White Pine for PERMANENCE

3 Weather tight for HOME COMFORT

2 Styles and Sizes for BEAUTY

4 Available at dealers for CONVENIENCE

* Standardized Quantity Production for ECONOMY

The Andersen Casement Frame has a patented, removable sill piece which converts the frame for outswinging sash for use with inswinging sash. Note also narrow mullion—it has a continuous blind stop which prevents air leakage.

Andersen FRAME CORPORATION., Bayport, Minn.

How Dan Does It

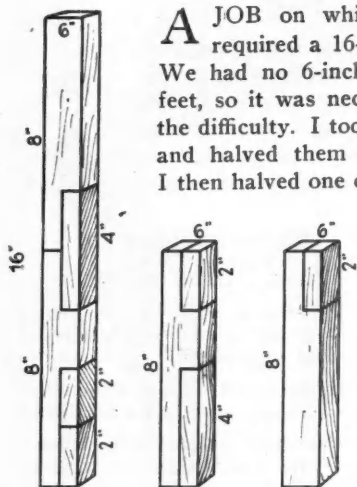
*A Department for Passing "Life Savers"
along to other Builders*

\$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, 105 W. Adams St., Chicago, Ill.

How to Splice Timbers

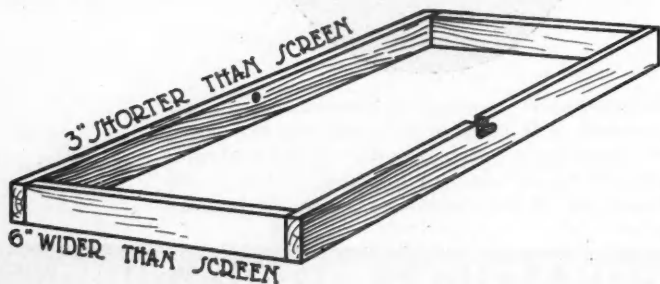


At the Left the Spliced Timber, at the Right the Two Pieces Showing the Cuts.

Stretching Screen Wire

I HAVE a method of stretching screen wire onto screen frame which is simple and leaves no sag. Make a frame out of sheathing or any other handy material which is about three inches shorter than the screens and about six inches wider. Bore a hole through each of the long sides, at the middle and about $\frac{1}{2}$ inch from the top edge. On one side notch out this hole to form a catch as illustrated in the sketch. This frame with a furnace poker or similar rod are all that is necessary for stretching the wire.

Tack the screen wire at one end of the screen frame, care being taken to get it perfectly straight. Lay the screen frame on the frame which has been made, insert the poker in the hole and press on the screen frame with it, bending the frame till the poker can be hooked into the catch at the



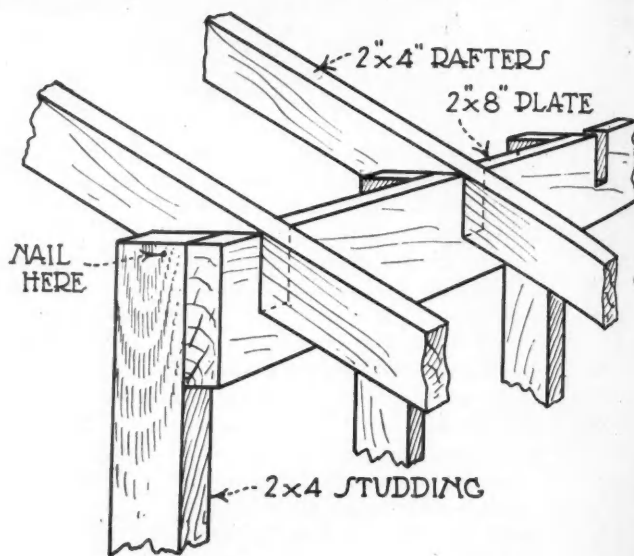
A Simple Frame, Notched as Shown, Will Serve to Stretch the Screen Wire Onto the Frames.

other side. Now tack the wire at the other end of the screen, pulling it straight but not too tight. When the poker is slipped out, the frame will straighten itself, stretching the wire tight. It is then a simple matter to tack the wire along the two sides.

R. M. HERIGES, JR., Bennie-Dillon Bldg., Nashville, Tenn.

Framing Summer Cottages

THE sketch shows a method I use and find most practical in building summer cottages. I use a 2 by 8 plate nailed onto the face of the studding. I notch the rafters into this plate, nailing through the studs into the rafters. This



This Method of Notching the Rafters Into the Plate Makes a Satisfactory Type of Construction for Cottages.

makes a strong tie to resist the wind. Using this construction on the veranda, the screen wire can be slipped up behind the 2 by 8 plate, about half an inch, and tacked on the inside. I also put my windows between the studs without any frame except a two inch sill. This makes a simple, inexpensive and entirely satisfactory job for a summer cottage.

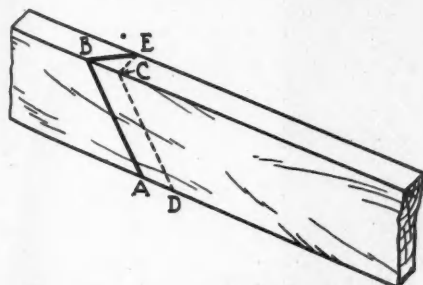
FRANK E. MYERS, Fort Francis, Ont.

Lighting Equipment Merger

ANNOUNCEMENT has just been made by the Beardslee Chandelier Mfg. Co. and R. Williamson & Co. of the consolidation of these two nationally known manufacturers of lighting equipment. The organization will hereafter be known as the Beardslee Chandelier Mfg. Co. It will continue the complete lines of both of the old companies.

Jack Rafter Cutting Simplified

MOST carpenters have little or no trouble in cutting common rafters, but many, lacking a knowledge of geometry, fall down on cutting jack rafters. I use the framing square on which length of rafters per foot of run and side cuts are given but, in the absence of any formula, I have



The Line "E" to "B" Is the Side Cut for a Jack Rafter Easily Obtained by This Method.

a sure, quick way of getting the side cut of jack rafters against the hip or valley. I believe it would be helpful to a great many carpenters so am passing it along. Whatever the pitch, mark the plumb cut "A-B" as for the common rafter. Now take a block of the same thickness and lay one edge along the line "A-B," marking the other side of the block, establishing the point "C" in the line "C-D." From the point "C," square across the top of the rafter, establishing the point "E." Now, by connecting the points "E" and "B" you have the side cut for your jack rafter.

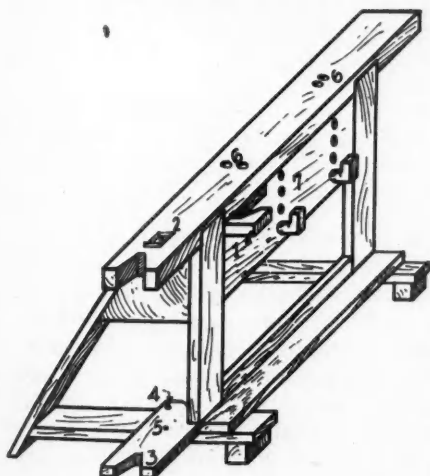
Either rights or lefts may be cut in this way and by comparing this method with the figures given on the framing square it will be found to tally perfectly. By following this method carefully you will get a "cabinet" job of framing.

FIELDS M. DUNCAN, Liberty, Mo.



A Handy Work Bench

THE sketch shows a work bench which I find so convenient and helpful that I want to pass the idea along to others. The sketch is so plain that it hardly needs any explanation, but I will explain a few points which might not be readily understood.



Here Is a Type of Work Bench Which Will Be Found Very Convenient.

against the leg of the bench which will form a firm stop for it.

The mortise (2) in the top of the bench is made just big enough to sink a small strap hinge in, so that it will be just below the surface when folded or let down, when not in use. Both wings of the hinge should be cut off, but a hole should be left to screw the one wing to the bottom of the mortise into which it fits. The other wing should be cut off so that when raised it extends about $\frac{1}{4}$ inch above the surface of the bench top to serve as a stop.

The movable piece (3) is simply fastened with a large

hook (1) is a piece of hardwood fastened to the underside of the top, or to the back, with a large screw. When this hook is not in use it can be pushed around under the bench through the slot in the 1 by 8 as shown and will be entirely out of the way. It should be so placed that, when it is pulled out for use, the back of it will be

screw at (4). A nail is inserted through a gimlet hole at (5) to hold it when in use. When not in use the nail is taken out and the piece slides around under the bench, out of the way.

The holes (6) in the top of the bench are to receive pins to hold boards on edge. A bottom board is placed at the lower edge of the 1 by 8 front board (7) and the back side left open, making a convenient place for tools.

STITES LILES, Forest, Miss.



Framing Windows Without Leaks

AFTER reading the contributions in the December and February issue on stopping window leaks, I have decided to send in a sketch of a window frame and sash which, if used, will entirely eliminate leaks in double hung windows.

The sketch also shows my method of stopping leaks where it is necessary, but if the type of window shown is used in the first place it will never be necessary.

As can be clearly seen from the sketch, the sill is made with a shoulder and the lower edge of the sash with another shoulder which fits down over it. This forms an absolute protection against leakage.

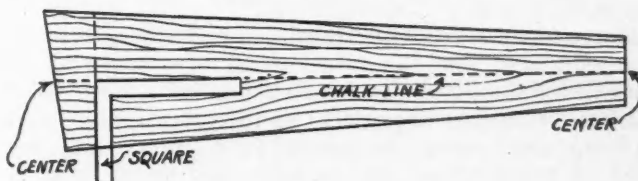
For windows not made this way, which develop leaks, a $\frac{3}{8}$ inch groove may be cut, half in the sill and half in the stool, and filled with plastic cement. This will stop the leakage.

CURT RICHARDSON, 1710 Madison Ave., Anderson, Ind.



Squaring a Tapered Column

I NOTICE in the November issue a method of squaring a tapered column which is all right, but not as quick and



Tapered Columns Can Be Squared Quickly and Accurately by This Simple Method.

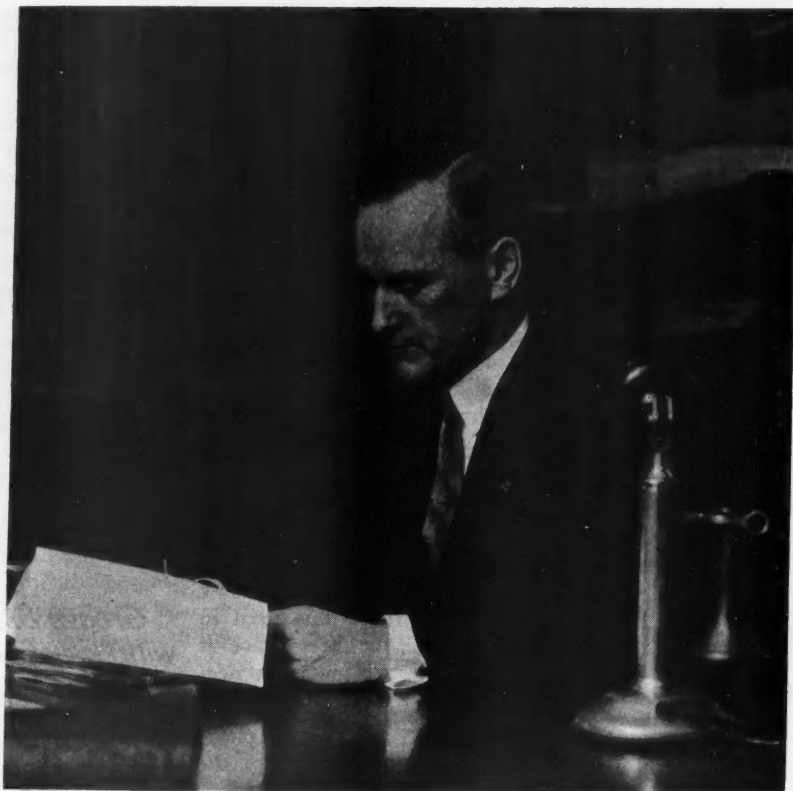
easy as the method I use. I mark the center of the column at each end and strike a chalk line down the column. I then square off each end from this line as shown in the sketch.

GEO. C. NATTER, Phoenixville, Pa.



Messinger Made Director

C. R. MESSINGER, president of the Chain Belt Company, Milwaukee, Wis., has recently been elected a director of the Milwaukee Gas Light Company, a part of the American Light & Traction Company, of New York.



What Is Wrong with the Construction Industry?

BY H. W. HEINRICH

Engineering Division, the Travelers Insurance Co.

WELL founded apprehension lies behind the rising tide of queries as to what is wrong in the construction industry with regard to the control of accidents. The humanitarian aspect is seriously disturbing. The number of fatalities is increasing and serious injuries are likewise growing in number. Temporary or permanent loss of skilled construction employees is a blow to the industry.

Moreover, the economic results are appalling. It has been estimated that the value of all new construction work in the United States for 1928 amounted to \$7,427,292,466. Allowing 40 per cent as the cost of labor, and applying the average compensation-insurance cost per \$100 of payroll and the average paid-claim ratio, it is a close estimate that the direct losses for which employees were compensated amounted to more than \$57,000,000.

Including incidental accident-costs (which are now generally admitted to be approximately four times the direct costs) that come about through delays, spoilage or breakage of material, lost time, training new men, forfeits, lost bonuses, weakened morale, and in other ways, the construction industry bears an annual accident-cost burden (based on 1928 data) of \$289,664,406.

Indeed there is need for apprehension. It is neither good business nor good ethics to defer the issue or remain inactive, especially when a workable solution is at hand. The solution is not new or original; there is

nothing startling about it, but it has produced results consistently wherever it has been applied. It is simple, practical, without "red tape", inexpensive, and—best of all—it works.

WHAT is it that is wrong and that is responsible for this high accident-cost? Various conditions have been held accountable which run the gamut from high speed, greater production per man, the increasing use of explosives and machinery, and the absence of complete safety codes, to lack of interest, skill, or experience, and improper organization. It is true that all these things and more, individually and collectively, play a part, but in none of them do we find a complete and satisfactory answer.

Construction executives, on the whole, are not uninterested in accident prevention; on the contrary, they are keenly desirous of producing results, and there is no doubt as to the sincerity of their humanitarian motives. Contractors and their employees, as a whole, are an alert, keen-minded group of men. The work they do requires such qualities inasmuch as it calls for enterprise, pioneering, and the carrying out of new projects, and also because it involves emergencies that must constantly be solved. Codes, rules, and laws are available, but they provide no major remedy. Modern high-speed mechanical devices, in the form of heavy-duty derricks, material hoists, power shovels, trench diggers, drills,



*Listed as Standard by
Underwriters' Laboratories*

Speed up sales of *homes* and *apartments*

MAKE homes sell easier. Increase turnover. Get profit quicker and oftener. Provide properties with a Piatt modern hot water supply and watch sales speed up.

Solve the hot water problem for bungalows, summer cottages, small homes, large homes or average sized apartments by installing a Piatt Oil-burning Water Heater of suitable capacity. Guarantee to prospective buyers that they will have the most satisfactory hot water supply on the market. Let them see the attractive finish. Tell them about the durable, cast iron Piatt Burner that heats 10 gallons of water for 1 cent's worth of furnace oil. Point out that operation is entirely automatic;

MOTOR WHEEL CORPORATION

Heater Division

LANSING

MICHIGAN

that there are no springs, weights, wicks, pressure pumps or fragile parts; that there will be no odor or soot. Piatt construction is durable. Piatt installation is simple. Piatt operation is economical.

A careful examination of Piatt literature convinces builders of the great sales value of Piatt Water Heaters. Send the coupon for mechanical layout and full data.

Motor Wheel Corporation

Heater Division

LANSING, MICHIGAN

Send me at once, full information and profit-building plan on the Piatt Heater. I am not obligating myself but will study the details carefully.

Name
(Please print or typewrite)

Street

City State

My Business

mucking machines, and tunnel shields, and the use of high-power explosives, introduce new and greater hazards, to be sure.

What is it, then, that is wrong? And what is this simple and effective remedy that we have referred to? The trouble is that progress in mechanical methods has been so rapid that there has not been much opportunity for a corresponding development in supervisory methods. The remedy is so simple that it has passed unrecognized time and again. It consists of the systematic and orderly merging of accident prevention work with construction supervisory routine on a basis of recorded facts in a more intimate, regular, and effective manner. To accomplish this, it is necessary to have a knowledge of the real causes of injuries, and a determination to get results which is as fairly well founded as is the determination to produce good construction in the estimated time and at a fair profit.

TO satisfy those who feel that the solution lies in the discovery of something radically new or different, we should like to be able to point out a remedy such as the elimination of the man-killing derrick, or the invention of scaffolds, planks, or cables that cannot break, of slings or chains that cannot slip, wear, or fracture, of openings that will stay railed or of rivets that will not burn. However, the answer for this problem is relatively simple, as it is for many others of an apparently complex nature. There is nothing mysterious or vague about it. Faulty instruction, lax discipline, unsafe practices, inattention and physical and mental inefficiency are some of the real causes of construction accidents, and they produce 88 per cent of all injuries. It is interesting to note that they are, in each case, the very things that construction executives are now able to control (and do control) insofar as they seriously and directly affect the quality, speed and volume of the work.

A typical example of cause-control is afforded by the experience in the construction of a tunnel. Motor driven cars were used to transport rock from the end of the tunnel to the shaft where the rock was hoisted to the surface. The cars were carelessly loaded and pieces of rock jolted off and fell on the rails, which made it necessary to keep men constantly employed in clearing the tracks. This condition resulted in unnecessary delay and expense and was immediately remedied by the application of the very methods that are herein advocated for the control of accidents.

First, the real cause was determined and this was soon found to be lack of enforcement of instruction with regard to the proper loading of cars. The superintendent charged the foreman with responsibility, ordered immediate improvement and kept himself personally informed of developments until he was convinced that the operation was properly conducted. An issue was made of the matter. The superintendent injected the driving force of his personality and his position and followed through.

On this tunnel job a similar problem arose with regard to the occurrence of injuries. Employees who wheeled rock in barrows along a loading runway to the cars violated instructions. Instead of traveling to the stop cleat on the end of the runway, they dumped the wheelbarrows prematurely. Some of the rock spilled over the ends of the cars and frequently injured other employees. The cause here was similar to that in the preceding example, relating to delay and expense, and the accidents could have been prevented by identical methods. The action taken, however, consisted merely in re-issuing orders. The real cause was not determined. No issue was made of the matter. Instructions

were not enforced. Executives did not participate. The foreman was not held responsible and more injuries occurred.

It is obvious that when the real cause of injuries is known, when the cause is identical with the cause of delays and of expense, when the will to achieve exists, ordinary executive methods can produce results.

Travelers' engineers have analyzed 5,000 construction accidents and have classified them according to causes, as follows:

CAUSE AND NUMBER OF INJURIES IN CONSTRUCTION WORK

Cause	No. of Injuries
1. Faulty instruction—no instruction and not enforced	2,302
2. Lack of concentration—inattention.....	780
3. Unsafe practices.....	747
4. Inability of employee—inexperience, poor judgment, lack of skill.....	321
5. Poor discipline.....	200
6. Physically unfit.....	85
7. Mentally unfit.....	15
8. Improper mechanical or physical conditions—lack of guards—defects in equipment—poor housekeeping—improper planning.....	550
	5,000

The remedy herein advocated for the accident troubles of the construction industry is no longer a mere theory, and the results have been uniformly good, without exception, wherever the employer has been whole-heartedly sympathetic and co-operative. For example:

1. Preliminary excavation work for two large buildings, situate but a short distance apart, was conducted simultaneously by two different contractors. Both men were confronted with unusual conditions that required the use of heavy shoring timbers. One contractor accepted and acted upon the advice of the safety engineer with regard to the weight and spacing of shoring timbers, and the angle at which they were to be set. There were no serious injuries on his job. The other contractor disregarded obvious safety measures, and a cave-in occurred that cost the lives of three workmen.
2. A New England building contractor effected a reduction of 91 per cent in his cost of accidents, as a result of well-planned and co-operative accident-prevention work. For a period of one year, not one fatal or serious injury occurred.
3. A Rhode Island street-and-road-construction contractor cut his accident-costs 94 per cent in one year, through a reduction in his accident-frequency.
4. Over a period of one year, a bridge builder reduced his losses 85 per cent, and his accidents 71 per cent by conducting effective safety work. The resultant saving to the employer was \$6,800.
5. In the construction of a tunnel, co-operative accident-prevention work on the part of the employer effected a reduction in losses in twelve months of 62 per cent, with no fatalities or serious injuries. The employer in this case saved more than \$28,000.

We do not need to look further than the obvious to find the trouble. The industry, however, has to recognize that accident types, such as slips and falls, and falling objects, are not accident causes, and that accident control is just as vitally a part of the construction program as is quality and volume of production.

There is no insurmountable or inherent difficulty in controlling construction accident-occurrences. There is no mystery and there are no intangible factors; there is nothing radically different; there is merely a common and understandable business condition.

The individual employer must analyze conditions, determine the real causes of injuries that are of predominant type, place responsibility upon his executive and supervisory staff for the correction of these causes, make an issue of the matter and follow-through until satisfactory improvement has been effected.



T. W. WARNER BUILDING

Pasadena, Calif.

Marston & Maybury, Architects; Terra Cotta Ornamental and Ventilating Panels Designed by Harold Wilson and Produced by Gladding, McBean & Co.



A Smart Look of Quality

Terra Cotta Sculptured Plaques Lend Prestige to Business Block

IN the face of ever increasing competition, here is a business block that is "holding its own." Eighteen months after completion it is still fresh, crisp and attractive, its Chinese jade green terra cotta and white stucco background making a very effective combination.

The feature of greatest interest is no doubt the ornamental ventilating grilles extending across the entire 130 feet of the frontage. The owner required that the entire front be practically all plate glass without any piers or pilasters and that an elaborate ventilating system be incorporated in the design, whereby not only the air in the stores could be kept

in constant circulation by means of grilles in the front and rear, but also that the air in the attic space over the stores be circulated in the same manner.

The size for the grilles necessary to do this work properly meant that practically the entire front of the building would be a large ventilating grille. This naturally led to the selection of terra cotta as the only material for the solution of the problem.

The cost of this building, excluding the special work done for the tenants, was \$72,000, which works out about \$4.45 per square foot.

—EDGAR W. MAYBURY.

Church Basement Becomes Show Room

Historic Park Street Church, Boston, Remodeled

THE basement of an old church has been transformed into display and club rooms which are ranked among the most beautiful and unusual in the country.

Charles Pike Dow, president of the Electric Refrigeration Company of New England, wanted show rooms which would be distinctive and in keeping with a quality product. He selected the old basement of Park street church and had it transformed into a study of Colonial beauty which is attracting students and lovers of Colonial architecture.

The Colonial architecture was planned and designed by Frank Chouteau Brown, Boston architect. In his plans he harmonized the display and club rooms with the architecture of the old church. The original plans of Peter Banner, architect, of Park Street church, were consulted in drafting the interior of the sales rooms which presented quite a problem for the architect, as he had to deal with three floor levels and maintain the columns and supports of the old church without alteration.

A new entrance, following the plan of the

foyer of the Old Boston Museum was built, and the organ pipes had to be raised to reconstruct the church basement.

A beautiful staircase leads to the Exhibition Room. The motif was suggested by a staircase in St. Anselm's School at Croyden, Surrey, England, which was built in 1705 and designed by Sir Christopher Wren. The rail posts and balusters of the stairs are of mahogany and two of the balustrades to each tread are twisted and carved by hand.

(Continued to page 100)



The Attractive Display Room for Kitchen Equipment in the Basement of the Park Street Church, Boston. Above, a View of the Entrance.

THERE'S A NATIONAL HEATING SYSTEM FOR EVERY BUILDING NEED



Playroom



Bed Rooms



Grandma's Room



Bath Room



Living Room



The National Super-Smokeless Boiler *The Standard By Which All Other Smokeless Boilers Are Judged*

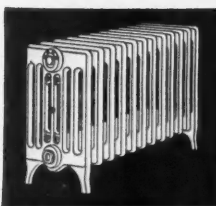
Distinguished for its swirling scarlet flame, this boiler is scientifically designed for the efficient and smokeless combustion of all grades of fuel. The green coal cokes on the front of the grate—the distilled gases pass back to unite with pre-heated, proportioned, finely divided, and fully distributed secondary air, and are completely consumed. Schools, hospitals, all applications where cleanliness, efficiency, and simplicity are sought, know this boiler as the acknowledged leader in its field.

Each National Boiler is guaranteed—and the guarantee is endorsed by a Surety Bond, issued by The Fidelity and Casualty Com-

pany of New York. It covers three distinct guaranteed stipulations as to manufacture, design, performance, and replacement of any defective part. It assures customer satisfaction, protects against criticism or complaint.

The National Boiler Line, reduced and standardized, offers outstanding units in all desired types and sizes. Each National product is a leader in its field, has an unimpeachable record of proved performance in all types of structures. Each yields the quality of certain and sustained service that users of heating equipment are seeking today.

A line to us will bring you complete and helpful information.



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Executive Offices: 55 West 42nd Street, New York, N. Y.

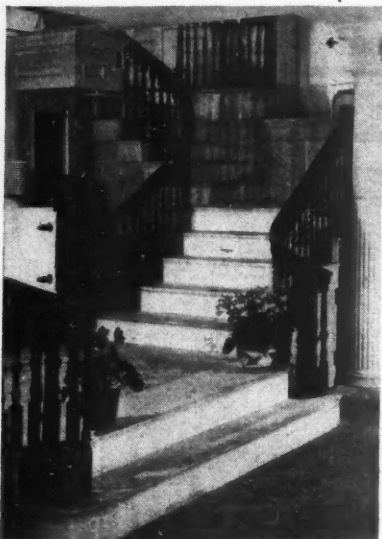
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Looking Up the Colonial Staircase from the Display Rooms.

The Exhibition Room itself is panelled to the full height of the walls, broken only by elliptical arches leading into four alcoves. Each alcove is treated differently from the other, but each is panelled in oak, walnut or knot-pine, with a central niche.

A model kitchen is on the stage, which is located on one side of the luxurious display room, separated from the women's club room by a velvet curtain. The kitchen is completely equipped with an electric range,

sink with electric dish washer, cupboards and glass cases, and an electric refrigerator. It is lighted by an overhead border with three circuits, making it possible to flood the kitchen with white, amber, blue or combinations of these three lights. Spotlights accentuate the refrigerator which is placed in the center of the back wall between two windows. A landscape scene outside the windows can be lighted to appear like early morning, midday, or evening.

The kitchen woodwork is painted yellow buff and the walls are tiled in dull blue faience. The ceiling is painted with enamel paint and the floor is covered with rubber tiles.

Beyond the kitchen is a dressing room which was designed to delight feminine hearts. It is hung in peach changeable color material, somewhat similar to changeable color taffeta. At one end of the room is a double dressing table with mirrors and overhead lights; at the other, two lavender washstands, also placed against mirrors. The walls are stippled orchid colors and the woodwork is glazed with peach tinted enamel.

During the reconstruction of the church basement, Park Street Church continued its meetings without interruption.

When the display rooms were completed, a peculiar situation arose. There was no street number available. Charles Pike Dow, president of the Electric Refrigerator Company of New England, thereupon decided to designate his show rooms, "Zero Park Street." In addition to giving the new display place an unusual address, it is considered quite appropriate for a refrigeration sales room.



The Carpenter's Prayer

By MARY HUEBNER WAHR

OH, Carpenter of Nazareth,
For carpenters I pray,
That they may work as Thou didst work,
Oh, hear my prayer today.
May every nail and hammer blow
Remind these men of Thee
And strengthen them through weary toil
To be what they should be.

And when a carpenter, Oh, Christ,
Through anger or through pain,

Forgets that Thou has died for him
And takes Thy name in vain,
Remember, Lord, how weak we are,
How strong the ancient foe,
And when he asks, forgive him, Lord,
And tender mercies show.

Then let him speak Thy precious name
In praise and holy fear;
Oh, Jesus Christ, abide with us
While we must labor here.
And when our hands shall lay aside
At last each useful tool,
Give us a house not made with hands
Where Thou alone dost rule.

Ann Arbor, Mich.



Factories Cost About 23c a Cubic Foot

ACCORDING to Mr. James A. Burbank, vice-president of the John W. Ferguson Company, Builders, the modern type of American factory can now be built for about 23 cents a cubic foot, assuming level ground, normal foundation conditions and average equipment.

Mr. Burbank says, "American factory buildings today are mostly of reinforced concrete with flat slab ceilings (no beams or girders) permitting uninterrupted distribution of light and low cost installations of sprinkler equipment, shafting, etc.

"Ceiling heights are about 12 feet; columns are usually 20 feet apart; floors are designed to sustain a working load of 125 pounds per square foot, and are cement finished.

"Factory-type steel windows with ventilating units fill about 50 per cent of the wall area, insuring plenty of day-light and air. Interior walls are cold water painted; if especially good illumination is desired, oil paint is used. For artificial illumination, one watt per square foot of floor space is the average.

"The steam heating plant in the basement with wall-type radiators located under windows is designed to maintain 70 degrees inside during zero weather.

"Sprinkler equipment is usually one head for each 90 square feet of floor area. Plumbing varies with number of employees and with state and municipal requirements. Partitions are mostly hollow tile, four to six inches in thickness.

"Elevator equipment is generally one 3,000-pound capacity car for a 100 by 100-foot building; two cars to a 100 by 200-foot building.

"The height of first floor is about four feet above ground, to facilitate unloading from box cars (floors of which are 4 feet 2 inch above top of rail) and the loading of trucks which are about 3 feet 3 inches above driveway. The loading platform is either recessed into the building or covered by a canopy for weather protection.

"Assuming level ground, normal foundation conditions and average equipment, the modern factory costs about 23 cents a cubic foot.

"These conclusions are based upon our experience in executing more than 800 contracts for industrial buildings, and take into consideration the present favorable conditions in the material market and the increased efficiency of American workmen, which has been steadily improving since 1920."



To Build New Plant

THE International Cement Corporation, 342 Madison Ave., New York City, has announced plans for a large reinforced concrete, cement warehouse, with complete cement packing plant, now in course of construction in Washington, D. C., at 34th St., K St., and the Potomac River. A temporary warehouse at this location is now in service and will be used until the new plant is completed. The new plant will have a capacity of 60,000 barrels of cement.

Offer your houses

SCREENED!

... and speed up sales



Screens easily and quickly removed or replaced from the inside.



The swing leaf is opened or closed without touching the screen.

INSTALL Fenestra SCREEN Casements and you'll add the newest and most exclusive feature to your selling advantages.

Now, for the first time, you can *completely answer the screening problem* for your home buyers. You can furnish them with *steel casements and screens* that are built complete to operate together. Check the following Fenestra advantages—see how they'll fit into your selling program.

1-Fenestra is the only casement in which non-warping, metal-to-metal contact is permanently assured between *flat screen frame and flat window frame* . . . 2-Screens *need not be touched* in any way when opening or closing the windows . . . 3-Screens can be removed or replaced in a jiffy without effort . . . 4-Swing leaves are opened or closed entirely by sill operators working through the screen—thus avoiding the necessity of leaning out . . . 5-Screens cover only the actual ventilating opening. Glass in all fixed sections is left clear—screening costs

are reduced . . . 6-Standard sizes of casements make only two types of screens necessary . . . 7-Wood trim—to provide screen stop where casements and screens are bought separately—is *eliminated*. A worthwhile saving . . . 8-Screen casements can be furnished without screens. Screens can be purchased and installed after house is completed . . . 9-Screens need not be numbered or marked when removed for

storage. Any window will accommodate a screen from any other window having the same size swing leaf with locking handle on the same side . . . 10-Cost is surprisingly low—no more than the cost of any other window with screen. (Patents and patents pending.)

These exclusive features add to the many advantages which have popularized Fenestra Casements for years: extra daylight; better ventilation; one-hundred per cent opening if desired; finger-touch operation without swelling, sticking, warping or shrinking; strong fire-resisting steel members; extension hinges that make outside washing easy from within the room.

Complete new literature is immediately available. Write or phone the local Fenestra Office.

DETROIT STEEL PRODUCTS COMPANY
2281 East Grand Boulevard, Detroit, Michigan
Factories: Detroit, Michigan, and Oakland, California
Convenient Warehouse Stocks

Fenestra

casement windows of steel

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Power Equipment—An Investment

How One General Contractor Gets Dividends from His Power Woodworker

BY JOHN W. TAYLOR



"About Five Years Ago I Bought a Woodworker and It Has Paid Me Good Interest on the Investment and Still Is Doing So."

AN investor may buy bonds and realize his interest in actual cash while a business man may buy a piece of machinery which will speed up his production and cut his costs. The latter is just as important an investment as the former, perhaps more so, because, in the end, it may pay even greater interest in actual cash. In the building industry experience has shown this to be the usual result. The testimony of owners of power equipment is all to the effect that such equipment makes money for them and that they cannot see how they managed to get along without it previously. A typical case is that of a California builder who recently wrote:

"About five years ago I bought a certain well-known woodworker. The first six months I owned it, it paid for itself and, since then, it has paid me good interest on the investment and is still doing so.

"When building a house, I usually hire two men while I attend to running the woodworker. I set it properly for each part and cut all joists, studding, rafters and jack rafters and all braces and turn them over to the two men to put together. I set the woodworker for window and door frames and plow the pulley stiles, cut the stiles and door jambs to length, cutting head and foot at one operation. In using the cut-off, I find it works so perfectly and that every part fits so accurately that it is easy to get a plumb.

"When the house is ready for finish, I cut, on the woodworker, all inside window and door casings, also the door jambs, and the men nail them up. With the efficiency of this woodworker I am able to make all my built-ins with their doors, bins and

shelves. I consider this woodworker capable of replacing three men working by hand. The best thing about it is that it is small enough to load and take anywhere one wishes to take it. I consider it one of the best investments the general contractor can make."

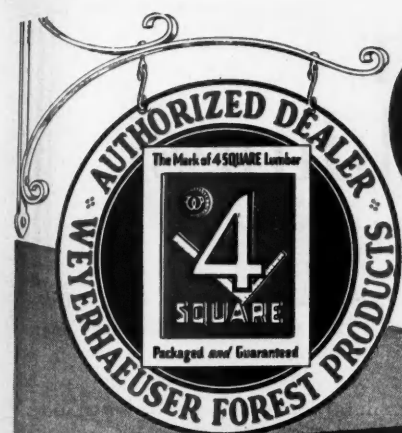


Why Statistics Are Late

A QUESTIONNAIRE sent by the U. S. Census Bureau to a lumber mill in 1880 was only recently returned—just 50 years later—said A. H. O. Rolle, lumber statistician of the Bureau in discussing the difficulties encountered in gathering lumber statistics, during the annual convention of the National Lumber Manufacturers' Association at Chicago.

"I am sure you will agree," said Mr. Rolle, "that 50 years is an extremely long time, even for filling out a government questionnaire. But if this case is extreme, what shall we say of the thousands that never come back?"

The tediousness of getting information for the Bureau's annual report on the lumber manufacturing industry is shown by the fact that the report for 1927 was published in preliminary form on December 26, 1928; another report, semi-final in character, was issued January 31, of this year, and the final report for 1927 was sent to the printer about the end of May, 17 months after the close of the year for which the information is given.



Guaranteed

quality lumber

builds confidence



This sign of
CONFIDENCE
identifies the
4-SQUARE DEALER



The 4-Square Dealer sells lumber with Weyerhaeuser's *guarantee* of quality

EVERY package of 4-Square Lumber carries the *species* mark and the *grade* mark. And Weyerhaeuser guarantees that the lumber in the package is exactly as represented on the label.

Any contractor—any merchant builder—who has experienced the doubt of quality, the lack of confidence with which the average man builds or buys a house will appreciate what this means.

It enables the contractor or builder to *prove* his case—to remove doubt—to make his customer *certain* of money's worth.

4-Square Lumber is lumber that people *know* about—the only lumber that *carries* a definite and unmistakable *quality significance*. The only lumber the contractor can use to *help* him in competitive bidding—or in selling a ready-built house.

Progressive lumber dealers everywhere are hanging out the 4-Square sign. If yours is not yet ready to supply you, write us.

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4 SQUARE LUMBER

Species and Grade are Marked and Guaranteed

TRIMMED SQUARE.. PACKAGED.. READY TO USE.. GUARANTEED

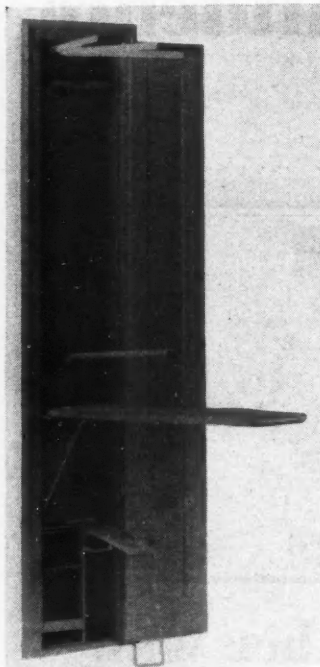
SOLD BY 4 SQUARE DEALERS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

What's New in Equipment for Buildings

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

Useful Combination Built-In



A Cabinet Easily Built Into the Wall and Affording a Number of Real Conveniences.

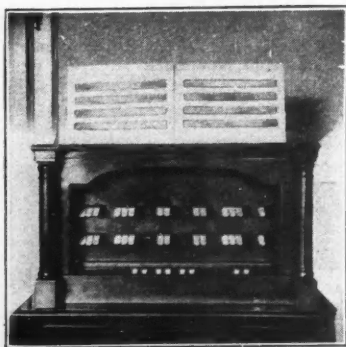
HERE is a built-in cabinet which combines a number of features useful in every home or apartment. These features include a shelf, near the top of the cabinet, for first aid supplies, a place where poisonous caustics may be kept more safely than in the bathroom medicine cabinet and where they are always available when needed. There is a folding clothes hanger, a real convenience when ironing. The ironing board and sleeve board are rigid and will not warp.

The back of the cabinet is all steel and the interior is finished in Duco. All the hardware is cold rolled steel and thoroughly dependable. Below the ironing board is a shoe polishing stand, beside it a space for polish and accessories and in connection with it a polish holder which holds the shoe polish conveniently without soiling

one's fingers. This shoe polisher is a favorite.

Below the ironing board there is also a steel iron holder where the iron may be kept without danger of its falling and perhaps injuring the children. There is a heat insulation plate on the door, opposite this iron holder which makes the iron storage completely safe. On the ironing board there is an asbestos pad where the iron may be safely set, right at hand, during ironing. This cabinet is designed to fit between standard studding, 16 inch centers.

Automatic Lighting Control



A Manual Control Which May Supplement the Automatic Control of Color Lighting.

A DEVICE for the manual or automatic, remote control of mobile lighting, recently perfected and placed on the market, is described as having the flexibility of a pipe organ. It is admirably adapted to all kinds of color lighting including display windows, stores, ball rooms, fountains or memorial structures. It can be attached to existing dimmer equipment with only small changes in construction and, in this day when the dollars and cents value of

mobile color lighting is being so conclusively demonstrated, it is a type of equipment which should be considered in the planning of any business building.

Where automatic control only is required, the system is housed in a control cabinet containing the driving motor, automatic playing roll (which is similar in appearance and operation to that of a player piano), dimmer driving mechanism and switching controls. It is a self-contained unit easily installed anywhere and is quiet and reliable in operation. The sheet metal housing is built around a strong, spot-welded angle iron frame and the entire cabinet is finished in an attractive gray enamel, giving it a sufficiently handsome appearance for installation anywhere.

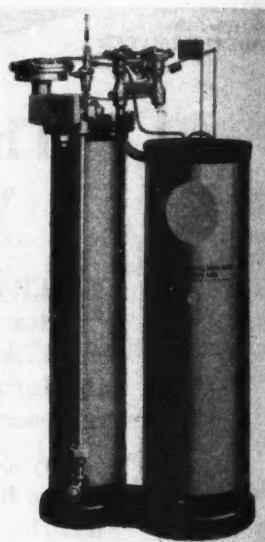
Manual control is effected through a console, of either cabinet or table model. These consoles are of wood, available in any wood finish to match the surroundings. Period designs are also available.

Convertible Water Softeners

A WELL known manufacturer has recently launched a complete new line of water softeners. The softener tanks are made of rust resisting, Armco ingot iron. For further protection they are fused inside and outside with vitreous porcelain which provides a hard, lasting finish unaffected by the action of salt and water. All other parts that are not made of brass and copper are made of steel and cadmium plated. This gives a positive assurance of permanence in the installation.

Another feature of these softeners is that they can be converted from one type into another. The semi-automatic, the least expensive, provides for regeneration by going to the basement and operating two valves. The automatic also requires basement regeneration but it is considerably more simple and only one operation is required to start and stop it. The remote control type, which can be built from either of the others by simply adding a remote control unit, can be regenerated from a wall plate located at any convenient point in the house.

Still another type is like the last mentioned except that the wall plate is replaced by a Time-O-Stat and, in order to regenerate, it is simply necessary to turn the keys on the Time-O-Stat and the softener automatically draws its brine, performs the regeneration, refills the brine tank and throws it into the softening position again. The most highly developed type consists of the unit just described with the addition of a unit which automatically controls the regeneration of the softener.



A New Line of Water Softeners Can Be Converted from One Type to Another as Improvement Is Desired.

Just
try
to
tear
it
!



Safe-n-dry

“Non-tearable Asphalt Blanket”

Beyond COMPARISON or COMPETITION

Safe-n-dry is indeed so superior to any other type of building paper made—that those architects, contractors and builders who first tested it in their work, now use it exclusively, on every type of construction.

Aside from its non-tearable feature—this cushion-like, airtight blanket, chock full of waterproofing asphalt must be given first choice wherever perfect protection is desired.

Safe-n-dry is not only “more than water-proof, weatherproof, dampproof, and rainproof,” but it is also impenetrable to wind, air, smoke, odors, frost, mildew, summer heat, winter cold, and vermin. Rats and mice dislike asphalt and will not gnaw through this heavy asphalt blanket.

Safe-n-dry bends and creases without cracking; conforms readily to odd shapes in construction; withstands any amount of abuse by man, wind or weather, without losing its waterproofing qualities.

Sold generally by lumber and hardware dealers in rolls 36 inches wide, containing 500 sq. ft. Half rolls of 250 sq. ft. Special widths to order. If your dealer does not sell Safe-n-dry, include his name and address in the coupon.

Safe-n-dry is used under clap-boards, shingles, roofing, stucco, brick veneer, and between studs in back plastering; under floors to keep out dampness and prevent buckling. Also used as a protective covering for cement work, open trenches, building materials, etc., after which it can be again used for its original purpose.

Safe-n-dry is moderately priced, clean to handle, saves time and labor, one man can apply it; requires no cleats to hold it in place.

*Generous sample test sheets are yours on request—
with prices and literature. Mail the coupon NOW.*

Safepack Mills Inc.
Millis Massachusetts

SAFEPACK MILLS, Inc.
Millis, Mass.
Gentlemen:

Kindly send complete information on your
extraordinary new Safe-n-dry Building Paper.
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Firm Name.....
Street..... City.....
Dealer's Name.....
Address.....

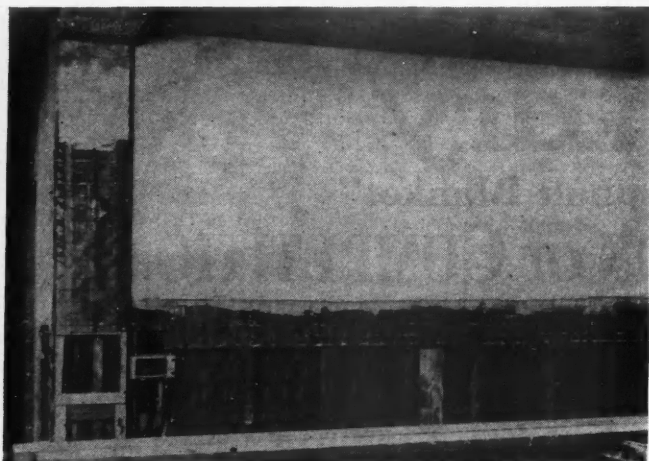
What's New in Construction Materials

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

Plaster Base Is Improved

AN improvement has been announced, recently, in a plaster base which has been successfully on the market for a number of years and is widely used. The original base consisted of a welded and galvanized wire mesh with a heavy waterproof backing. This backing automatically forms a monolithic plaster slab solidly reinforced with strong steel bars, like reinforced concrete. It also damp-proofs the plaster and adds a measure of insulation and sound-proofing.

The improved product is similar but incorporates several improved features which greatly increase its efficiency. Horizontal, "V" shaped, steel ribs have been added to stiffen the sheet which lies perfectly flat and requires no stretching or toe-nailing. These ribs are strong and rigid but are



A Reinforced Plaster Slab Formed on Steel Wire Mesh Stiffened by "V" Ribs and Backed with Waterproof Paper.

readily cut with ordinary hand shears and may be bent to fit the material into corners or curves. When cut the edges remain smooth and do not injure the workmen's hands.

The backing has been greatly increased in weight. The sheets are now standard size 50 inches by 28½ inches and are packed in strong fiber-board cartons.

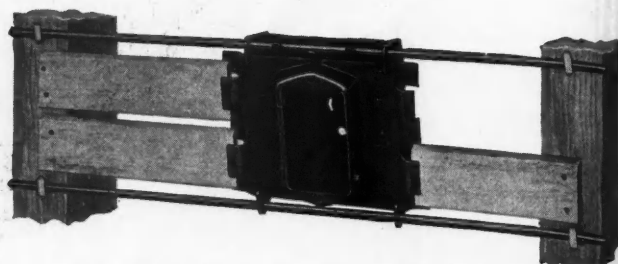


An Improved Outlet Box

THE outlet box illustrated here is an innovation which will be appreciated for its economy, convenience and superior quality. It comes completely assembled, saving labor of assembling parts on the job and, because of its method of installation, can be installed quickly at an additional saving of labor. When in place it is perfectly solid because the rods on which it is hung have sufficient strength to keep it from being pushed back or out after being set in place. This insures that it will be flush with the plaster line and there will be no fishing for lost boxes after the plastering is done.

The box is supported by two rods which insures its remaining perfectly plumb. It slides on the rods to any desired position between the studs and is locked in place by clinching the clips with a hammer.

The cover slips on in slots provided for it and is locked



This Outlet Box Comes as a Complete Unit, Is Rigidly Supported and Makes an Economical Job.

securely by clinching the clip with a hammer.

Slots on the cover receive the lath ends preventing loose laths. The boxes are furnished either with or without studs—the studs are riveted in—and also with single or two-gang covers. They are furnished complete, including box, cover, rods and nails and nothing is needed for their installation but a hammer. They have been approved by the Board of Underwriters.



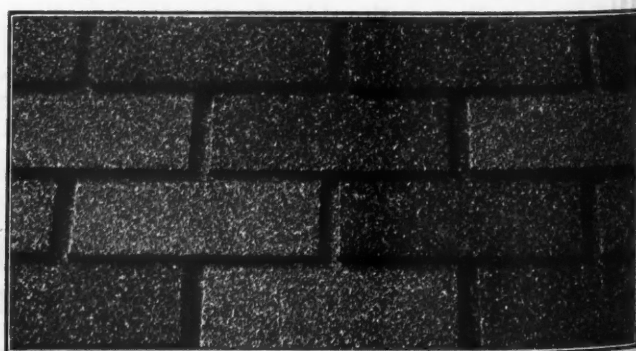
New Colors in Roofing

THE buying public now demands a wealth of color in all the products that it buys, in clothing, in motor cars, in furniture, in home decorations, and it makes no exception in the matter of roofs. The roof must glow with bright tints and shades, the day of dull colored roofs is past. Color must be there, appropriate, blending and harmonizing with the architecture of the house and with the surroundings.

Because of this fact, one of the oldest and best known manufacturers of roofing products has spent months in experimenting to improve the colors of its products and to produce correctly blended color combinations.

Experiments with the new colors, singly and in combinations, were conducted over a period of months under all conditions of sunlight, shade and weather. Hundreds of new colors and combinations were produced, tested and model houses of different architectural styles were constructed and roofed in all conceivable combinations to determine the final harmonious effects.

The result is a complete new line-up of scientifically blended colors that will harmonize with any style of architecture and with the natural surroundings of any home.



A Complete New Line of Colors in a Well Known Brand of Roofing Makes Possible Beautifully Blended Roofs.



Now!

AN ECONOMICAL SCREENED CASEMENT

Crittall now offers a screened casement that is both practical and economical. A new development in casement screen manufacture makes available Stanwin Casements with screens furnished complete by Crittall.

An advantageous feature of the new Crittall Screened Casements is their simple, practical, sliding-screen type of design. The bottom half of the screen can be easily raised or lowered with the tips of the fingers. This permits

free and instant access to open or close the casement—or to operate awnings.

Stanwin Casements with the new Crittall Screens provide perfect protection at a cost considerably below previous installations. Write today for our illustrated booklet fully describing Crittall's new Screens for Stanwin Casements.

CRITTALL CASEMENT WINDOW COMPANY
10985 Hern Avenue • • • Detroit, Michigan

CRITTALL CASEMENTS

Stanwin Casements

Norman Casements

Universal Casements

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

New Rigid Flat Rib Metal Lath

A NEW, unusually rigid and economical flat rib, metal lath has been designed and placed on the market by one of the leading manufacturers, for use in all types of construction as a base for interior plastering.



This New Lath Offers Unusual Rigidity and Economy.

The distinctive advantages ascribed to this product are that it permits an appreciable saving of plastering and is unusually rigid, the uniformly deep ribs providing additional structural reinforcement.

This lath consists of unvarying $\frac{3}{8}$ inch deep ribs separated by less than an inch of mesh in the form of small diamond-shaped openings. The narrow steel strands forming the diamonds are flattened to give proper resistance to the penetration of

excess plaster. The design of the mesh is such that its flatness is utilized to provide greater lateral rigidity. The saving in plaster is said to amount to as much as 20 per cent.

The new lath is uniformly smooth and easy to handle in erection. The ribs make the sheets rigid, facilitating placing on the studs. There can be no sagging between supports. While it is unusually rigid, its design is such that it can be evenly and accurately bent or formed to contour and thus is adapted to fireproofing columns, as a base for plaster on cove ceilings, for constructing false beams and similar work.



Borders Make Beautiful Floors

BEAUTIFUL borders for oak floors, in a variety of patterns, have been made possible by the introduction of black walnut blocks and strips matched on ends and sides. The illustration shows a floor laid with one of the more simple borders, but can not give a real idea of the effect of this treatment.



Borders of Black Walnut Strips and Blocks Add to the Beauty of Oak Floors

The black walnut blocks are made perfectly square with a face the same width as the flooring, $2\frac{1}{4}$ inches. The black walnut strips are made with a $\frac{3}{8}$ -inch face. These blocks and strips come packed in convenient cartons containing material sufficient for two average sized rooms finished in simple design and additional quantities of either item may be secured.

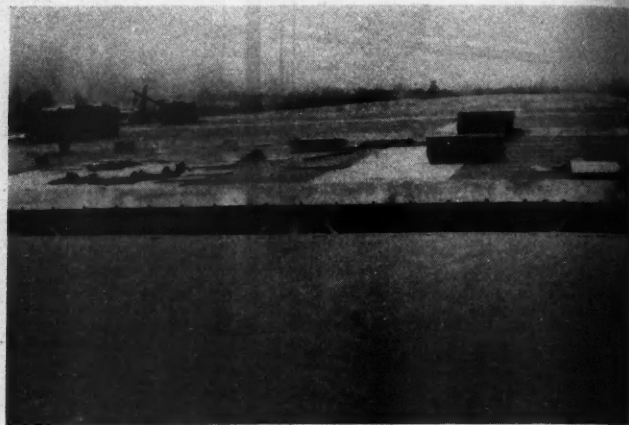


Structural Insulation

UNTIL a few years ago insulation was, more or less, an undeveloped phase of building construction. A few architects and builders were experimenting with insulation on jobs where cost was a secondary consideration and the

client demanded the best that could be supplied. Insulation, at this stage, was an auxiliary material and greatly increased the cost of a building. Manufacturing developments among the insulation board manufacturers have changed this situation, however. Insulating board is now made so that it has structural strength in addition to high insulating efficiency.

One type of insulating board is made of the tough roots of licorice. These roots have great natural strength in addition to a cellular structure that means effective insulation. This board is said to be stronger than wood sheathing. It is an excellent plaster base, holds nails and is moisture resisting. These qualities make it possible to use this insulating board in place of other building materials without reducing the structural strength of the job, instead of providing insulation as an extra. In other words, an insulated job can be produced at about the same cost as an uninsulated one.



Even in the Heat of the Southern States Industrial Buildings Can Be Built with Economical Flat Roofs if They Are Thoroughly Insulated.

In the industrial field the subject of roof insulation has received considerable attention. Especially in the South, summer heat has been a real problem, as temperature extremes make serious inroads into production efficiency and morale. Without insulation it is necessary to build industrial establishments with plenty of dead air space under the roof and this type of construction is more costly than flat roof construction. By using insulating board, flat-roof construction is both possible and practical.



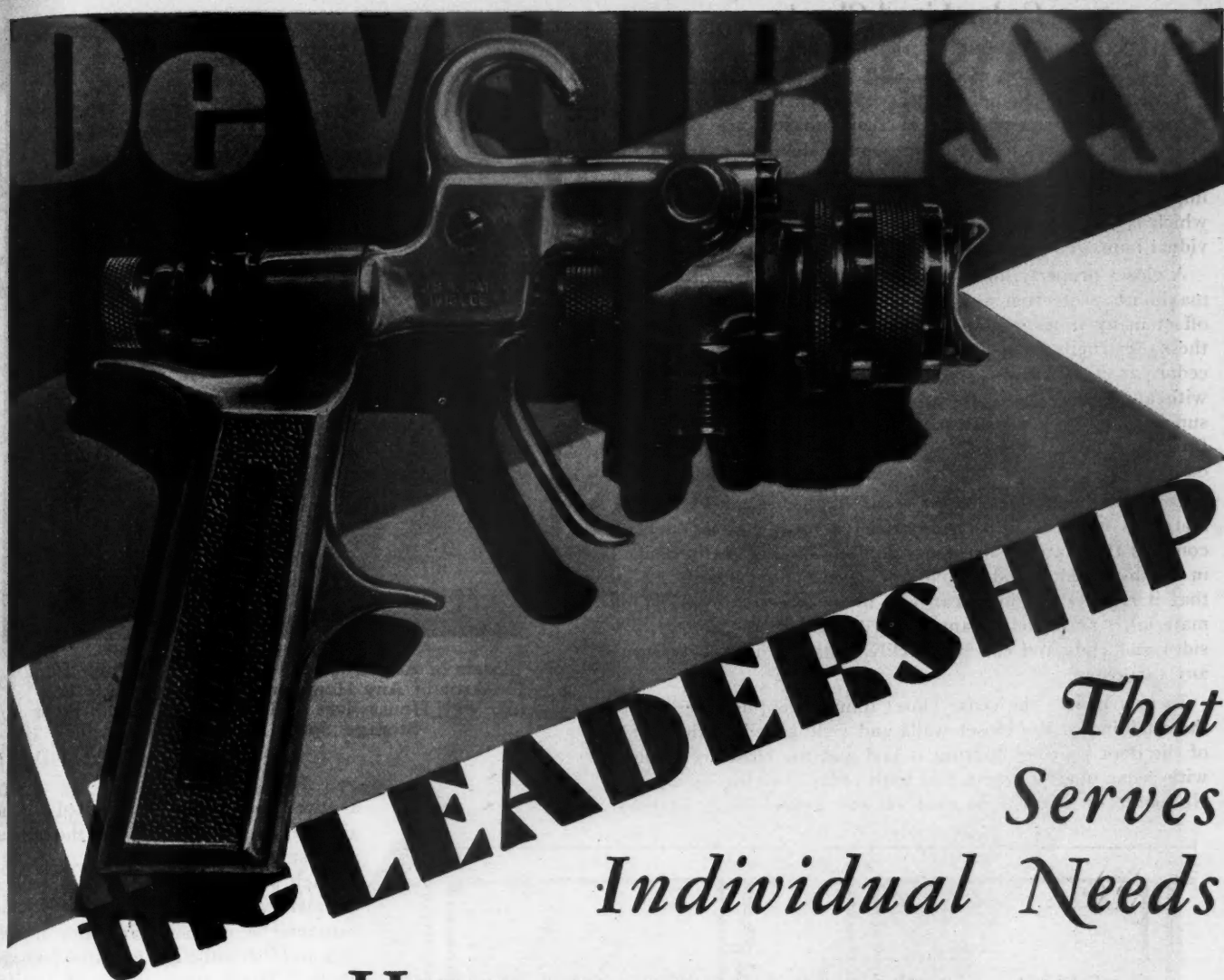
Synthetic Lumber Developed

RECENT chemical experiments have developed a binder which, when sprayed over shredded corn-stalks, wood chips, sugar cane pulp or other similar waste products, which are then subjected to pressure, produces, in 15 minutes' time, a synthetic board possessing valuable qualities. The development of this process has passed the laboratory stage and a company has been organized to manufacture and sell the product and the right to the binder.

In describing its product, this company states that tests, made by the New York Testing Laboratories, showed the product possessed all of the qualities of natural wood with the added advantage that it can be molded to any shape desired, whether large or small; that it has high fire and insect-resisting qualities and electrical insulation value greater than that of ordinary wood. It also has sound-proofing qualities not possessed by wood and is cheaper.

One of the developers has estimated that, using this chemical binder and waste materials for filler, a veneer can be produced at about 35 per cent less than the cost of present veneers.

The report of the tests states that a sample of this board made from shredded corn-stalks required 18 minutes to flame through as compared with $6\frac{1}{2}$ minutes for white pine.



*That
Serves
Individual Needs*

HOWEVER peculiar or individual may be your painting or finishing operation, you will find that DeVilbiss has provided specialized spray equipment to meet your particular requirement.

Examples are DeVilbiss spray equipment for the application of plastic paints on interiors of buildings and homes; for special emulsion paints on factory interiors; for water-proofing solutions on concrete; for dopes on airplanes; and new special spray-heads and exhausting equipment for all kinds of finishing operations and materials in wood-working and metal industries. All these new and exclusive DeVilbiss features reduce the cost of doing the work and improve the result, thus both increasing and protecting profit.

It will pay you to find out what DeVilbiss has done to improve methods and results in the particular painting or finishing operation you are engaged in or confronted with. Complete information on any specific operation will be given promptly on your request.

Spray guns of various types and sizes.

Pressure feed paint tanks and containers.

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Complete outfits from the smallest hand-operated units to the largest industrial installations.

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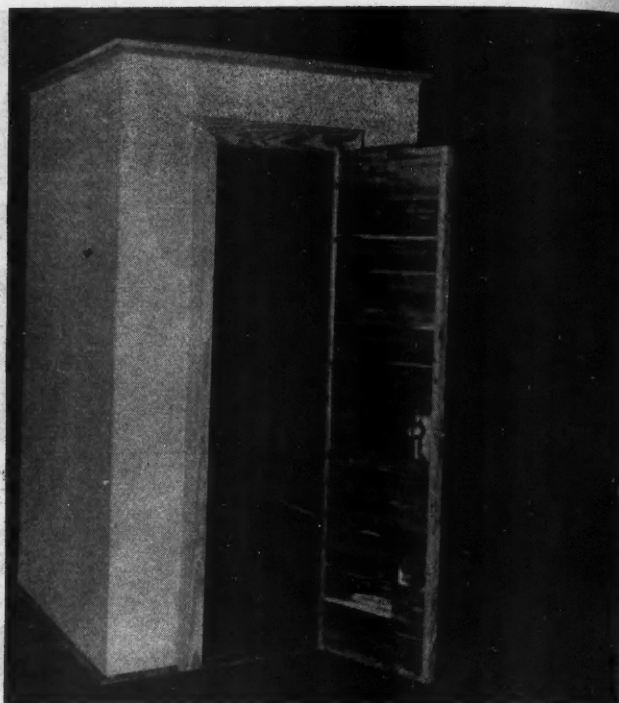
Cedar Lined Closets

THE cedar lined closet is rapidly taking its place as an essential feature of the well planned modern home. Contractors and home builders everywhere, who consider the rentability or salability of their houses, are providing cedar lined closets to meet the popular demand. Nor is the cedar lined closet limited to the new house. It plays an important part in the remodeling and modernizing movement which is now in full swing and also has its place as an individual improvement where general remodeling is not in order.

A closet properly lined with aromatic red cedar affords the maximum protection against moths and its original cost is offset many times over by the protection of clothing against these destructive pests. The heartwood of Tennessee red cedar, as it is known commercially, contains a natural oil with an aroma which, though pleasing to human beings, is suffocating to the moth worm. Because of this fact woollens, furs, silks and other clothing are protected against moth damage when stored in a cedar lined closet.

One large manufacturer of cedar lumber is marketing the materials for cedar closets in package form. Each package contains the material necessary for one closet, neatly packed in a substantial, metal bound, corrugated, fiber-board box so that it reaches the job clean and in perfect condition. This material is accurately manufactured with tongue and groove sides and ends and can be quickly installed in the closet by any carpenter.

In new houses the cedar closet lining is applied directly to the studding of the closet walls and ceiling and to the inside of the door. Cedar flooring is laid and the closet is finished with cedar quarter round and with cedar shelving as desired. No paint or varnish is used on the cedar lining material.



Closets of Aromatic Red Cedar Can Be Built Into the Attic of Any Home and Are Exceedingly Popular with Housewives as They Provide Moth-proof Storage Space for Clothing.

as the more cedar is exposed to the air the more effective is the aroma against moths.

Each package of material contains a manual with full instructions to the carpenter and also plans and specifications for building an attic storage closet. These attic storage closets are very popular with housewives and are just as readily available for existing houses as for new houses.

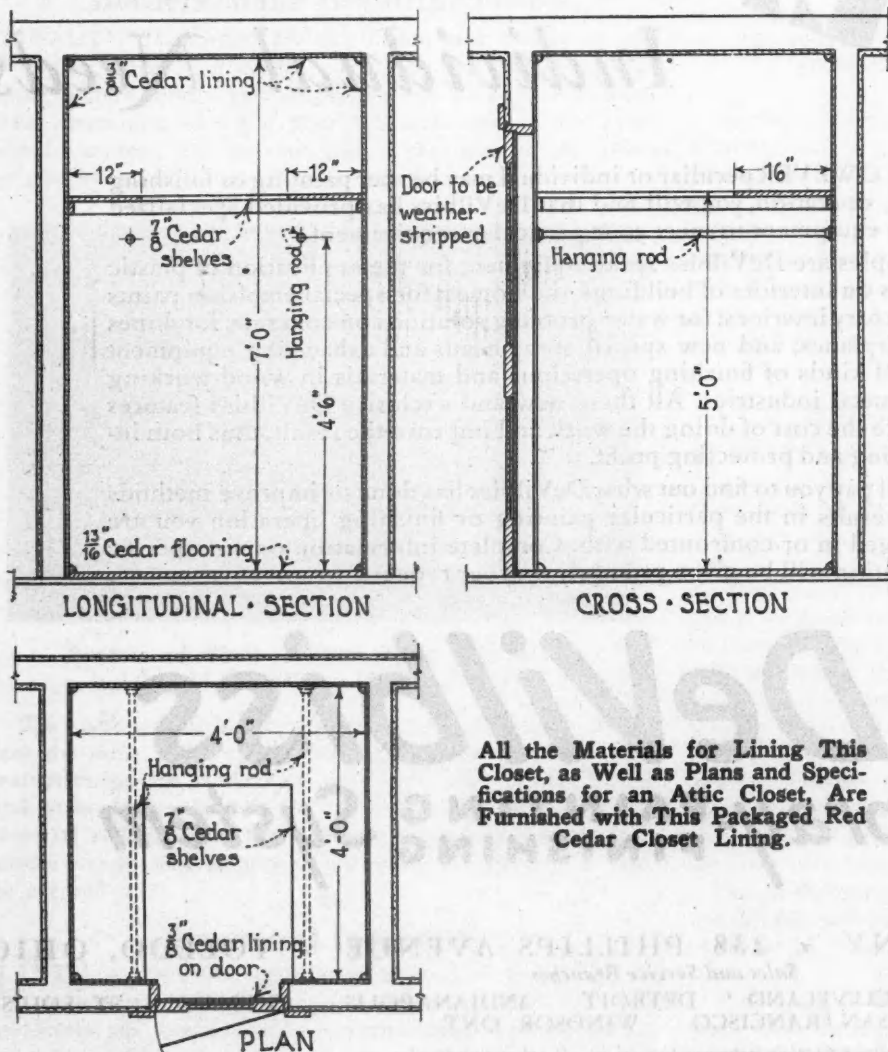
Most houses have plenty of storage space in the attic, but it is usually a poor place to store clothing because it is dusty and dirty and affords no protection against moths. By following the plans furnished with this packaged cedar lining, it is possible to build a closet in the attic, at small expense, which will be clean and thoroughly protected.

The material furnished in these packages is guaranteed by the manufacturer to be 90 per cent or more red heartwood—the white sapwood is valueless—with 100 per cent oil content. It is scientifically air cured to retain the full oil content.



Popular, Quick-Selling Homes!
September American Builder
starts a new series!

Study Them—Use Them
Don't miss this big new feature
—Editor



All the Materials for Lining This Closet, as Well as Plans and Specifications for an Attic Closet, Are Furnished with This Packaged Red Cedar Closet Lining.

DISSTON *Steel and Temper* give a better cutting edge

DISSTON Hand Saws always have been famous for their steel, their temper, their edge-holding qualities.

The steel is *Disston Steel*, made by Disston in the Disston Steel Works.

Disston steel has life and stamina. It serves the saw users better because, it takes a better temper and stays sharp longer. Disston skill creates this perfect temper.

The *new* Disston Hand Saws, now on sale at all good hardware stores, are the finest hand saws Disston ever made.

See these new Disston Hand Saws at your hardware dealers. The instant you take one in your hand you will realize that is the saw you want.

A copy of "The Disston Saw, Tool and File Book" will be sent free on request.



Six Advantages

- 1—Lighter Blades
—for easier cutting
- 2—Narrower Blades
—save strength
- 3—True-Taper Grind
—for faster cutting
- 4—Thin, yet Stiff
—for true running
- 5—New Handles
—give better balance
- 6—Disston Steel
—stays sharp longer

DISSTON

HENRY DISSTON & SONS, INC., Philadelphia, U. S. A.
Canadian Factory: Toronto

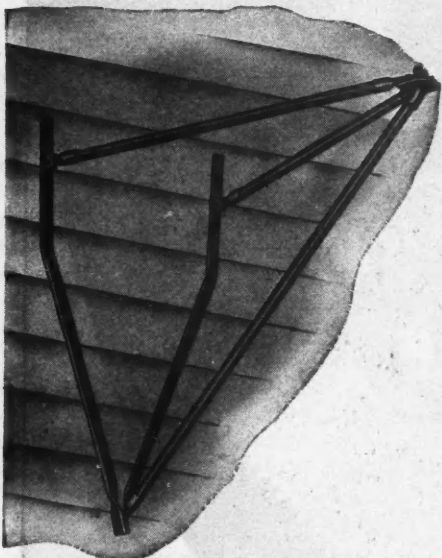
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What's New in Contractors' Equipment

For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

Safe, Economical Scaffolds

WHEREVER construction speed, which means building economy, and safety are given their due consideration,



Steel Brackets Simply Hung with Nails Give Assurance of Complete Safety and Save Money.

the steel scaffolding brackets shown here will be an item of importance. They are produced by a company which has had years of experience in the manufacture of various kinds of building brackets, they are mechanically correct in design, and are made of quality materials by careful workmanship.

These brackets are of tested steel tubing and malleable castings. All joints are machine threaded and riveted. They are finished in olive green

baked enamel. They measure $3\frac{1}{2}$ feet across the top when installed and weigh 20 pounds each. They can be adjusted to various studding centers from six inches to 22 inches, so that one size fits all jobs and they can be folded for convenience in transportation and storage.

They are hung by means of two or more 10-penny nails in each of two studs. They are removed by merely lifting off of the nails which can then be driven in instead of having to be pulled. When installed they are absolutely firm and rigid and their tubular construction gives them great strength with a minimum of weight. They do not interfere with grading and can be left for the use of the painters after siding has been applied. No plugging or patching is necessary after they are removed.

An Improved Compass Saw

THE illustration shows a new idea in compass saw handles which will interest carpenters and mechanics. It is a special plunger adjustment which has been designed by one of the leading manufacturers of saws. Replacing or reversing the blades in this handle is a quick and easy operation. It is only necessary to press the plunger, insert the blade, release



A New Plunger Adjustment Makes the Replacing or Reversing of Blades a Quick and Easy Operation.

the plunger and the operation is complete. The blade is firmly gripped, there is no lost motion.

When inserting the blade in the handle, the slot in the blade receives both the plunger pin and a support pin $1\frac{1}{4}$ inches back of the plunger. A round hole in the front end of the slot receives the plunger pin when released, a snug fit. It is a very simple yet positive adjustment. There are no screws, levers or wingnuts to tighten. The plunger is case hardened to prevent wear.

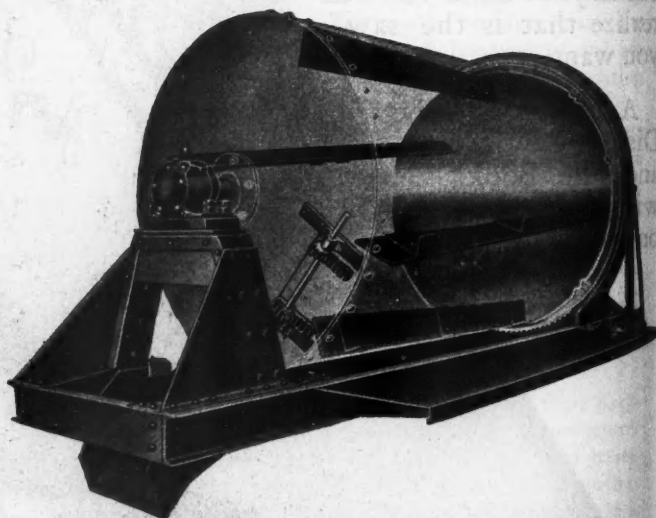
All handles with this plunger adjustment have square tops. This permits reversal of the blade and facilitates close cutting, molding, siding, floor work and close corners. The handles are made in applewood and rosewood and have a new weatherproof finish.



Ready Mixed Concrete Transport

A COMPANY which has for many years specialized in concrete mixing and handling equipment and which maintains a complete engineering service for central mixing plants, has developed the concrete delivery tank shown in the illustration. This tank is designed to deliver ready mixed concrete, from the central mixing plant, to the job in the same condition in which it left the mixer, even where a haul of two to three hours is required.

This tank is a complete unit which can be mounted on any truck chassis of sufficient length and carrying capacity, either



This Body May Be Mounted on Any Suitable Truck Chassis for the Transportation of Ready Mixed Concrete Without Separation.

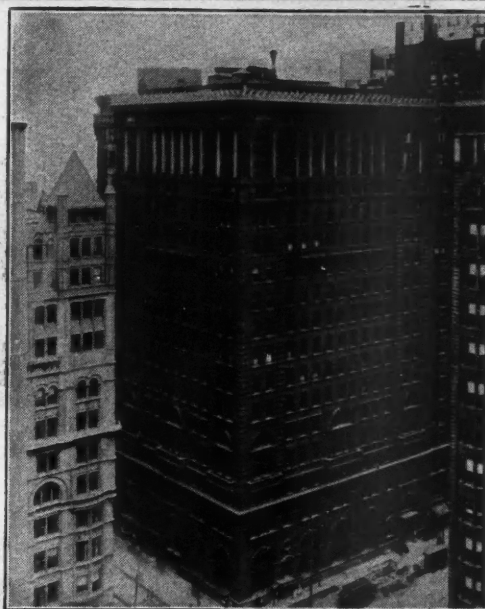
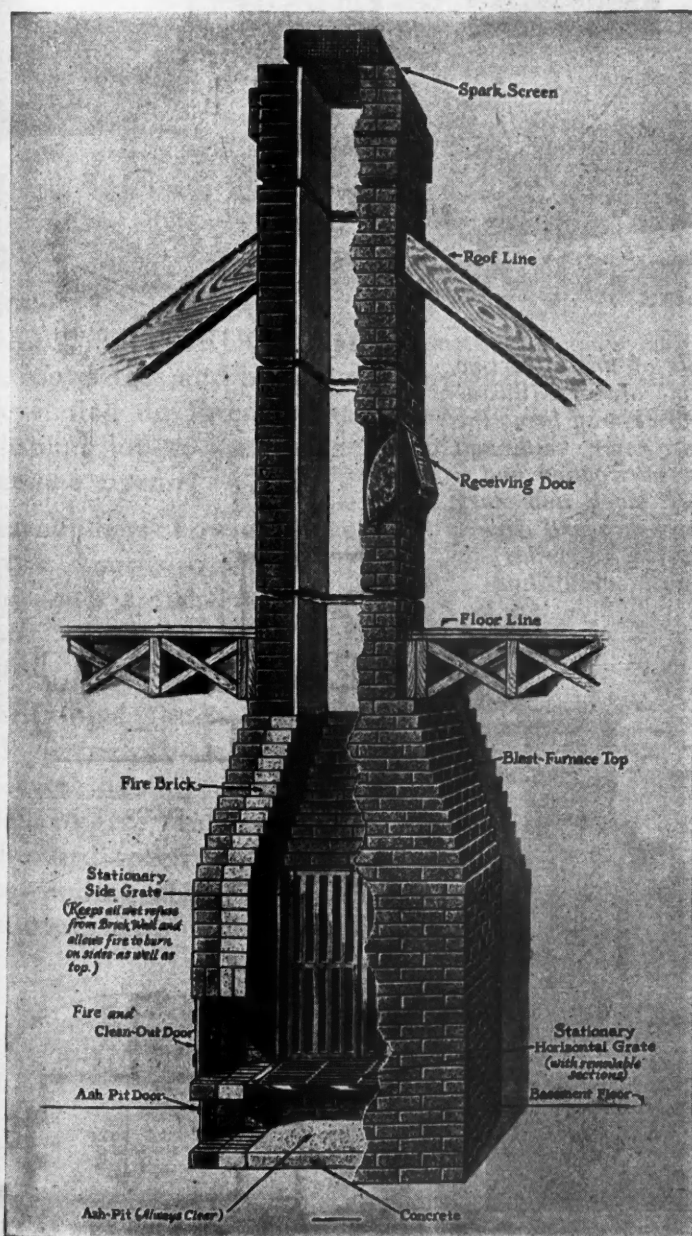
a new truck or an old one. Its mounting is so designed that the same chassis can be used part of the time for mounting other types of interchangeable bodies. It is easily removed or mounted as desired. There is no complicated transmission connection between the truck and the mechanism for rotating the tank.

The tank is rotated by means of a separate gasoline engine which is an integral part of the unit. This engine is of a standard make and is thoroughly dependable. Being a separate power unit it permits complete control of the rotation of the tank independent of the truck speed.

K-M Incinerators

For Residences, Apartments, Hotels, Offices

**Three Unique Features
Provide a Strong Draft
Which Results in Quick
Drying and Speedy,
Thorough Combustion**



Real Estate Trust Bldg., Philadelphia, Pa.,
equipped with K-M Incinerator

THREE features of K-M Incinerators provide an unusually strong draft which in turn leads to the quick drying out of the refuse and speedy, thorough combustion:

- the blast furnace design of the combustion chamber.
- the two inch air space between the sides of the "suspended basket" grates and the fire brick side walls which permit the circulation of air and combustion on all sides as well as at the top of the rubbish.
- the two point draft which comes both thru the clean-out or fire door and thru the ash pit doors.

These features making for the efficient operation of K-M Incinerators together with their low cost and simplicity of design without bearing blocks, shakers, nuts, bolts, handles or moving parts of any kind have led to their widespread popularity in residential and apartment house construction from coast to coast. Ask your local K-M distributor for complete details or write direct.

KELLOGG MANN & CO., INC.

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551 Fifth Ave., New York City

KELLOGG MANN & CO., INC.

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Buffalo, N. Y.

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Address _____

City & State _____

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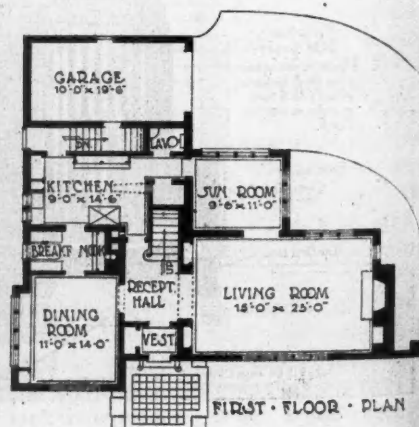
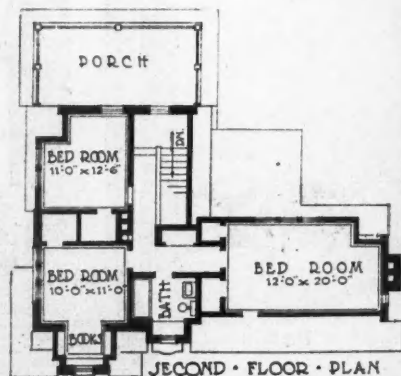
For Those Who Like

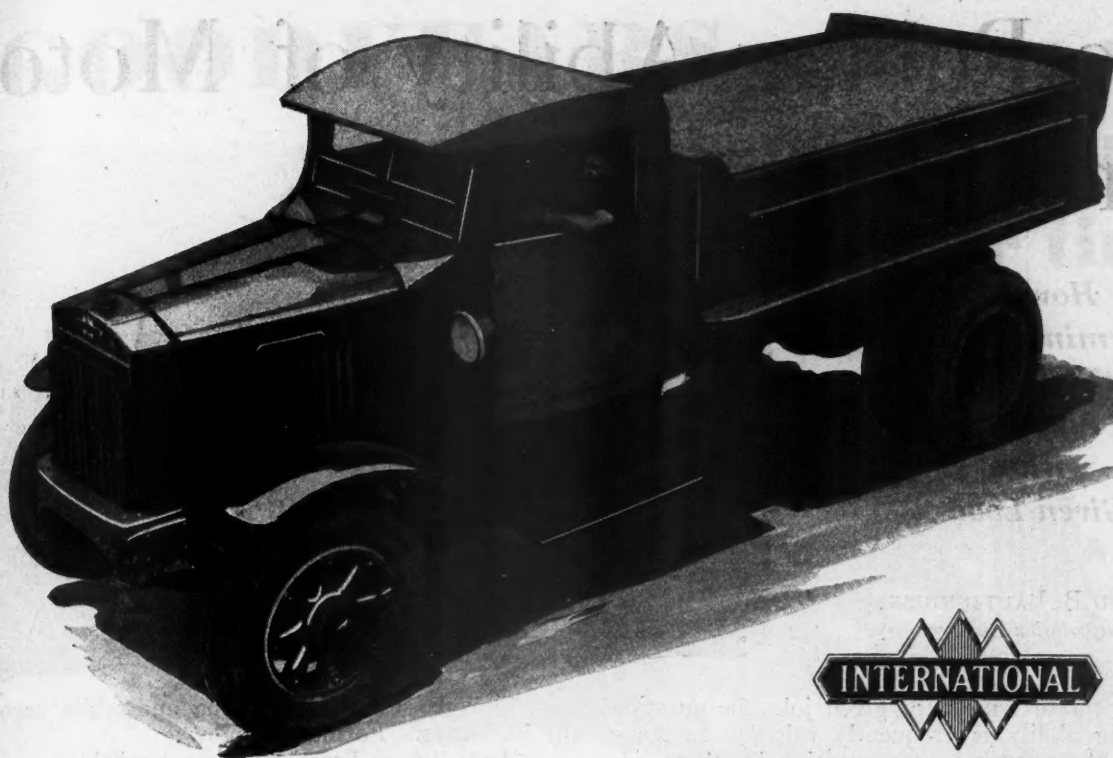
Quaintness and Oddity

A. C. RUNZLER
ARCHITECT
Milwaukee

PAUL GILLAN
OWNER
Wauwatosa, Wis.

THE walls of this attractive little home are of Milwaukee common brick, buff being the predominating color, although there is some variegation and a liberal use of black and dark browns of the bench and clinker types. The detail work here is particularly well executed.



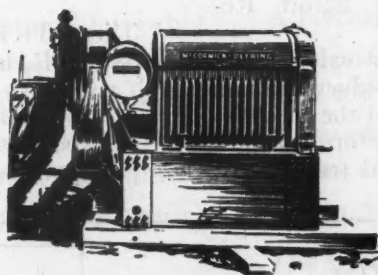


And in the Building Field *they also perform profitably*

WHERE EVERY TRUCK must operate at a profit, contractors and building supply dealers are depending on International Trucks to do their hauling job at a *minimum of lost time and maintenance expense.*

Great numbers of owners have their cost records to show that Internationals are the most *economical* trucks they have ever operated.

International Trucks are designed to perform under the most severe hauling conditions and built to give years of continuous service. Five forward speeds and two reverse provide unusual pulling ability for getting in and out of the construction job and for speed on the road.



McCORMICK-DEERING POWER UNIT

Ask the nearest of our 172 Company-owned branches or an International Truck dealer for a demonstration on your most difficult job. Get behind the wheel and see how an International

performs. "Feel" the power behind the vibration-free engine. Learn what it can actually do for you. Let your friends in the building industry tell you what Internationals are doing for them.

The McCormick-Deering Power Unit—another Harvester product—is turning the wheels on every kind of job in the building field where stationary power is required. Its power, provided by the 4-cylinder, heavy-duty engine, is taken by direct connection, belt, gear, or chain drive.

International Heavy-Duty trucks are built in 2½, 3½, and 5-ton capacities, double-reduction or chain-drive. Speed trucks are built in 4 and 6-cylinder, 1½, 1½, and 2-ton sizes. The line also includes the Special Delivery and the 1-ton Six-Speed Special. All International Trucks are equipped with four-wheel brakes.

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INTERNATIONAL TRUCKS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

The Pulling Ability of Motor Trucks

*How to
Determine Whether
the Truck
Will Pull the Hill
with a
Given Load*

BY FRED B. LAUTZENHISER
Transportation Engineer



IN selecting motor trucks for given jobs the question of pulling ability is frequently raised. In some instances the point is inconsequential; in others it is vital in order to determine whether or not the truck can perform given work over known conditions of roads and grades. This may or may not be in connection with trailer operation.

The following explanation of the various phases that enter into pulling ability will perhaps be of interest and may be considered entirely safe for practical purposes. The calculations are simple and can be readily applied to any truck under any condition of load, road, and grade. This method of calculation has been selected because the required figures are always available.

To determine whether a truck can do a given job, two values are necessary: First, the Tractive Effort Available (TA), and second, the Tractive Effort Required (TR).

With a given truck the TA is a constant value, being controlled by the engine output, the total reduction from engine to driving wheels, the tire size, and the mechanical efficiency of the truck. The TA, therefore, changes only with changes in the construction of the truck itself, except for a slight lowering of the mechanical efficiency of the truck due to natural wear.

The second value, TR, is at all times a variable, being controlled by the nature of the road, the grades encountered, and the load to be hauled.

After calculation of these two values a direct comparison will show whether the truck will succeed or fail at the job in question. Tractive Effort Available must exceed Tractive Effort Required in order to overcome inertia and start the truck and load to rolling. This of course in low gear; however, the truck must be capable of handling the

load in high gear after starting and while negotiating the highways. Formulae follow:

Let: TA = Tractive Effort Available

12.15 = Constant Value (mechanical efficiency considered)

D = Piston Displacement

R = Total Reduction

d = Diameter of Driving Wheels

Then: $TA = \frac{12.15 \times D \times R}{d}$

Also, Let: TR = Tractive Effort Required

W = Total Weight to Be Moved—
In Tons

R₁ = Road Resistance in pounds per Ton
of Load

R₂ = Grade Resistance in pounds per Ton
of Load

Then: $TR = W \times (R_1 + R_2)$

Assume R₁ in pounds per ton of load on four wheels with rubber tires and roller bearings to be as follows:

30 pounds on level concrete or macadam road

50 pounds on level gravel road

100 pounds on level ordinary dirt road

150 pounds on level ordinary sand road

Showing the calculation of a typical example, a truck with the following specifications, in high gear, we have:

As:

D = 283 cubic inches (4 1/4 inch by 5 inch bore and stroke)

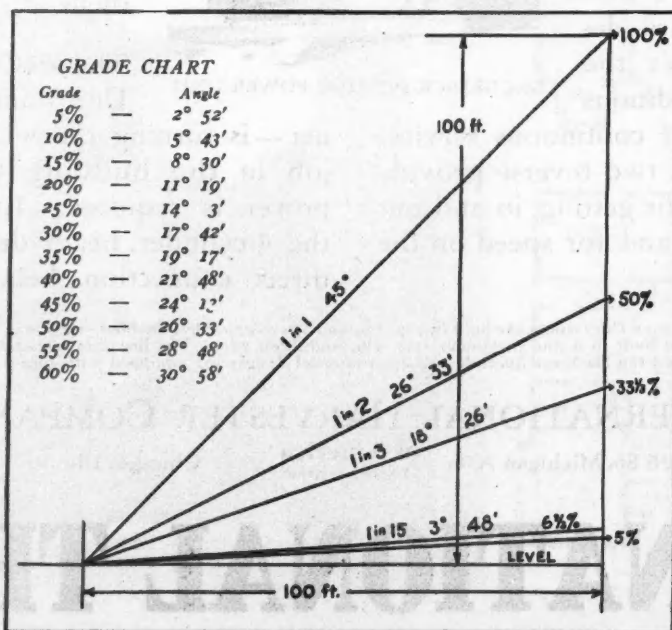
R = 8.77 to 1 (rear axle ratio, high gear is direct)

d = 36 inches (nominal diameter of tires)

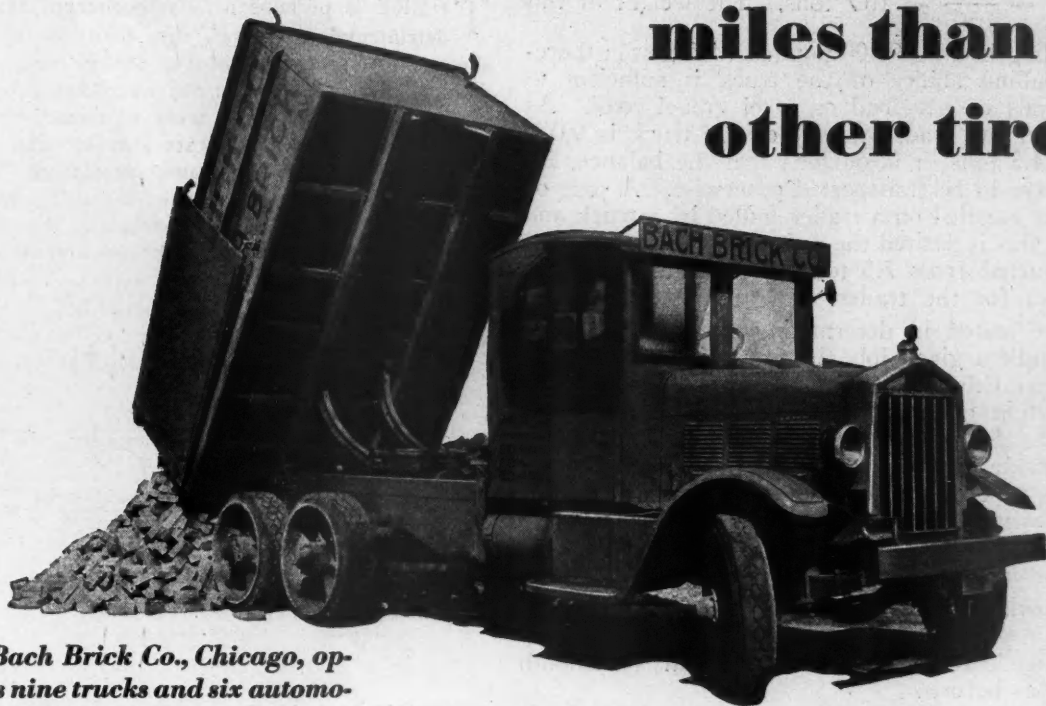
Then:

$TA = \frac{12.15 \times 283 \times 8.77}{36}$

= 838 pounds, which is sufficient to overcome the rolling resistance of a total load of 16.7 tons, because



"GOODYEARS give us more miles than any other tires"



The Bach Brick Co., Chicago, operates nine trucks and six automobiles 100% Goodyear equipped.

THE big stress of hauling building materials comes at the delivery point. Here is rough going over curbs, boards and boulders; often soft going, too, in and out of excavations. You know it takes a rugged tire of great traction and cushioning effectiveness to give a good account of itself under such conditions.

Especially significant, therefore, is the following statement of the Bach Co., which operates in Chicago where trucks are barred from the boulevards and must travel great distances on rough side streets: "After trying out almost every prominent make of tire we find Goodyear gives us more miles than any other".

Goodyear Super Heavy Duty Cushions are the tires that are giving the Bach Co. these surplus miles. They have the extra thickness of resilient long-life

rubber which protects the truck and driver from road shock. They have the famous All-Weather Treads which give sure traction and long, even, economical wear.

Goodyear makes just the right tire for your other hauling needs. For instance, there are Goodyear All-Weather Tread Pneumatic Truck Tires which combine speed and traction with unusual reliability. And for excavating work no tire can better fulfill the needs than Goodyear Special Dump Truck Pneumatics with their husky flanges of rubber extending far up the side walls for traction and protection.

The Goodyear Truck Tire Service Station Dealer is equipped and trained to recommend the right tire for your needs . . . On your new trucks specify Goodyears.

GOODYEAR

*More Tons Are Hauled on
Goodyears Than on Any Other Tires*

Copyright 1929, by The Goodyear Tire and Rubber Co., Inc.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

The Pulling Ability of Motor Trucks

(Continued from page 116)

$W = \frac{TA}{R_1} = \frac{838}{50} = 16.7$ tons. The weight of this truck including body is 9,400 pounds (4.7 tons); therefore, the pulling ability of the truck is sufficient to handle 12 tons of pay load on level gravel road. As the maximum pay load, capacity of the truck is 9,000 pounds, or 4.5 tons, it is obvious that the balance, 7.5 tons, will have to be transported otherwise. A part of this could be handled on a trailer pulled by a truck and in the event this is desired the weight of the trailer must first be deducted from 7.5 tons in order to determine the pay load for the trailer.

As before stated in determining the capacity of a truck to handle a given job, the first thing to ascertain is the Tractive Effort Required. The above calculations cover operation over a level gravel road—no grades encountered. Seldom, if ever, are roads encountered that are entirely free from grades. In determining TR it is always necessary to add Grade Resistance, R_2 , to the Road Resistance R_1 . This may be safely considered as— $R_2 = 20$ pounds per ton of load for each per cent of grade encountered.

The following is offered to show the steepest grade that can be negotiated by this same truck with a maximum capacity load (4.5 tons) in high gear, on smooth gravel road as before:

Maximum Grade % =

$$\frac{TA - (W \times R_1)}{W \times R_2} = \frac{838 - 460}{184} = 2\% +$$

(Note: "W" in this case is weight of truck plus $4\frac{1}{2}$ ton maximum pay load, totaling 8.2 tons.)

From the above it is seen that a maximum grade of 2 per cent can be negotiated continuously in high gear at normal speeds. This grade is equivalent to a rise of 1 foot in each 49 feet traveled horizontally (approximately).

Maximum grade-calculation for this same truck in low gear, on smooth gravel road (transmission reduction 5.9 to 1), shows the following: ($R = 5.9 \times 8.77 = 51.7$).

$$TA = \frac{12.15 \times 283 \times 51.7}{36} = 4,938 \text{ pounds}$$

$$\text{Maximum Grade} = \frac{4,938 - 460}{184} = 24.3\% \text{ which is}$$

equivalent to a rise of 1 foot in each 4.1 feet traveled horizontally. Bear in mind, however, both the tires and the road must be in such condition that traction is certain, and the driving wheels do not slip. This speaks for itself, showing that in low gear the truck will negotiate any grade likely to be encountered in excavation, pit, or subway work.

So that "per cent of grade" is understood, the method of determining is shown; divide the rise by the distance traveled horizontally.

Let: I = Rise of 1 foot

H = Distance in feet traveled horizontally

% = Grade

$$\text{Then: } \% = \frac{I}{H}, \text{ or } H = \frac{I}{\%} \text{ also } \% \times H = I$$

The pulling ability of a given truck can be increased by the installation of a low-speed gear ratio, smaller diameter driving wheels or an auxiliary transmission; such installations, however, are expensive and unnecessary if the truck has been properly selected to fit its job.

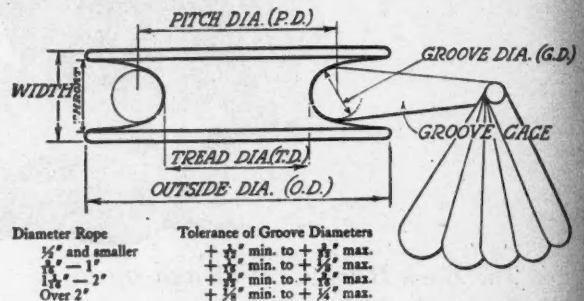
Do the Sheaves Fit the Rope?

By WALTER VOIGTLAUDER

Rope Engineer

THERE is perhaps no single element that can be more detrimental to wire rope than an improperly fitted sheave. A pinching sheave, for instance, will do more damage to a wire rope in one hour than a properly grooved sheave could in an entire week or more. Or a sheave with too soft a tread will increase abrasion and grinding action to an extent that will cause premature breaking of the outer wires and loss of rope strength. Because of these facts and because sheaves are cheaper than good wire rope, it may be well to look to the sheaves and auxiliary equipment if it is felt that the life and service being received from present rope is not all that it should be.

Proper Groove Diameters for Various Size Ropes



Careful Use of the Groove Gauge on Sheaves Will Assure Longer and More Satisfactory Rope Service.

Engineers and operators sometimes overlook the fact that by the time it becomes necessary to install a new rope the old sheaves will have become worn to such an extent that it will cause serious loss to the service of the new rope. Invariably excessive wear to the outer wires can be traced to the abrasive action of worn or too soft sheave treads.

When installing a new rope, therefore, it is economy to gauge both the rope and the grooves of all sheaves and drums. If the groove diameter of any sheave is less than the actual, calipered rope diameter decreased service is bound to result.

One of the simplest and most accurate methods for gauging sheave treads is through the use of a groove gauge as indicated in the accompanying illustration. If this device is used with care and if the tolerance given in the accompanying table (which have been worked out in accordance with long experience) are strictly adhered to, there may be reason to expect longer and more satisfactory rope service.

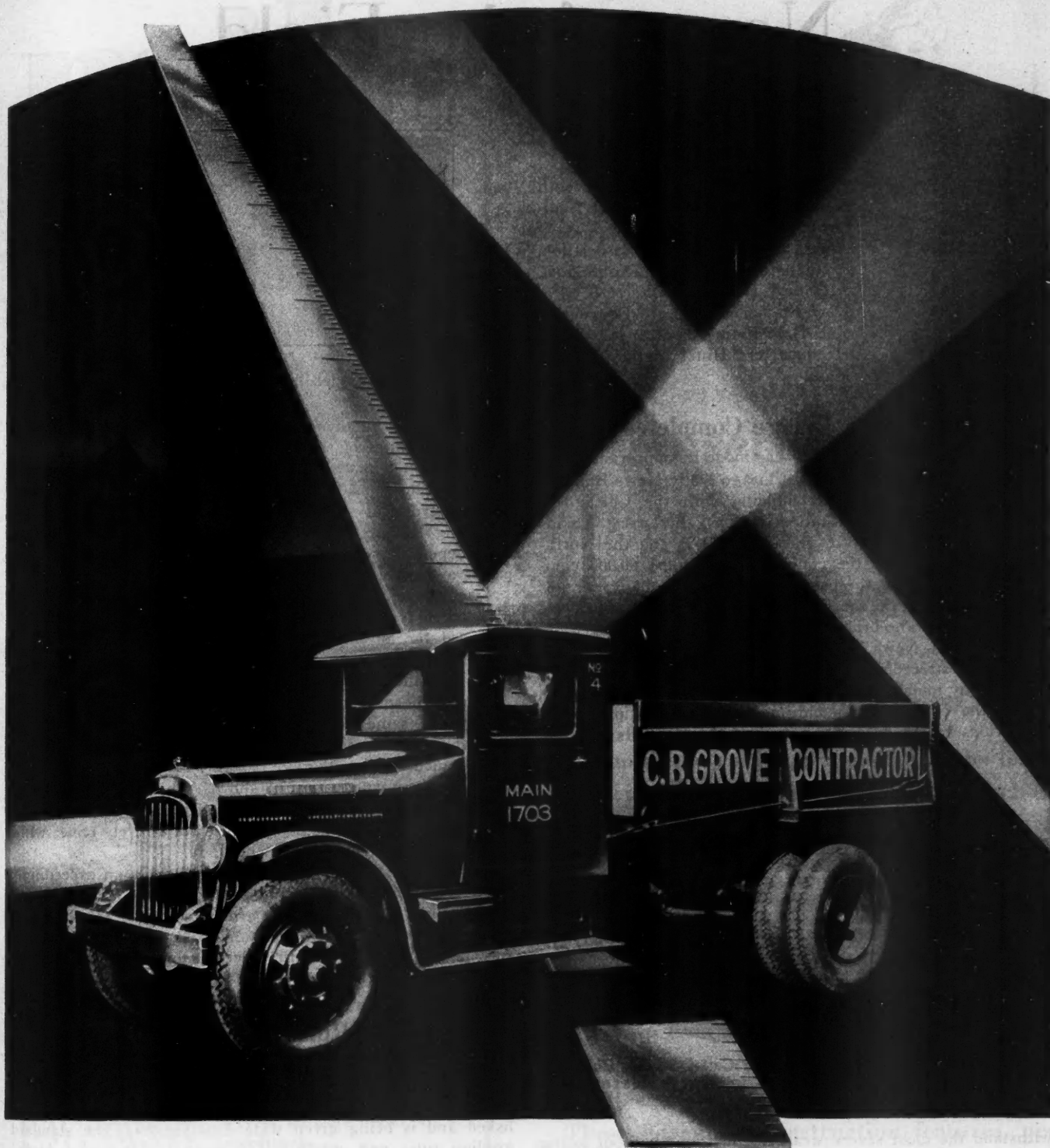
At the time such attention is given it is well, also, to check upon alignment. Alignment will cause considerable wear to both rope and sheaves. Particularly in high speed work it is necessary to maintain proper alignment of all equipment and to balance all sheaves.

Present-Day Styles and Trends in Class-A Buildings

An important New Series starts this month—a round up of certain Special Building Fields, each covered by an expert. "Hospitals" in this issue; "Churches" next month.

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THERE IS NO GUESSWORK in buying FEDERAL MEASURED HAULAGE

Call in any Federal dealer. State your haulage problem. He will discuss that problem in terms of Measured Haulage . . . will tell you the particular type of truck you need for your particular work. He will "measure" your job, accurately and carefully, and specify to that measure such vital details as the proper wheel-base, motor, frame,

gear ratio, body design, tire equipment, to meet the exacting conditions of road, load and speed . . . just as your truck must meet them on the job. He will tell you what to expect from Federal equipment . . . not from guesswork . . . but from experience and actual facts . . . from his knowledge of the service already rendered to many thousands of users by Federals. He knows the Measured Haulage built into Federal's 43 chassis and 105 body and chassis combinations and can apply his knowledge to your profit. (268)

THE FEDERAL MOTOR TRUCK COMPANY
5842 FEDERAL AVE., DETROIT, MICH., U.S.A.

FEDERAL TRUCKS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

News of the Field

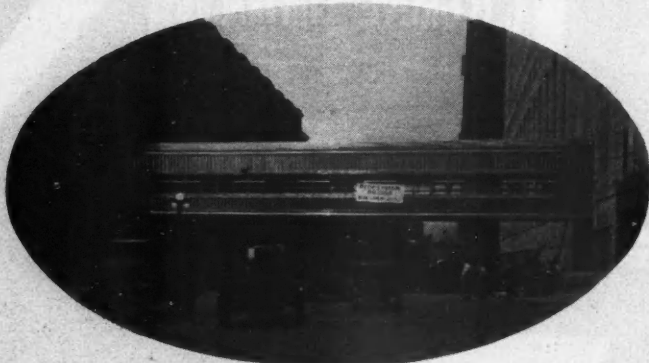
Convention and Show Dates

- Sept. 30-Oct. 4, 1929... National Safety Council, Annual Safety Congress, Stevens Hotel, Chicago.
- Oct. 14-15, 1929..... American Gas Association, Eleventh Annual Convention, Municipal Auditorium, Atlantic City, N. J.
- Jan. 11-18, 1930..... American Road Builders' Association, Annual Convention and Road Show, Atlantic City, N. J.
- Feb. 20-22, 1930..... New England Hardware Convention and Exhibition, Mechanics Bldg., Headquarters Hotel Statler, Boston, Mass.

Pedestrian Bridge Completed

AN interesting feature which has made its appearance with the completion of the new Chicago Daily News Building is a bridge connecting this building with the Chicago & Northwestern Railway Station, across the street. This bridge was built jointly by the Daily News and the Northwestern Railroad for the convenience of some 60,000 commuters who were, in the past, forced to waste many minutes daily in crossing the heavily congested street between the two buildings. The bridge connects the station waiting room with the Daily News Building concourse which slopes gradually to the street level.

Allegheny metal, with its white glistening silver-like finish, covers the bridge. This chrome-nickel iron is practically impervious to the corrosive action of the elements and will

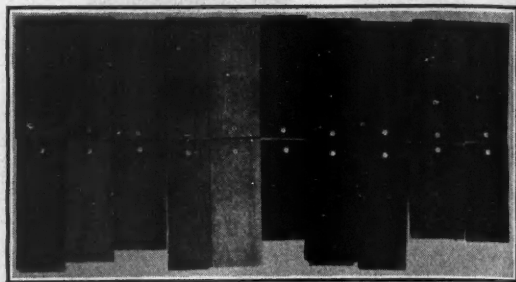


The Pedestrian Bridge Across Canal Street, Chicago, from the Daily News to Northwestern Station.

withstand the most severe weather conditions without losing its highly polished finish. Only an occasional wiping with a damp cloth is needed to maintain its luster. The five tons of the metal which were required for the roofing, window frames, and siding of the 125-foot span, were furnished by Joseph T. Ryerson & Son, Inc.

Shingles Tested for Weathering

THAT the progressive dealer appreciates the co-operative advertising material furnished him by the manufacturer is attested by the demand for booklets, folders, and newspaper advertisements put out by the C. A. Mauk Lumber Company, Toledo, Ohio. The Mauk company has maintained a very strong advertising service for dealers. There has been an active demand for this material from the dealers everywhere, it is stated. The dealers' campaign consists of a series of newspaper mats in a range of sizes and a de luxe booklet printed in four colors.



Shingles in Weathering Test.

To determine in advance, if possible, the wear and weather resisting qualities of stained shingles, the Rice & Lockwood Lumber Company, wholesale lumber dealers of Springfield, Mass., recently made an accelerated weathering test of a selected group of shingles. The test was conducted by the Finishing Research Laboratories, Incorporated, of Chicago, an independent organization specializing in the testing of paints and other types of finishes.

Twenty samples, two each of 10 different brands of shingles, taken from regular stock bundles, were numbered and prepared for an impartial test, so that the operators conducting the experiment could not know one brand of shingles from the others.

After exposure which reproduced, in 100 hours, approximately the same wear and weathering that would, under normal conditions require a year, some of the samples were badly faded, while others were only slightly faded. Some were badly warped; others showed the grain apparently raised completely above the surface of the shingles; on others the pigment coating was badly spotted or entirely gone; while three showed only fair pigment body.

The "Mauk Double Dipped Shingles" made an exceedingly good showing, with a very good pigment body and but slight fading. This showing is attributed to the Mauk process of applying two coats of stain under 32 tons hydraulic pressure per bundle, the careful selection of pigments, and the nature of the pigments themselves.



Grading Rules Supplement Issued

A SUPPLEMENT to the Southern Pine Association standard specifications for yard lumber, setting forth moisture content limitations for dry lumber has been published and is being given wide distribution. The standard grading rules and specifications manual is being reprinted with the moisture content definitions included.

In the meantime, the supplement is being supplied to subscribers to the association, their sales representatives, and a large number of specifiers as well as industrials and retail lumber distributors.



Service Department Established

THE Johns-Manville Corp., 292 Madison Ave., New York City, has established an architectural Service Department which offers free service, without obligation, in the selection of the most appropriate roof treatment for individual homes. Those wishing to take advantage of this service may do so by submitting a description of the location, general characteristics, and surroundings of their lots; the color, texture, and type of materials to be used in the exterior walls; and a blue print or sketch showing the style of architecture. This enables the service department to advise on the color and type of shingles, and to estimate the quantity and cost.

mileage



UP go service records
DOWN go tire costs

Why FISK Transportation Cords
keep your trucks going and keep
tire costs going down.

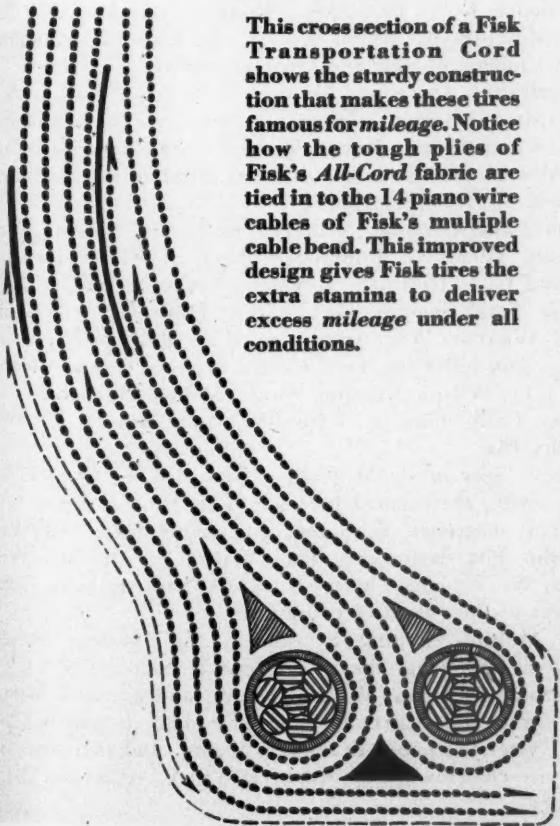
Fisk's multiple cable bead, shown at the left, is only one reason why Fisk Tires deliver such dependable service. This improved design insures extra strength at the rim, prevents rim cutting, and gives a solid foundation that absorbs all driving strains.

With this unique bead construction Fisk uses the patented *All-Cord* process, a revolutionary advance in tire design. *All-Cord* prevents internal friction and ends the overheating that cuts down tire life.

These advanced construction features, perfectly balanced by Fisk engineers, make Fisk the *mileage* tire for your trucks. Depend on Fisk Transportation Cords for the kind of service that keeps your trucks on the job, piling up profits regardless of loads or roads.

FISK

This cross section of a Fisk Transportation Cord shows the sturdy construction that makes these tires famous for *mileage*. Notice how the tough plies of Fisk's *All-Cord* fabric are tied in to the 14 piano wire cables of Fisk's multiple cable bead. This improved design gives Fisk tires the extra stamina to deliver excess *mileage* under all conditions.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

DARE YOU
Call Attention
to the
WINDOW FRAMES?

**You
Can**

if

**Bradley-Millers
are Used**

Point with pride to the window frames. Many a sale has been lost because of poor, inferior frames. Bradley Millers always give a quality job. All exposed parts of Bradley Millers are made of that finest of all frame woods, Michigan White Pine (*Pinus Strobus*). This assures you of a time-lasting job; no warping, swelling, splitting, shrinking or rotting.

Go to your dealers today and inspect these superior frames. You will find them in all styles and sizes; there's one that will meet your requirements.

*Write for free Booklet and Catalog.
They are yours for the asking.*

BRADLEY-MILLER & CO.

1200 Marquette St.,

BAY CITY,

MICHIGAN

New Realtor Division Officers

DIVISION officers and members of the executive committees for the nine divisions included within the organization of the National Association of Real Estate Boards, representing as many specialized branches of the practice of real estate, were elected at the Boston convention of the National Association. These officials, who will be inducted into office at the annual business meeting of the association, to be held next January, are as follows:

Appraisal Division: Henry A. Babcock, Chicago, chairman; Peter Hanson, Glendale, Calif., vice-chairman; W. G. Burchfield, Houston, Texas, Harry E. Gilbert, Baltimore, Md., Fenton M. Parke, Buffalo, N. Y., and Henry J. C. Quin, Portland, Ore., were elected to the executive committee.

Brokers Division: Mark Levy, Chicago, chairman; Alexander S. Taylor, Cleveland, Ohio, E. F. Metzner, Louisville, Ky., Ward C. Gifford, Kansas City, Mo., Morton G. Thalhimer, Richmond, Va., and John R. M. O'Connor, Montclair, N. J., members of the executive committee.

Industrial Property Division: George C. Smith, St. Louis, Mo., chairman; James B. Fisher, Brooklyn, N. Y., vice-chairman; W. G. Burchfield, Houston, Texas, secretary, and Lester Porter, Chicago, to the executive committee.

Home Builders and Subdividers Division: W. C. Miller, Washington, D. C., chairman; G. A. Nichols, Oklahoma City, Okla., first vice-chairman; Harry S. Kissell, Springfield, Ohio, second vice-chairman; C. Robert Peter, Louisville, Ky., secretary; Charles Mullaly, New York City, Richard G. Lambrecht, Detroit, Mich., Henry G. Zander, Chicago, and Forris W. Norris, Boston, Mass., members of the executive committee.

Mortgage and Finance Division: J. Arthur Younger, Seattle, Wash., chairman; Sydney Middleton, Chicago, vice-chairman; Frank McLaughlin, Toronto, Can., secretary; John B. Sleeper, Topeka, Kan., Hollis Bush, Miami, Fla., Richard G. Lambrecht, Detroit, Mich., Robert G. Merrick, Baltimore, Md., and Ira F. Reed, Houston, Texas, members of the executive committee.

Property Management Division: Frank S. Slosson, Chicago, chairman; Oliver S. Turner, Chicago, vice-chairman; E. Clarence Holmes, San Francisco, Calif., E. H. Benner, Omaha, Neb., Max Skeer, Kansas City, Mo., Eli Torrence, Minneapolis, Minn., and W. H. Gardner, Winnipeg, Can., members of the executive committee.

Co-operative Apartment Division: David V. Sutton, New York City, chairman; Geneve A. Shaffer, San Francisco, Calif., vice-chairman; Prince Michael Cantacuzene, Chicago, and Albert W. Swayne, Chicago, executive committee members.

Farm Land Division: Harvey Rathbone, Lincoln, Neb., chairman; Glenn A. Edminster, Wichita, Kan., vice-chairman, and G. I. Huffman, Houston, Texas, secretary; A. H. Burgess, Sand Springs, Okla., G. I. Huffman, and Adolph Holub, Wausau, Wis., were elected to the executive committee. The following were elected regional vice-presidents: Charles O. Wilson, Dayton, Ohio, Sydney B. Brown, Los Angeles, Calif., Glen A. Edminster, and Paul O. Meredith, Orlando, Fla.

Realtor Secretaries Division: John N. D. Griffith, San Diego, Calif., chairman; Charles E. Lee, Boston, Mass., vice-chairman; Clarence C. Lang, St. Louis, Mo., secretary; C. Philip Pitt, Baltimore, Md., Walter G. DeWitt, Westchester, N. Y., and Charles J. Rush, San Antonio, Texas, members of the executive committee.

The Multiple Listing Section of the Brokers Division elected the following officers: Joseph H. Schumacher, Cleveland, Ohio, chairman; William R. Alexander, Santa Monica, Calif., first vice-chairman; Paul Kendall, Louisville, Ky., second vice-chairman; Frank L. Moore, Indianapolis, Ind., third vice-chairman, and Margaret Linck, Asheville, N. C., secretary.

"Telling prospects this often helps us in the sale," avers Mr. Allred

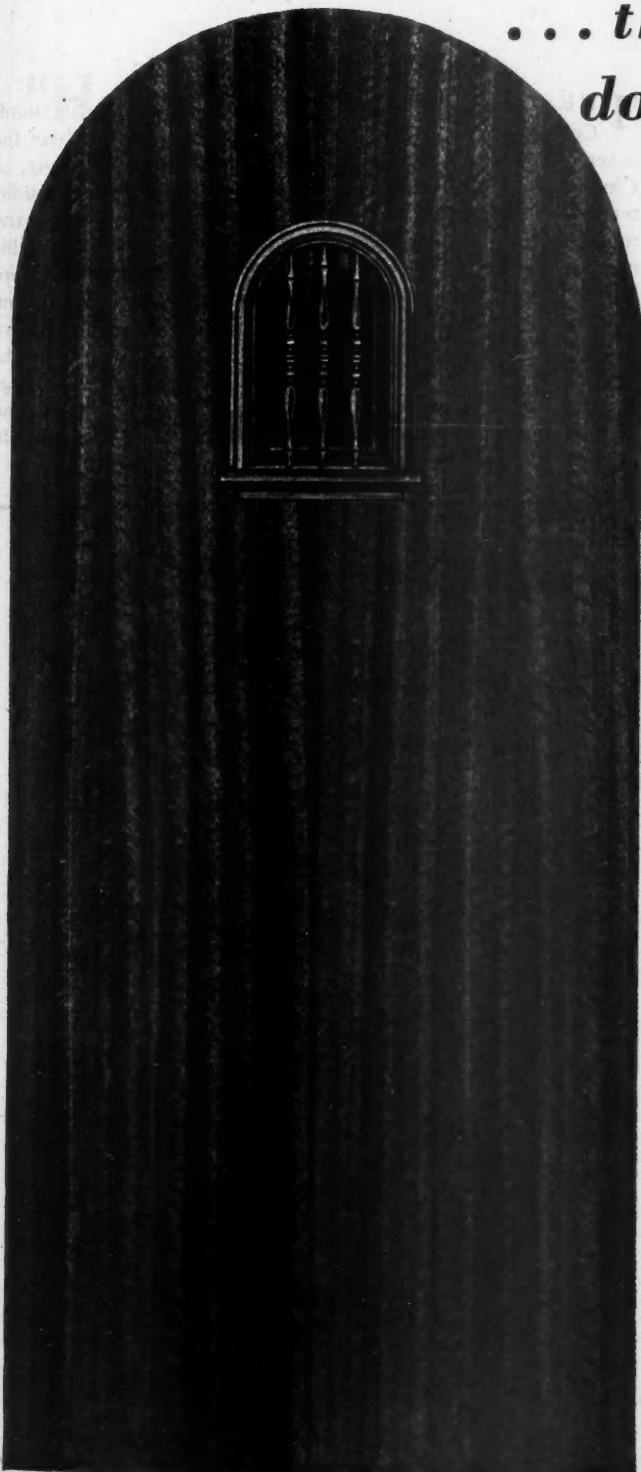
Several years ago, Mr. Clifford S. Allred, of San Francisco, began specifying Laminex doors "to get away from the old trouble encountered with solid stile doors, the warping, shrinking and swelling."

Not only did he find them "a great satisfaction," but "a powerful help in selling!" He says now, "We never fail to tell prospects that the doors are Laminex, a statement that often helps in the sale."



A door for a \$25,000 home

...that costs no more than doors you've been putting into \$10,000 jobs!



IS it of Honduras mahogany... or of the African hardwood? Design 106 *might* be of either! Its lovely ribbon grain is the grain you've always admired in costly mahogany.

Yet Design 106 costs only half as much as a mahogany door would; you can use it in very modest jobs.

It's in a *new* wood, Philippine Laminex, undoubtedly the "coming wood" of the generation. A sensation already! Dealers offer you now 23 different stock doors of this wood... the Philippine Laminex series.

These doors are built of the *choicest* hardwood, picked by *our own men* over in the Islands, and imported in great quantities, *duty-free!*

Thus is made possible a price no higher than that of ordinary domestic hardwood doors—and scarcely *half* that of mahogany doors—on Philippine Laminex doors, already scraped and hand-smoothed, ready for finish!

Like the famous Laminex doors, of Douglas fir and pine, Philippine Laminex doors will not shrink, swell, or warp. They save you entirely the expense of door servicing.

The coupon below will bring you more information — and prices — in time for you to figure Philippine Laminex on your next job.

PHILIPPINE LAMINEX DOORS

Will not shrink, swell, or warp

THE WHEELER, OSGOOD COMPANY
Dept. E-89, Tacoma, Washington

Please send me more information about Philippine Laminex doors, and prices at which I can get them locally.

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

Elections to the States Council were as follows: Hal Hotchkiss, San Diego, Calif., chairman; Otto N. Ludwig, Milwaukee, Wis., senior vice-chairman; G. Harry Abbott, Stamford, Conn., junior vice-chairman, and Paul O. Meredith, Orlando, Fla., secretary. Those elected to the board of governors of the States Council were: Joseph Feibleman, Newark, N. J., J. Wilson Dayton, Bayside, L. I., J. W. Wheeler, Seattle, Wash., George E. Lilley, Phoenix, Ariz., and Glenn D. Willaman, Los Angeles, Calif.

Ralph E. Dunn, Rochester, N. Y., was named chairman of the Sales Managers Section of the Brokers Division and M. H. Raney, Upper Darby, Pa., was made vice-chairman.



Flintkote Buys Roofing Plant

THE Flintkote Company has purchased from the Logan-Long Company its asphalt roofing plant located at Atlanta, Ga. The Atlanta factory is comparatively new and well equipped and will produce the complete line of this company's asphalt shingles and roofings in a comprehensive line of color combinations.



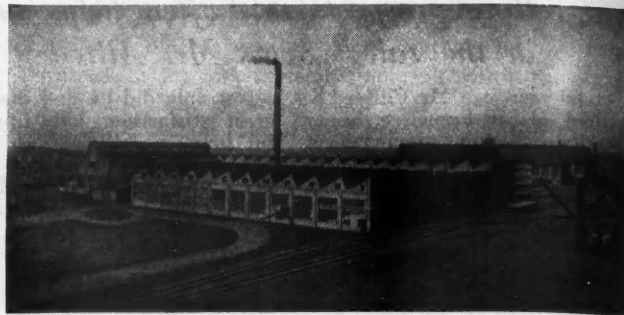
Merger Announced

THE Reliance Bronze & Steel Corp., Brooklyn, N. Y., announces the acquisition of Howell, Field & Goddard Company, Long Island City, N. Y., manufacturers of ornamental bronze, hollow steel doors, combination steel door frames, and metal covered materials.



Open New Plant

IN order to meet the increasing demand for its power graders and other products, the Wehr Company, of Milwaukee, Wis., has opened a new plant at Cudahy, Wis.,



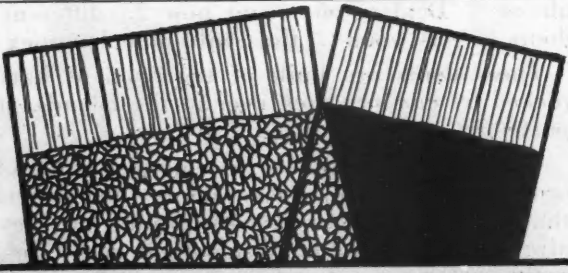
New Plant of the Wehr Co., at Cudahy, Wis.

a suburb of Milwaukee. The building is a modern brick structure of saw-tooth construction, 450 by 360 feet, with 125,000 square feet of floor space.



Yale & Towne Expands

THE Yale & Towne Manufacturing Company, Stamford, Conn., announces that it has contracted to purchase the assets and good-will of the Stuebing Cowan Company, of Cincinnati, Ohio, and Holyoke, Mass., makers of hand-lift trucks. This purchase will add a complete line of single and multiple lift hand trucks to the already large line of this company's devices for handling materials. Sales of the entire line will continue under the supervision of James C. Morgan. Arrangements have been made under which the executive personnel of the Stuebing Cowan Company will enter the service of Yale & Towne Manufacturing Company. A large modern factory for the manufacture of hand-lift trucks and skid platforms is in process of construction in Cincinnati to care for the rapidly expanding business.



SLATEWOOD



**WOOD + ASPHALT + STONE =
SLATEWOOD**

Combining the best known roofing materials into one, makes the most perfect shingle obtainable.

18" clear cedar shingles for rigidity and long life, twice coated with asphalt, nature's best waterproofing, surfaced with natural slate granules from the hills of Vermont, for fire resistance and beauty. That's what you get in SLATEWOOD. There's nothing finer or more beautiful—Write us today.

We will mail you a Free Sample, Literature and Prices. Just send us your name and address.

McHENRY MILLHOUSE MFG. CO.
SOUTH BEND, INDIANA

All the Products

Advertised in these pages
can be recommended to

American Builder Readers

Dealings with these advertisers
will prove to be highly profitable
to you.

Be progressive and investigate
what these important houses
have to offer you.

If you are interested in any product that is not mentioned here, please write us. We will gladly put you in touch with the manufacturers best fitted to supply your needs.

American Builder

105 W. Adams St.
CHICAGO

30 Church St., NEW YORK, CITY

Here's the way the women are getting better acquainted with Schlage Locks. Every month House and Garden, and the American Home are carrying the message to over 300,000 prospective home-owners.



Builder of
\$25,000,000 city
writes . . .

"Houses with Schlages easier to sell. . . ."

"Have never seen a lock, designed for residential work, that offers so much in ease of installation and convenience of operation . . . at so low a cost. . . ."

Thus John Mills, President of Mills & Sons, who developed Westwood, Elmwood Park, Illinois . . . and built 1337 homes in 22 months . . . voices the opinion of many of the largest builders in the country. . . .

There is no greater selling feature than Schlage Locks. . . . They're new . . . different . . . more convenient . . . more attractive. That's what your prospects want.

Yet . . . these unit-type locks cost you no more than any good mortise lock. And they save you about 70% on installation cost . . . you can install 4 Schlages to 1 mortise. . . .

Bore 2 holes . . . insert lock and latch units . . . and tighten-up on 2 screws. No assembling. No mortising.

Our catalogue is full of other new, outstanding features that will interest you. Mail coupon for copy. . . .

to **LOCK**
press the button
to **UNLOCK**
turn the knob

In Merion, Pa.



*"They're so clever—
and in such smart
finishes and designs."*

Surely you'll want Schlage Locks included in your new home. They're so ingenious, so clean-cut in appearance—and in such stunning designs and finishes. Even in colors,—to match modern finishes!

Just imagine! Privacy at the press of a button. No keys. And isn't it surprising, too, that Schlage is one of the simplest locks made? It's installed by merely boring two holes.

You're never annoyed by wobbly knobs and loose screws, either. The parts are made of special steel, bronze and brass,—and they are held together permanently by a new principle. They stay put!

Millions are already in use throughout the world. They cost less than any other high-class locks. Talk to your architect or contractor about them (say Slay-g).

SCHLAGE

THE NEW PRINCIPLE IN LOCKS

Say Slay-g

INSTALL BY BORING 2 HOLES



UNIT TYPE...SIMPLE...STURDY

SCHLAGE LOCK COMPANY • SAN FRANCISCO, CALIFORNIA { Name _____

Please mail me information

{ Company _____

Address _____

148

To MEN who want to enjoy ALL THE PROFITS from their efforts

MANY good salesmen and managers are anxious to own a business; but one without the investment and experience necessary to operate a factory.

This is the type of opportunity now offered in exclusive Distributorships for the nationally known Sager Metal Weatherstrip.

If you can sell, we will teach you the business . . . help you with a thorough Administration and Sales Promotion-program.

For Men Who Are Looking Ahead

The complete details will prove interesting . . . perhaps, vital. Investigation may be initiated by mailing the coupon below. It will serve also as temporary territory reservation.

To George Wolff, President,
SAGER METAL WEATHERSTRIP CO.
2531-33 Homer Street, Chicago

Name.....

Address.....

City..... State..... Age.....

(My inquiry is to be kept confidential)

Personnel Announcements

F. A. MERRICK was elected president of the Westinghouse Electric and Manufacturing Company, by the Board of Directors of the company, at a recent meeting. Mr. Merrick advances into the position of president from the position of vice-president and general manager. In announcing the election of Mr. Merrick to the presidency of the company, A. W. Robertson, chairman, also stated that the Board



F. A. MERRICK
President Westinghouse
Electric & Mfg. Co.

of Directors, while accepting the resignation of E. M. Herr, president of the company since 1911, in order that he might go on an extended vacation, had elected Mr. Herr vice-chairman.

JOSEPH T. RYERSON & SON, INC., Chicago, announces that the increase in the number of its plants and departments and in the growth and diversity of its products and markets has required the following additions to its executive staff: A. M. Mueller becomes assistant secretary and a member of the Board of Directors. H. B. Ressler succeeds Mr. Mueller as manager of sales. Robert C. Ross is advanced from traffic manager to assistant to the president in charge of Plant Operations. This move will combine all the operating and service functions under one head. Wm. H. Bryant becomes Chicago sales manager. Guy H. Rumpf succeeds Mr. Ressler as manager of the St. Louis Plant. Harry W. Treleven is elected assistant treasurer and will continue as responsible for office management.

W. & J. SLOANE, New York City, announce the appointment of William Brown as Consulting Colorist and Designer. F. O. Cooke of this company's California branch has retired from the Board to become associated with an investment house in San Francisco.

OLIVER AMES, senior member of the Board of Directors of the General Electric Company, died at his home in North Easton, Mass., on June 18. Mr. Ames, who was 65 years old, had been a member of the Board since 1893, being elected at that time to fill the vacancy caused by the death of his father.

THE Chain Belt Company, Milwaukee, Wis., announces that R. T. Steindorf, assistant to W. B. Marshall, Conveyor Sales Manager of the company, has been transferred to the Cleveland office.

THE Van Dorn Electric Tool Company, Cleveland, Ohio, has announced that J. M. Beggs has been placed in charge of its advertising department with headquarters at the home office in Cleveland.

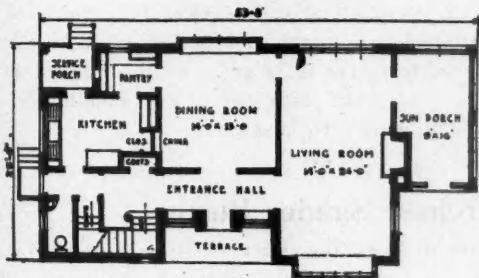
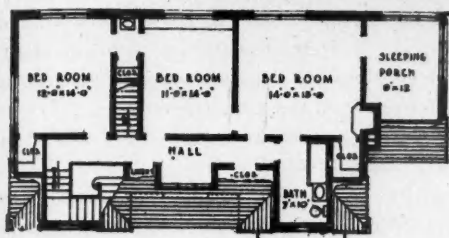
R. W. Procter has been transferred from his position with the Black & Decker branch of the organization and becomes general sales manager of the Van Dorn Electric Tool Company.



The Leicester

Design T104

Leland Lyon, Architect



FLOOR PLANS



You should know of the tremendous sales value of the certified bronze which is placed in brick houses certified by the Association. Write for the facts.

BRICK

beauty forever

District Offices and Brick Manufacturers Everywhere Are at Your Service.

A Charming Small Brick Home

The lovely, small brick home, pictured above, is but one of the many proven sellers available to you through the Common Brick Manufacturers Association.

You will find this model, The Leicester, in the booklet entitled, "Homes of Lasting Charm." The plans and specifications for this house, and many others, may be purchased at exact cost from this association. Specific questions as to the best brick treatment or information on brick will be promptly furnished, upon request.

We suggest that you send the coupon—indicating your choice. These booklets, on the subject of brick, have been carefully compiled and merit your attention.

COMMON BRICK MANUFACTURERS ASSOCIATION
of America

Au-2131 GUARANTEE TITLE BUILDING

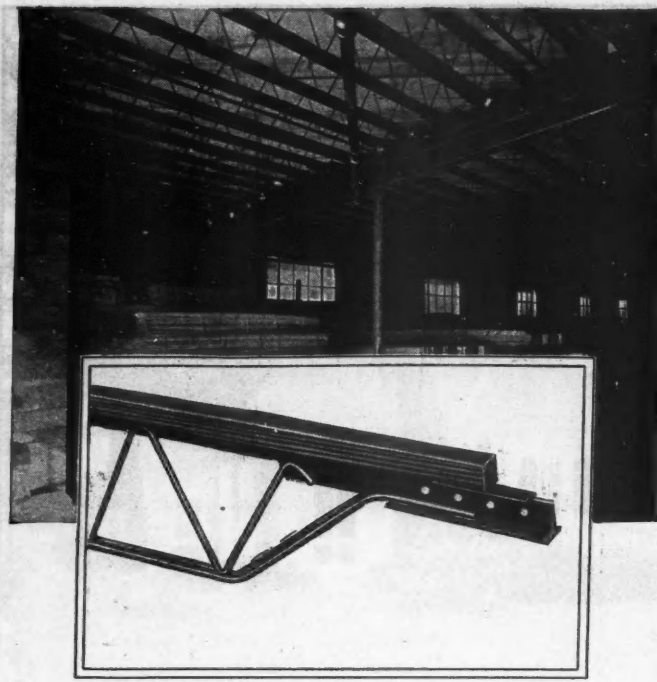
CLEVELAND, OHIO

Clip and Mail This TODAY

Without charge, please send me a copy of "Common Brick."
I am enclosing cash or stamps for the booklets checked.

- | | |
|---|--|
| <input type="checkbox"/> "Homes of Lasting Charm" 25c. | <input type="checkbox"/> "Farm Homes of Brick" 5c. |
| <input type="checkbox"/> "Beautiful Homes" (1 Story) 25c. | <input type="checkbox"/> "Brick, How to Build and Estimate" 25c. |
| <input type="checkbox"/> "Skintied Brickwork" 15c. | <input type="checkbox"/> "The Heart of the Home (Fireplaces)" 25c. |
| | <input type="checkbox"/> "Spanish Book" 25c. |

(Enclose \$1.40 if you want all the books)



The Strength of Steel at Practically Wood Joist Cost

NOW you can build floors having the strength of steel at a cost comparable to wood joist floors. The Massillon Nailer Joist makes this possible. Made of steel, these joists have wood nailing strips attached on top. Use them as you use wood joists. They are light, easily handled and placed in position. Nail your floor to the wood members on top. Attach any kind of ceiling to the bottom of the joists.

Floors made with Massillon Nailer Joists are rigid. The joists do not warp or shrink. Pipe and conduits are run through the open webs. Made in standard stock sizes for prompt shipment, Massillon Nailer Joists are placed without cutting or fitting on the job.

Send us your plans or call our nearest representative for quotation.

THE MACOMBER STEEL COMPANY
909 Belden Avenue Canton, Ohio

Massillon Products are manufactured and distributed in Canada by the Sarnia Bridge Co., Ltd., Sarnia, Ont.

MASSILLON NAILER JOISTS

AS a first step in an enlarged structural program, the Portland Cement Association, Chicago, has announced the appointment of Homer M. Hadley as regional structural engineer for the Pacific Coast. He will act in an advisory capacity to architects and engineers for the territory of California, Nevada, Oregon, Washington and British Columbia.

LEOD D. BECKER, owner and publisher of "Fuel Oil Journal," has disposed of his publishing interests and has been elected president of Electrol, Incorporated, of St. Louis. The executive and sales offices of this company will be moved to 227 E. 45th St., New York City. W. T. Koken, who has been president of the company becomes chairman of the Board, M. E. Simpson, formerly general manager of the Electrol Distributing Corporation, which has been merged with Electrol, Incorporated, becomes vice-president in charge of sales.



To Warehouse Metal Roof Decks

A NEW departure in the merchandising of metal roof decks has been announced by the Truscon Steel Company and the Genfire Steel Company, both of Youngstown, Ohio. Sections of Armco iron roofs will be warehoused and stocks have been placed in Detroit warehouses in standardized lengths of 19 feet 6 inches for the purpose of making possible immediate deliveries in the adjacent territory. Trucks and fast freight deliveries, within 24 hours time, are made possible throughout a wide area.

The roof decks which are being placed in warehouses by these two companies come in narrow sections which can be used in any desired lengths. Elaborate facilities for cutting the sections for the purchasers' orders have been provided. Other warehouse stocks of metal roof decks will be established by these manufacturers in large cities throughout the country. Dealers associated with them will handle local stocks for immediate service to customers.



Purchase Sander Business

AN announcement from the Porter-Cable Machine Co., Syracuse, N. Y., states that this firm has purchased and will continue to manufacture the Emmert Oscillating Spindle Sander, formerly manufactured by the Emmert Manufacturing Co. of Waynesboro, Pa.



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.

"Patio Gardens," by Helen M. Fox, published by the Macmillan Company, 60 Fifth Ave., New York City, contains accurate descriptions, pictures and plans of patios, pools, flower pots, balconies, stairways, fountains, tiles, wrought-iron work with suggestions for their adaptation. Price, \$6.00.

"Letters To and Fro," published by the Burnham Boiler Corp., Irvington, N. Y., is a new booklet, illustrated in colors and telling in the form of a series of letters a typical story of the selection of a Burnham heating plant for a residence.

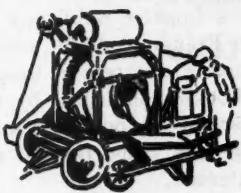
The Gleason-Tiebout Glass Company, 200 Fifth Ave., New York City, offers a new booklet on Celestialite, its equipment for producing lighting corresponding to natural daylight.

The International Cement Corp., 342 Madison Ave., New York City, offers a pamphlet entitled "Difficult Bridge Problems Solved with 'Incor,'" this company's perfected, high early strength portland cement.

Ask Us for Information



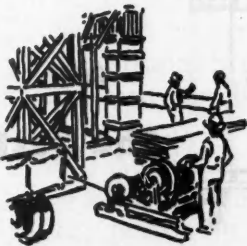
The American Builder Service Department will gladly put its readers in touch with reliable manufacturers of appliances, machinery, tools, building materials and supplies of every description.



Take Advantage of this Free Service



If you are interested in any kind of building materials, contractors' equipment and machinery, power shop equipment, heating system, plumbing supplies, water supply systems, lighting systems, elevators, school or church or theatre equipment, farm building equipment, building hardware, home conveniences, or anything that is used in constructing or equipping any kind of building—fill out the coupon below, send it to the AMERICAN BUILDER and we will take the matter up at once with the proper parties who will send you their catalogs, prices and any other information you desire.



Keep Your Catalogs Up-to-Date

From time to time manufacturers bring out new appliances, materials, machinery and equipment. You should be kept informed on the improvements by having on hand a complete reference library of catalogs published by these manufacturers.

If you need anything that is or is not advertised in the AMERICAN BUILDER or want something that is not used in building just let us know and we will gladly help you.

In order to get the best and quickest results please be sure to print or write your name and address plainly and also check your occupation in the coupon below. Remember—This service is ABSOLUTELY FREE to American Builder readers.



AMERICAN BUILDER, 105 W. Adams St., Chicago, Ill.

Gentlemen: I am in the market for the following items: Please put me in touch with manufacturers whom you know to be reliable and can furnish goods promptly:

.....

Name

Address

Please check your occupation: Building Contractor ☐; Dealer in Building Materials ☐;
 8-29 Prospective Home Builder ☐; Architect ☐

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

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.

"Wood Construction—Principles—Practice—Details," by Dudley F. Holtman, published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City, is a project of the National Committee on Wood Utilization and was prepared under the direction of a Control Committee of that organization. It is an attempt to supply a need of the building industry for complete and practical information on the use of wood in construction. Price, \$6.00.

"Massachusetts Building Laws Manual" has been published by the Massachusetts Building Officials Conference, 80 Boylston St., Boston, Mass. This is the first, 1929, edition of a volume which will be compiled and published annually by this organization. Price, \$5.00. By mistake this book was listed in the June issue without the price being given.

The Home Incinerator Co., 209 Grand Ave., Milwaukee, Wis., has issued a filing folder containing a new booklet illustrating its products and their installation in homes, estates, country clubs and commercial buildings.

The Triple Insulaire Co., 123 Wisconsin Ave., Milwaukee, Wis., has published a large "Master Plan Book" covering fully the characteristics and application of its new insulating units.

The Truscon Steel Company, Youngstown, Ohio, has issued a pamphlet announcing its Diamond "A" metal lath, a new product designed as a rigid and economical plaster base.

The Behr-Manning Corp., Troy, N. Y., has published a Price Book Number One, covering its complete line of coated abrasives and also a pamphlet, in colors, presenting the story of its durundum as a profit builder.

Miller & Gleason, Division D, Olean, N. Y., has issued a pamphlet describing and illustrating the characteristics and application of the Miller Drip Edge for the protection of roofing edges.

The General Electric Company, Schenectady, N. Y., has published two loose leaf file sheets covering its arc welding equipment, a circular on G-E industrial heating devices and a booklet on the "G-E Arc Welding School."

The Vento Steel Sash Company, Inc., Muskegon, Mich., has put out a new broadside illustrating its combination storm sash, basement windows, coal chutes, and other products and also a folder containing a list of suggested items for builders and including prices.

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has issued a file sheet on its type NAB Nofuz panelboards for residences, hotels, apartments, hospitals, office buildings and similar installations.

The H. B. Smith Co., Westfield, Mass., has published a new catalog No. 1435 covering its new "144" full surface radiator and a new catalog No. 1436 on the new Smith "16" boiler.

The Engineering Experiment Station, of the University of Illinois, Urbana, Ill., has published, in its weekly bulletin No. 42, an "Investigation of Heating Rooms with Direct Steam Radiators Equipped with Enclosures and Shields."

"Concrete Facts" is the title of a booklet published by Transit Mixers, Inc., Call Bldg., San Francisco, Calif., covering this company's equipment for mixing concrete in transit.

"X-Rays in Industry" is a new booklet published by the Eastman Kodak Company, Rochester, N. Y., outlining some of the applications of the X-ray in the inspection of the internal construction of opaque materials.

"Oil Heat and the Business of Living" is a new booklet published by the Oil Heating Institute, 342 Madison Ave., New York City, presenting in story form, based on actual experience, the advantages of modern oil heating for homes.



*Residence of Ambassador Dwight Morrow
Norrib Haven, Maine*

CABOT'S Building Specialties are the best you can choose, and they cost less to apply than old style paints and stains. Mr. Morrow's house has a nicely blended roof, and brilliant white walls, produced by

Cabot's

Creosote Shingle and Wood Stains
and Cabot's DOUBLE-WHITE Collophakes

Samuel Cabot
Inc.

141 Milk Street, Boston, Mass.

Gentlemen: Please send me your Building Specialties Handbook

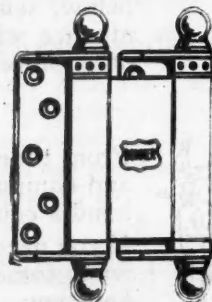
I am interested in ☐ Stained Shingles in Soft Colors
☐ Interior and Exterior Colors
☐ Insulation for Coolness and Quiet

AB-8-29

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Bommer Spring Hinges

are
the best



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the best

Millions and Millions

of People are Pushing

Them

whenever they open a door

Follow the line of least resistance

Use **Bommer** Always
They are the Best

Bommer Spring Hinge Co., Brooklyn, N. Y.



DAVIS BROTHERS GARAGE, MARION, ILL.
Plans and Steel by "International"

Contractors! Are You Getting Your Share of Garage Contracts?

THERE is good money for you in garage contracts—and now is the time to land them! When you learn of a new garage prospect, interest him in your ability to erect the kind of building he wants. Then get in touch with us. We will supply you with free plans and estimates, drawn to your specifications. Hundreds of contractors are using International Service to great profit, and International Steel is used in every state in the Union. Write for your copy of our free Garage and Steel Catalog. It will help to give you some practical talking points in selling profitable garage contracts.

INTERNATIONAL STEEL & IRON COMPANY

Evansville Dept. 18 Indiana

INTERNATIONAL PRODUCTS

Store Fronts	Public Garages	Steel Trusses
Steel Columns	Steel Girders	Steel Windows
Steel Ceilings	Elevators	Skylights
Sidewalk Lights	Roof Ventilators	Coal Chutes

Our Complete Stocks Assure Prompt Delivery

Kimball LIGHT ELECTRIC ELEVATORS

A group of all purpose Kimball elevators with capacity ranging from one thousand pounds and up. Each machine is built complete, sawed, drilled and fitted at the factory and can be easily assembled by a good mechanic at point of installation.

We especially recommend these inexpensive machines for mortuaries, creameries, bakeries, factories, small stores, warehouses and apartment houses. They are safe and economical to operate.

Guaranteed twelve months against structural defects. Automatic safety controls and brakes, heavy steel traction cables.

Write for particulars on the
Kimball Light Electric
Elevators.

KIMBALL BROS. CO.

Builders of Elevators for 46 Years
989-97 South Ninth Street
Council Bluffs, Ia.



Roosevelt Apartment Hotel, Rochester, N. Y. Massillon Bar Joist fire-safe floors throughout. Designed by Samuel Tandler (owner and builder); F. L. Heughes & Co., Engineers.



Fireproof Floors for All Types of Buildings

HOMES, garages and store buildings, like apartments, schools, hotels, hospitals—and in fact every type of building imaginable—are repeatedly built with Massillon fireproof floor and roof construction.

In every type of building, contractors welcome Massillon Bar Joists for the speed, simplicity and ease of erecting the construction. It is simply a case of "put up the joists, peg down the floor lath and pour the light concrete floor slab."

Massillon Bar Joists are made in standard stock sizes for every size and shape of floor panel. Send us a sketch or set of plans. A Massillon representative in or near your city will then tell you how much it will cost you to place this finest type of permanent fireproof floor construction in your building.

THE MACOMBER STEEL COMPANY
909 Belden Ave. Canton, Ohio

Massillon Products are manufactured and distributed
in Canada by the Sarnia Bridge Co., Ltd., Sarnia, Ont.

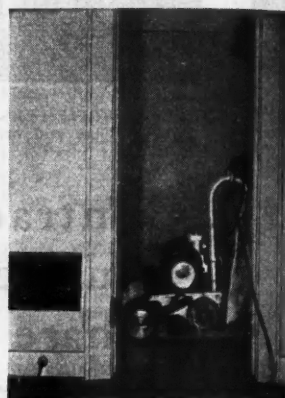
MASSILLON BAR JOISTS

Profit By These Advantages *with Speedmatic*

Excellent finish—speed—portability—there are many reasons why the SPEEDMATIC "8" Floor Surfer is proving profitable for many contractors and builders. The small diameter, high speed floating drum, securely held in place, cuts faster and gives a smooth, even finish to the floor.

Sands small spaces too

In addition to giving a perfect finish quickly on large floor areas, the SPEEDMATIC "8" is also ideal for sanding smaller spaces such as closets, landings, vestibules, nooks and corners. Sands right up to the quarter round.



Is portable

With motor removed, SPEEDMATIC "8" weighs only 75 pounds. Carry it in your pleasure car. One inexperienced man can efficiently operate it and produce maximum capacity of machine.



Is built on scientific principles

Combines the advantages of both truck and tilting machines. Rigid shock absorbing springs balance drum, eliminating vibration and chatter marks.

Low upkeep due to 16 precision ball bearings with 8 balls to each bearing. Less wear and tear on parts. Easy operation. No short circuits. Wiring is concealed. Runs off wall plug. Dustless operation by means of die cast aluminum fan driven at 6000 R. P. M.

The SPEEDMATIC "8" is ready to help build your reputation and profits. Ask for data on this and on the SPEEDMATIC "12" for still higher production.



The Porter-Cable Machine Co.
1721 North Salina Street, Syracuse, New York

PORTER-CABLE SANDERS

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Kimball

STRAIGHT LINE DRIVE ELEVATOR MACHINE

Sturdy, compact and vibrationless this powerful straight-line drive machine is the most modern elevator machine made.

With motor and machine aligned and bolted together as one complete unit there is no chance of misalignment. The electric brake magnets are submerged in oil, eliminating the noise of contact so objectionable in other machines. All vital points are housed and run in oil.

The mobile parts of Kimball Straight Line Drive machine are reduced to a minimum with very little to get out of order. A machine of long life that will give continuous and snappy service.

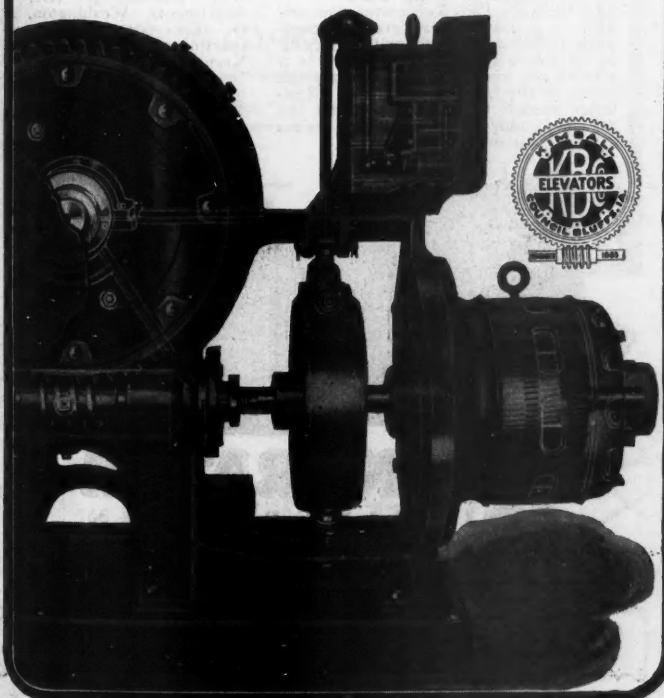
*Write for literature on the
Kimball Straight Line Drive Machine.*

KIMBALL BROS. CO.

Builders of Elevators for 46 Years

989-97 So. Ninth St.

Council Bluffs, Ia.



Weather-proof window sills of Bakelite Laminated

Window sills whose finish is not marred by rain or snow, nor by exposure to the hottest sunshine; that can be washed clean like a window pane, yet are tougher and more durable than wood, are those made of Bakelite Laminated.

These new type window sills do not split, shrink, swell nor warp. They closely simulate various wood finishes and grains, or may be obtained in almost any plain color.

Bakelite Laminated is also furnished for mop boards, kitchen dresser and table tops and other purposes. It is unharmed by soapy water, fruit juices, alcohol or other liquids. This new building material is made by The Formica Insulation Company, Cincinnati, Ohio, who will gladly send full information.

BAKELITE CORPORATION

247 Park Avenue . New York, N. Y.

Chicago Office . . . 635 W. 22nd St.

BAKELITE CORP. OF CANADA, LIMITED

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ever tried one of these SKILSAWS? It's a wonder in the hands of any carpenter. I find the SKILSAW is everything it is represented to be. Gosh, I've framed stud-dings, joists, hips, val-ley, jack and common rafters and find it a perfect tool. Any in-accuracy is in the opera-tor, not the saw."

"I'd recommend SKILSAW to any car-penter, contractor and builder."

To appreciate SKIL-SAW you must see it in action! Get behind the saw to get the facts about SKILSAW.

Four models to choose from.

SKILSAW

A FREE demon-stration will please you.

Write for one today—use coupon below.



SKILSAW INC Dept. H.

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I'll watch a FREE demonstration of your saw.

Name

Address

City..... State..... 13



The Appeal of the Handy Hopper Door!

When architects specify and builders use new features for making home-living more enjoyable in their apart-ments—they do so because experience has shown that desirable tenants demand them.

Take the Kernerator as an example.

When a housewife sees how easy it is to dispose of garbage, sweepings, tin cans, bottles, old magazines and papers by simply dropping them in the handy hopper door in the kitchen, or the hallway near her apart-ment—she's convinced that your building was designed for her convenience—and is also up-to-date.

No wonder Kernerator equipped apartments and build-ings stay filled with lease-renewing tenants. Facts and figures show that it quickly pays for its installa-tion cost.

Costs nothing to operate!

And there are no upkeep costs! The rubbish falls from the hopper doors to the combustion chamber in the basement where it is air-dried, without odor—awaiting only an occasional match by the janitor to destroy it, and flame-sterilize non-combustibles which are removed with the ashes.

Write for literature.

KERNER INCINERATOR CO.

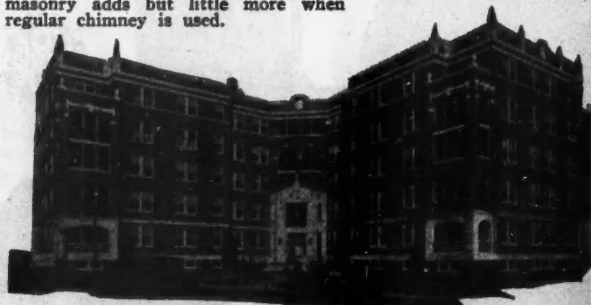
Offices in over 100 cities

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Milwaukee, Wis.

Should be in the plans
The Chimney-Fed Kernerator can sel-dom be installed in an erected apart-ment building and only with difficulty in an existing residence. There is a size for any requirement—from a small home to the largest apartment. Resi-dence models as low as \$90 and the masonry adds but little more when regular chimney is used.

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Apartments, Washington,
D. C., containing 64
apartments. Served with
Kernerator with 5 Hopper
Doors. George T. Sant-
myers, Architect. Harry
M. Bralove, Builder.



KERNERATOR

**Garbage and Waste Disposal
for New and Existing Buildings**

Garbage and
Waste Disposal



without Leaving
the Kitchen

When You Want 'Em Tight, Say "Reading"!

Reading Cut Nails are made for just one purpose—to grip tighter and to hold longer than any other type of nail! That is why Reading Cut Nails mean greater satisfaction and economy when used for roofing, sheathing, casing, flooring, and in the countless other places where superior durability and holding power are required.

We'll be glad to place in your hands, without obligation, our attractive Cut Nail Sample Card, showing various sizes of Reading Cut Nails. Just fill out the coupon below.

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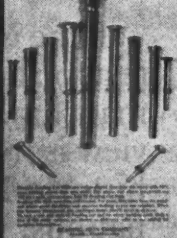
READING CUT NAILS

READING IRON COMPANY, Baer Building, Reading, Pa.
Please send me your Reading Cut Nail Sample Card and catalog.

Name.....

Address.....

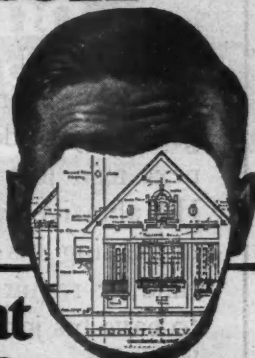
Try these
**SURE-GRIP
NAILS**
They'll stay tight
PERMANENTLY



**READING
CUT NAILS**

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 now is 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 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' 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 the "mysteries" of plan reading. For now you can get blue print training in three months that has taken others years to "pick up on the job." We train you at home 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.

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There is no hard, grinding study—the whole course is just like playing some interesting new game. Plans and lessons come to you from this old and approved school for men in the building trades. This is the kind of training that puts men quickly into \$4,000 to \$12,000 a year jobs and into contracting businesses of their own. You learn from actual working plans—to estimate all the costs—and to supervise the construction of a building.

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 to get into business for themselves. Burgess, Ill., stepped into a foremanship at a 200% increase in salary. Marchand, La., writes, "My salary is now increased 196%." After finishing his training, Baker, Ohio, made \$3,800 clear profit in three months as a contractor.

If you really want more money—if you hope to have a business of your own—if you want quick advancement in the building trades—decide now to get this training you must have for a real success. Simply mail the coupon below. It will bring real blue prints and a fascinating book, "How to Read Blue Prints"—ABSOLUTELY FREE. See what amazing opportunities are open to you in this billion dollar field. But don't delay!

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Chicago Tech Building,
118 E. 26th St., Chicago, Ill.

Chicago Technical School for Builders,
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Send me free blue prints and your book without obligation. It is understood that I may keep these without cost to me. It is also understood that no salesmen will call on me.

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Visit our big day or evening school attended by over 1,000 Builders. You can get the same training at home by mail—same plans, lessons and instructors. Your spare time is enough.

**FREE
Blue Prints
and Book**



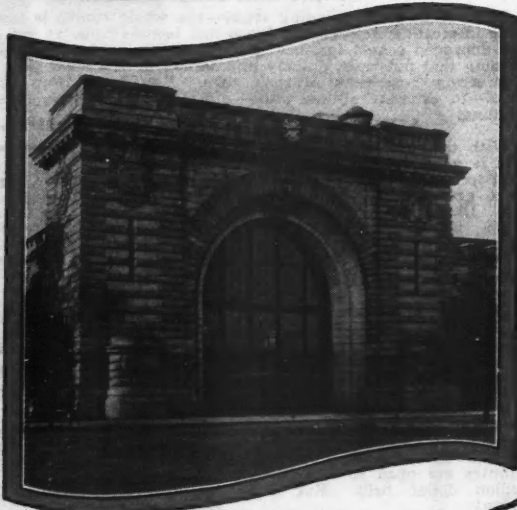
. . . Durundum Floor Paper Keeps Pace with construction schedules

MODERN construction moves fast, and the floor surfer of today has to get his job done and move out for the next man just as all other contractors do. His abrasive paper determines his success in meeting his schedule. To finish up on time he requires the fastest cutting paper; to have his job pass inspection, he must use a fine finishing paper; and to make his profit, he

needs an economical high production paper. Behr-Manning Durundum Paper, as thousands of floor surfacers have found, combines all these qualities. Its rugged electric furnace grain is the fastest cutting abrasive obtainable. The careful grading of the grain insures an extremely fine finishing paper, and this, combined with the tough paper backing, gives it a long production life.



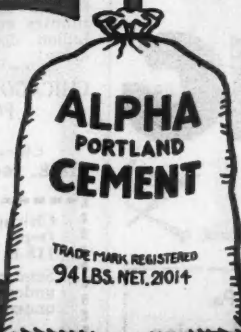
**BEHR-MANNING
TROY . NEW YORK**



View of historic armory, U. S. Naval Academy, Annapolis, Md., photographed November, 1928.

The test of time

Time imposes the most crucial tests on both materials and workmanship. The accompanying view is from a photograph of the historic Naval Academy at Annapolis, Md., constructed in 1902. ALPHA CEMENT of standard quality used to the extent of 10,000 barrels.



Alpha Portland Cement Company

Baltimore	Battle Creek, Mich.
Birmingham, Ala.	Boston Chicago
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use **ALPHA** cement

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Little errors in laying out the building plot, checking verticals, in grading or laying off angles—it's easy to make such errors and it costs real money to correct them. It costs much less to avoid errors by using a K & E Builders' Convertible Level. It's a level and transit in one. Use it and be sure of your accuracy. It's a product of Keuffel & Esser, the world's largest makers of precision instruments. No. 5114 illustrated couples accuracy, long life in strenuous service and reasonable price.

Ask for detailed description of this and other models made especially for builders.

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USE them on chisels, plane bits, draw knives, scrapers, gouges, hatchets, etc. There is a Carborundum Brand Sharpening Stone for every edge tool from an axe to a razor. ¶ These are the stones that have a free, fast cutting action—wear evenly—hold their shape—and they do not fill or glaze.

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products.)



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Abrasive Products

THE CARBORUNDUM COMPANY, Niagara Falls, N. Y. C9

Please send me your booklet: "How to Sharpen Wood-Working Tools."

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Address _____

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(WITH AUTOMATIC FEED)

IT'S PART OF THE EXCLUSIVE CARTER DOOR SET

OVER 2500 BUILDERS ARE
NOW USING IT

(Many using two to five sets)

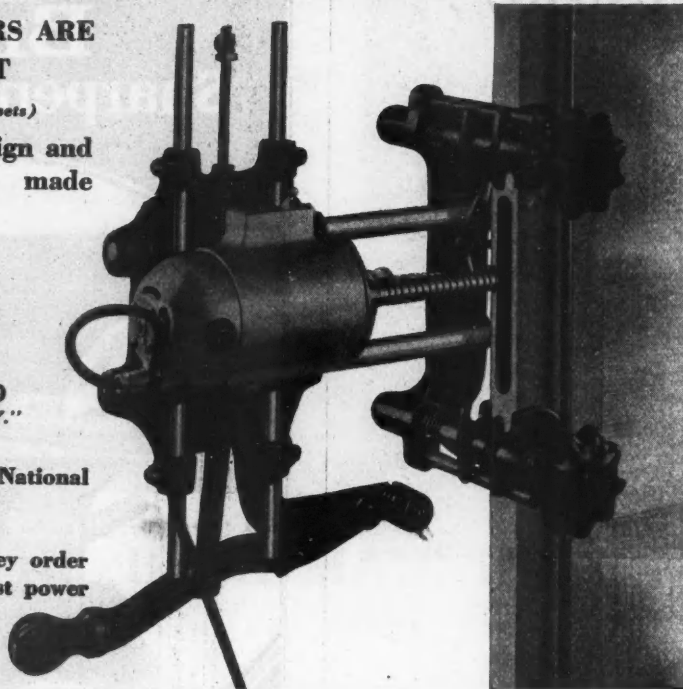
The simple Carter design and
production schedule made
possible the price of

\$98.00 CASH

30 DAY TERMS \$105.00
"All Prices F.O.B. Phoenix, N. Y."

(Reference—The Liberty National
Bank of Syracuse)

Just send a check or money order
for \$98.00 and get the first power
lock mortiser with auto-
matic feed for under one
hundred dollars.



In sending in your
order be sure to ask
about the remainder
of the door set.

The Carter Super
Plane for fitting
doors, sash, tran-
soms, etc.

The Hinge Butt
Router and Templet
—lock face templet.

They do the work far
more accurately than
by hand and many
times as fast. Folder
"A" shows how.

THE R. L. CARTER CO., Inc., 1301 Chestnut St., Phoenix, New York
SOLE MANUFACTURERS OF THE DOOR SET, THE STAIR SET, THE HAND SHAPER AND FULLY ADJUSTABLE ROUTER

This Huge School is Waterproofed with "ANTI-HYDRO" and Guaranteed Dry for FIVE Years

A carload of "ANTI-HYDRO" (3300 gallons) was used to waterproof the foundations, walls, floors and swimming pool through the mass of concrete of this Two-and-a-Half Million Dollar school building.

A cheap substitute for "ANTI-HYDRO" had been approved by the architects and could have been bought for one-half the cost of "ANTI-HYDRO." This substitute would have meant a considerable saving for the contractor.

But—

The contractor insisted on a guarantee of a waterproof job which the manufacturer of the cheap substitute refused to give.

"ANTI-HYDRO" was then used and the job was guaranteed to remain watertight for FIVE years.

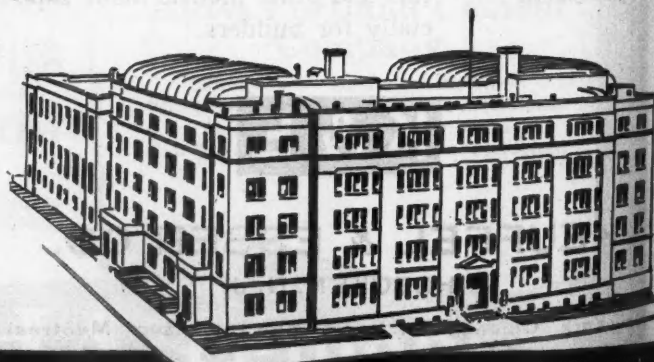
You may pay more for "ANTI-HYDRO," but the first cost is the last cost. Cheap substitutes are a false economy—and always cost more in the end.

"ANTI-HYDRO" is easy to use and saves time, labor, and repair costs. It is a liquid integral compound which mixes readily with water without the aid of skilled labor. For 25 years it has been the accepted BEST. Use "ANTI-HYDRO" on your next water-proofing job for guaranteed results.

ANTI-HYDRO WATERPROOFING

265-295 Badger Ave.

Newark, N. J.



GIRLS COMMERCIAL HIGH SCHOOL — BROOKLYN, N.Y.
W. H. GOMPERT, ARCHITECT. — GEORGE A. FULLER CO., BUILDERS.

Craftsmanship Comes First!



STYLE
No. 70S

Good raw materials, fine factory equipment—these any one can claim.

But the human element—careful designers, thorough craftsmen, rigid inspectors—these you find at WILLIS. An organization of sheet metal artisans with but one single aim—

building products of outstanding quality; priced on a par with ordinary kinds.

Merit is always sure of recognition. Proof of this is in the fact that architects, contractors and builders the country over, for more than thirty years, have specified WILLIS sheet metal building products.

Our catalog will tell you more of the reasons why.

Write for it.

Willis Manufacturing Co.
Dept. 128 Galesburg, Illinois

HESS MIRRORED CABINETS



Specify Hess Cabinets

ON your next specification sheets, be sure the cabinets are Hess. Nationally advertised, nationally known for a quarter of a century, Hess typifies the ideal in mirrored cabinet beauty. Reasonable in first cost, they assure a lifetime of satisfactory service. The cabinet is of enameled steel, concealed behind a large plate mirror. No cause for you to worry when your specifications read "Hess".

Hess Warming & Ventilating Co.
1220 S. Western Ave., Chicago, Ill.

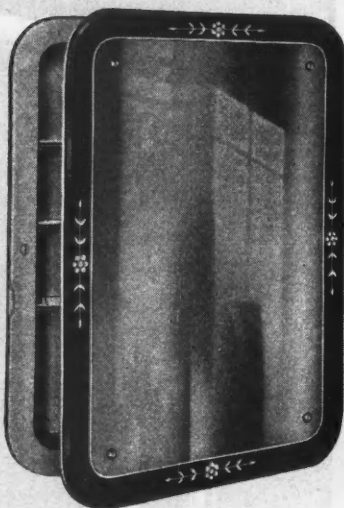
If you have not received a copy of the new Hess catalog, be sure to send for one. It contains complete information on the selection of medicine cabinets.



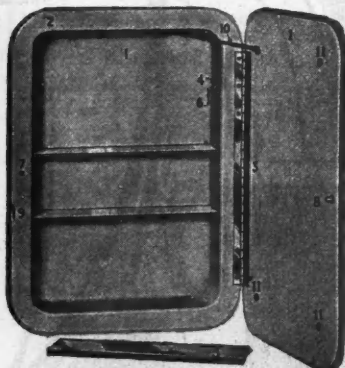
Just Press the Button—

CORCORAN
one piece
Steel Bathroom
CABINETS

Corcoran Cabinets are the Original and Only One-piece Steel Cabinets. No cracks—No seams—No welded joints—No raw edges.



—it Opens!



Cabinet body and flange drawn from one continuous piece of steel. Round corners inside and outside harmonize with all bathroom fixtures. Continuous piano type brass hinge will not sag or warp. Bulb edge glass shelves cannot slip forward. Special pad prevents mirror breakage.

Now, the cabinet that opens with a touch of the finger! Release catch—door swings open automatically—quickly—easily. Plunger acts as a cushion when closing door, preventing mirror breakage. Again Corcoran has done the unusual—improved an already superior cabinet for the bathroom. A growing leader, Corcoran Cabinets are outstanding—accepted—and approved the world over. This new feature adds another important selling point to a cabinet that's easy to sell. Write today for descriptive catalog giving details of the entire line.

Corcoran Cabinets are sold through Jobbers only.

Write for new Catalogue

The CORCORAN MFG. COMPANY
Norwood, Cincinnati, Ohio

Complete stocks are now being carried in Chicago, New York, Philadelphia and Boston; communicate with Corcoran offices at 1820 McCormick Bldg., Chicago; 1228 Locust St., Philadelphia; 11 West 42nd St., New York, and Beaudette & Graham Co., 915 Boylston Street, Boston.

Corcoran Mfg. Co., Dept. AB-8

Gentlemen:

We are interested in Corcoran One-Piece Steel Bathroom Cabinets. Kindly send catalogue and full details.

Name.....

Address.....

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

☐ Contractor

☐ Dealer

☐ Architect



The sound selling points of
Wall-Tex will please
your trade



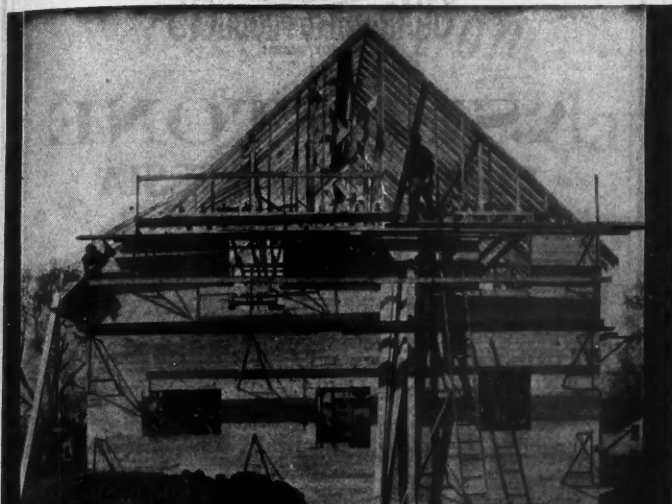
INVESTIGATE the full Wall-Tex line. Wall-Tex is a remarkable fabric wall covering—just the thing for homes, hotels, apartments and public buildings. There is a Wall-Tex pattern for every type of room, for living-rooms, dining-rooms, bedrooms, kitchens and baths—all can be effectively decorated with this durable fabric. Recommend Wall-Tex for your next interior contract for the following reasons:

1. The Wall-Tex line is complete.
2. It is priced right—assures you of a good turnover and profit.
3. Easy to hang.
4. Tough, strong and elastic.
5. Every year we add new patterns.
6. Wall-Tex covers plaster cracks in old walls and ceilings and helps prevent new plaster cracks from showing.
7. Easily washed.
8. A splendid base for plaster and paint.
9. Colored to harmonize with every scheme of decoration.
10. Wall-Tex is backed by 30 years' experience in making coated fabrics.

Constant improvement of the Wall-Tex line is winning country-wide favor of the architect, builder and decorator. Write your name and address on margin of this page in sending for samples, folder and name of nearest Wall-Tex distributor. Dept. D-9-29. The Columbus-Union Oil Cloth Company, Columbus, Ohio



Trouble Savers



are
Everlasting Money Makers

Strong!

In a Lifetime of Use, Trouble Savers

- Do not bend
- Do not break
- Do not burn
- Do not collapse
- Are not blown down by heavy winds.

A Permanent Investment that Returns Original Cost on Every Job.

Trouble Savers are put up and taken down in one-tenth the time of wood scaffolding, and require no repair or replacement outlay. They help you to meet and beat competition.



Trouble Saver Studding Brackets support a ton. Will not bend.



Trouble Saver Nail Attached Brackets support a ton. Held by four nails.

Mail coupon today for 30-day trial offer



Trouble Saver Adjustable Steel Trestles (patented).

Quickly adjusted to desired height, 8 sizes. Each size adjustable from 4 to 15 different heights, giving a range from 16 inch to 12 feet by 3 inch lifts.



Trouble Saver Bolt Brackets approved by State Industrial Commissions.

The Steel Scaffolding Company

1101 N. Governor St., Evansville, Ind.

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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

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WITH YOUR PACKING?

TRY

Stronach Nails

NON-SPLITTING, SURE HOLDING

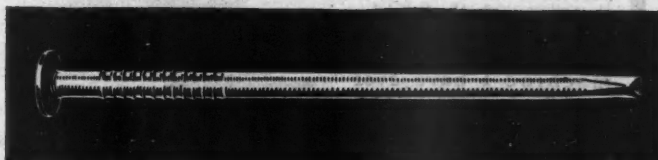
Stronach Nails offer great advantages, over ordinary nails, for packing and box making.

The triangular, punch-like end reduces wood splitting 70% to 90%. Materials are saved, the work is done faster, the contents of boxes, crates and barrels are given full protection.

Often less expensive wood may be used—grades you cannot employ with diamond pointed nails because of splitting.

Stronachs' greater holding power makes more secure packing. They drive through metal straps and hoops better than other nails. They may be used in nailing machines without change in equipment.

THEY
DON'T
SPLIT
WOOD
AND
THEY
HOLD
!



STRONACH NAIL COMPANY

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Pittsburgh, Pa.

Mail the coupon today for complete description and samples of Stronach non-splitting Nails.

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The NEW
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Superseding the Convertible Level

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The new "Universal" is the highest development in combination Levels and Transits. It is superior to and displaces the convertible level FOR ANY USE OR NEED.

No previous experience required for perfect success in operation—this is the ideal instrument for any builder or contractor. Instantly changeable to level or transit, it is the most scientific development of its kind available. Only a slight touch of the finger changes it to either need. An indispensable instrument for the up-to-date builder.

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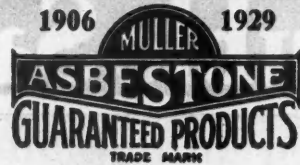
Milwaukee, Wis.

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Level position

Transit position



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Durable, beautiful, comfortable, economical, is decidedly appropriate for hospitals, schools, churches, office buildings, hotels, apartments and residences. ASBESTONE affords a jointless, smooth, sanitary surface that is easy to the tread, non-slippery, and noiseless, giving maximum comfort. First cost is moderate, the upkeep practically nil. It will withstand years of severe wear. ASBESTONE flooring preserves its fresh new appearance for years; it is fire-proof and waterproof; easy to clean and may be waxed and polished. Easily applied over any old or new sub-floors, at any angle, over and around any irregularities.

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Manufacturers of Asbestone Flooring and Sana-bestos Tiles

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**The Best Machine
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One contractor writes: "I have operated a number of machines, but the Master is the fastest and the truest of all. It is the greatest labor saver, and the best money-making machine I have ever used."

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"12
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 in One"

"Master
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Overhead Crosscut;
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You need a
**HUTHER
 Dado head**



Developed from our own patents, this adjustable groover cuts either with or across the grain. Cutters may be used singly, in pairs or in any combination necessary for desired cut.

Send for one on approval. It may be returned at our expense if unsatisfactory.

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Preservation . . . is part of to-day's building job

YOU benefit and your customers benefit when you use "Silver Seal" Aluminum Paint as the priming coat on all paint jobs. Corrosion and water-resisting characteristics make it the most efficient, permanent and economical preservative for all steel and wood construction.

By using "Silver Seal" on exterior as well as interior surfaces you com-

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Preserves and Protects

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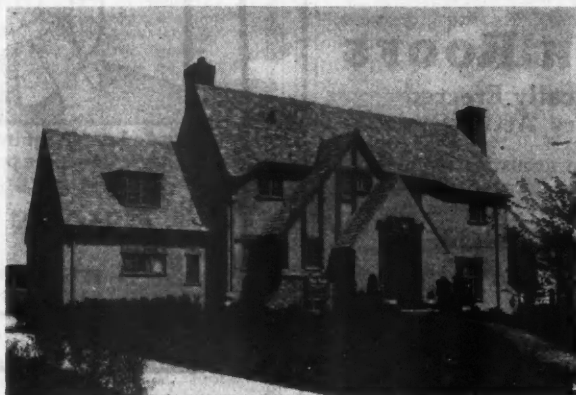
Distributors Wanted

2550 Sq. ft. SANDED

IN AT 8 A. M.

**7 hours
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By Payne & Harmon



OUT AT 4 P. M.

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Profits**

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The AMERICAN HIGH PRODUCTION Sander

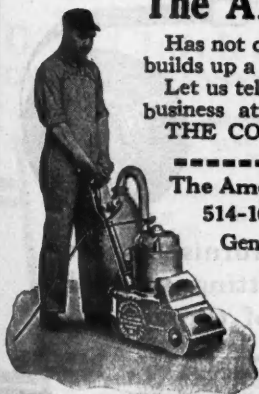
Has not only established new Production records, but it makes you a greater profit and builds up a larger volume of business.

Let us tell you how AMERICAN Sanders will work for you by building up a greater business at lower operating costs. There is no obligation—**JUST MAIL BACK THE COUPON TODAY.**

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Gentlemen: I want more information on the American Floor Sanders and the way they can help me make more money by reducing operating costs.

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**Cuts 4 inch Lumber—Weights only 24 lbs
Stands Up Under Heavy Work**

Why make hard, slow, unprofitable work of sawing wood or any other hard material?

WODACK SAWS PAY BIG DIVIDENDS!—GIVE MOST CAPACITY FOR THE MONEY—4 MODELS

Model B is the most complete electric hand saw available. 11" blade bevels up to 60°. Motor develops 19/10 H.P.

Model K is the *little wonder*. Cuts up to 2 3/4". Weighs only 15 lbs. 1/2 H. P. G. E. Universal Motor.

Model C is the lightest weight, lowest priced saw ever made to cut up to full 4 inches.

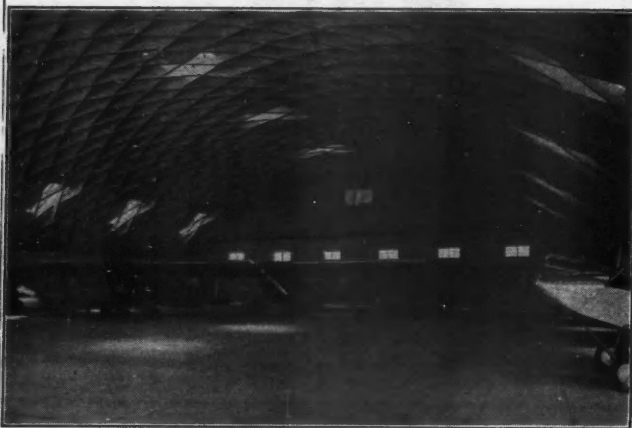
Also Lock Mortiser--Router--Hammer--Drills

Ask for demonstration
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MODEL "B"




Lamella Roof on Clover Field Airplane Hanger
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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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HEIGHT
CHANGED
AT WILL



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An O. K. Portable Elevator is the best investment you can make in contractors' equipment. It will save you more time, labor and material than any other piece of equipment on the market. The O. K. is especially designed for hoisting materials in wheelbarrows or concrete buggies. It is all steel construction, electric welded, equipped with single drum O. K. Hoist and 8 or 12 H. P. gasoline engine. It is delivered to you complete, ready to set up and run. Nothing else to buy.

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State.....

City.....

"He didn't wait for the breaks..."

"—started in here together"



"THAT'S Mr. Potter's office. He's the new General Manager, you know — just promoted. Must be making close to \$12,000 now.

"Back in the days when he was still Joe Potter, he and I and Billy Todd started in here together. We were close friends then — in the office and outside.

"Our first small raises came sort of automatically. Like lots of other fellows, we just sat back and waited for promotion—'getting the breaks,' we called it.

for promotion—'getting the breaks,' we called it.

"—and then—General Manager"



"But Joe kept going ahead steadily — from one job to the next and finally into the General Manager's chair. Nothing like that for us! We congratulated him and then told each other afterwards that he was 'lucky.'

"Finally, as the 'breaks' failed to come, I learned why, Joe had gone so far. He didn't wait for the breaks — he made them for himself—by studying at home in his spare time!

The firm knew he was training himself to handle the job ahead and picked him for promotion."

How much longer are you going to wait before taking the step that will help you to get a better position and a larger salary?

If you want to get ahead there's just one sure way to do it—train yourself to do the day's work better than any other man in the office. Ability is bound to count. Your employer will be glad to pay you more money if you show him you deserve it.

A home-study course with the International Correspondence Schools will prepare YOU for the position you want in the work you like best. All it takes is an hour a day of the spare time that may now go to waste.

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"The Universal University"

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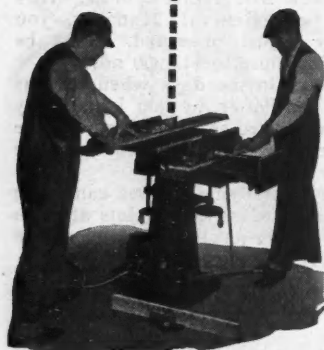
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City.....State.....

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Add the Mill-Man's Profit to Your Profit on Every Job



**"Buy One
Machine
Instead of
Eight"**

Every time you buy mill work you're paying someone else a profit that you could make for yourself.

Hundreds of contractors have realized this and have equipped themselves with a **SIMPLICITY** woodworker, *one machine* that performs practically every woodworking operation the contractor has use for—28 in all.

The **SIMPLICITY** combines *eight machines in one*: Saw Table, Jointer, *Practical* Thickness Planer, Speed Spindle, Borer and Mortiser, Band Saw Attachment, Upright Spindle Shaper Attachment. Lathe Attachment. Does real work—not a toy. Each operation done in the usual and ordinary way.

Keep your shop busy in rainy weather and in the winter.

Our customers get expert advice free on what to make, how to make it and how to sell it, for a year-round business.

Combination Woodworking Machine Co.
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INSULATED TO ANY
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WATERPROOFED



Laid like boards and interlocking, Rigideck Roof Decks are quickly and easily installed on any building. Light in weight, fireproof, permanent and economical.

NAILER JOISTS

for any Light Occupancy Building



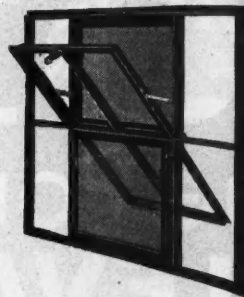
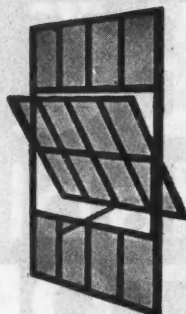
Wood flooring is nailed directly on the wood strips attached to the joists. Metal lath ceiling below provides fire protection. Genfire Nailer Joists assure permanent construction at the cost of wood.

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Warehouses and Offices in all Principal Cities.

Dealers Everywhere

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SATISFACTION FOR OWNER GOOD PROFIT FOR DEALER

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Full line Casement, Utility and Basement Windows carried in stock. Attractive prices—Good profit to dealer.

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Make Blocks, Brick & Tile for Less! Money!



ZAGELMEYER MULTIPLE MOLDS in your own plant. You, too, can grow to manufacturing independence from a moderate start, the same as many others have done. Get started now. Send today for free booklet.

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Cut down your building costs by making your own concrete blocks, brick and tile with



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FOR more than twenty-five years this precision built, patented Cone-bearing pulley has been an overwhelming favorite—selling in larger quantities than any other pulley in the world. It has a large ($\frac{3}{4}$ ") self-lubricating cone bearing rather than the ordinary riveted pin or axle and the wheel is always kept in perfect alignment. Thousands of them still operating perfectly after years of use demonstrate the unlimited service that their all-steel construction gives.

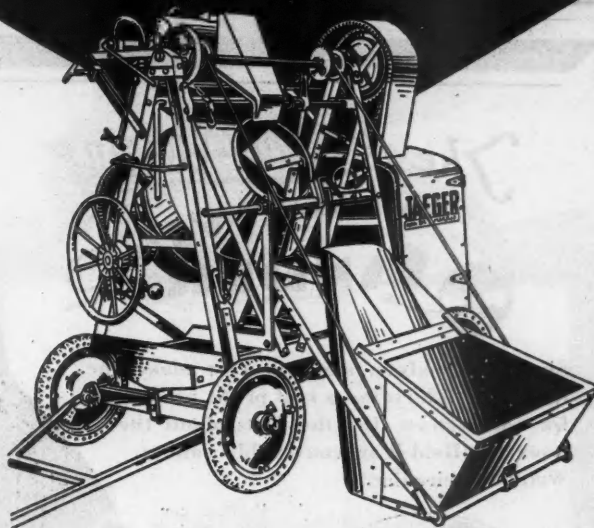
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Send for catalog, free samples and prices.

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GRAND RAPIDS, MICHIGAN



**Faster Skip Shaker Loader -
5 Second Discharge
Timken Bearing, All-Steel Construction
One-Bag Capacity -
Usual Half Bag Price!**



Where Can You Buy Its Equal?



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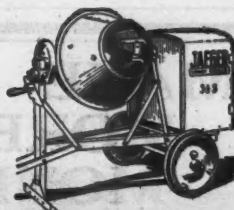
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All steel $\frac{1}{2}$ -bag outfits, roller bearings—fast, husky and dependable. Get our catalog and compare values.



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Send catalog, prices and terms on
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7, 10, 14, 21, 28 ft. 1 and 2 Bag $3\frac{1}{2}$, 5, 7, 10, 14 ft.
☐ Contractors Pumps—Towers—Hoists
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\$18 to \$20 A WEEK IN SPARE TIME—

"I average about \$18 to \$20 a week now on the Foley. . . I am working every day so I haven't much time to devote to saw filing, but I always have time to brag about the Foley Filer."
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FREE PLAN shows you how to start a fine paying business of your own. Write for it at once.

Hundreds of carpenters are keeping their own saws in perfect condition, and making extra money, too, with their Foley Saw Filers. After you find out how much easier and better your saws cut when they have been filed on a Foley, and how much longer they stay sharp, you'll be a Foley booster, too.

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Files all kinds of hand saws, hand saws $\frac{1}{8}$ " to $4\frac{1}{2}$ " wide and cross-cut circular saws 3" to 24" diameter with standard 3-cornered taper file. Better and quicker than the most expert hand filing. Easy to operate—even all teeth at the same time it files so that every tooth cuts.

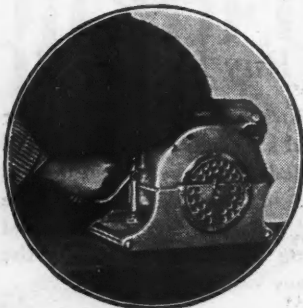
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The Reid-Way WHIRLWIND SANDER

Simplicity, safety, and low cost make the Reid-Way Whirlwind a real profit producer for contractors. Get the facts about the powerful Reid-Way convertible sander. Write for circular.



Positive control insures perfect results even with inexperienced operators



May be used as bench sander or inverted in special base as a jointer. Floor surfacing attachment

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Strong Enough to hold a horse "EVER-LASTING" Nail Brackets are



Safe as the ground under your feet.

Easy to put up or take down.

Ten times faster than scaffolding.

Sturdy enough to last a lifetime.

Guaranteed to give satisfaction.

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For Sale at all Leading Lumber and Builders' Supply Dealers

DEALERS!!

Our offer will interest you. Write for details.

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Don't be satisfied with what you've got. You can make increased profits with Diamond Weather Strips. Every present or prospective home or building owner in your vicinity is a prospect for you. Average 33 1/3 to 50% profit . . . and no investment until the contract's made. Our 500 dealers report Diamond Weather Strips a pleasant, profitable, permanent income. You, too, can make more money with this quality line.



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**PRACTICAL THE METAL
DIAMOND
WEATHER STRIPPING**

Columbus,
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MAIL-BOX

FOR U.S. AND CANADA



Attracts Home Buyers

Because of its beauty and convenience, the Mail-Box makes a hit with women. It saves many steps and protects mail. Costs little. Easily and quickly installed. Adjustable to any wall thickness. Lasts as long as the house. Price \$4.75 to \$12.00. Beautifully finished.

Write for circular and our proposition.

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BOSS MIXERS and HOISTS

YOU GET SALESMAN'S & JOBBER'S PROFIT!

SAVE \$42 to \$384 ON EACH MACHINE

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SAME HIGH QUALITY

Regardless of this drastic price cut, the quality of BOSS Mixers and Hoists remains the same. They have always been noted for their heavy duty construction and materials. Under no consideration will we ever sacrifice this reputation. Get the catalogue. Note the specifications and compare the prices. You get the same patented Re-Mixing Action and other exclusive features that have made BOSSes preferred wherever used. Hundreds of BOSS machines have ten, twelve and fifteen years of continuous service behind them and still going strong. For quality of design, materials and construction we defy anyone to find a better built machine than a BOSS. You can now get all this for less.



BOSS 108
"NON TILTER"
patented re-mixing
action, steel
construction, high
speed performance
with one man
control.

Get Our Prices Send Coupon for New Catalogue

With Confidential Wholesale Prices. The new BOSS Catalogue gives complete information on all the BOSS Mixers, Pavers and Hoists along with the new confidential wholesale prices. Even if you do not want to order now, get this new catalogue and keep it on hand for future use. Fill in the coupon and mail today. It will save you money. Though you may have bought direct from a manufacturer before you have never been able to buy at these prices because no salesman's or jobber's commission is figured in. Prices on every machine are greatly reduced. Get the new catalogue with wholesale prices.

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1 YEAR GUARANTEE

GUARANTEE—All BOSS equipment is guaranteed for one year against defective materials and inferior workmanship. Any parts proving defective will be replaced free of charge (electrical or engine equipment excepted, as this equipment is guaranteed by the respective engine manufacturers) upon return to us of defective parts, carrier charges prepaid for our inspection. American Cement Mach. Co., Inc.

5 DAYS' FREE TRIAL

So confident are we that every BOSS Mixer and Hoist will give complete satisfaction, that we offer you five days' free trial. Order a BOSS. Use it in the field. If within five days you do not find it exactly as represented in every way, send for return instructions and refund of purchase price. This protects you; you can't go wrong on a BOSS. As long as we have sold on this basis, we have never had a customer demand his money. This proves BOSS quality. Every BOSS machine is backed up with an iron clad guarantee. Read it above.

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AMERICAN CEMENT MACHINE CO.,
220 S. Fourth St., Keokuk, Iowa.
Send me your new catalogue showing complete line of BOSS Mixers, Pavers and Hoists with confidential wholesale prices.

Name _____
Address _____
Town _____ State _____

NEW CATALOG WITH WHOLESALE PRICES TELLS ALL



THE BOSS 3-1/2 NON TILTER. One half bag drum type trailer mixer with 1 disc wheel, cushion rubber tires, batch hopper, a HP Stover engine, mounted on steel engine housing.

CLIP AND MAIL THIS COUPON NOW!

Plenty of PEP Left to Enjoy Yourself



A little clear thinking will show any man that it takes the weight, power and guts of a full size Floor Surfer like the Improved Schlueter to eat away the surface of hardwood floors hour after hour all day long—and do it right.

5 O'CLOCK

A little more thinking will make you choose the Improved Schlueter for your floor surfacing "assistant"—because the Improved Schlueter has a patented suspension device on its steel roller which enables the roller to adjust itself to floor irregularities. There are no weights to shift, no levers to bother with. The Improved Schlueter does the work for you—and when the hands of your watch point to 5 o'clock, instead of the old "tired out" feeling, you have plenty of pep left to enjoy your evening.

LEARN MORE—

The Improved Schlueter is the "Peer of all Floor Surfers." It is an assistant that will save time and make money for you. It has many exclusive features you should know about. Mail the coupon below and we will send you full details with our Free Trial Offer and Easy Payment Plan.

LINCOLN SCHLUETER FLOOR MACHINERY CO.
233 West Grand Avenue (Dept. AM-8)
Chicago, Illinois

Gentlemen:
Send me full details of the Improved Schlueter and your FREE TRIAL Offer and Easy Payment Plan.

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Address _____
City _____ State _____



EASY MONEY MANUFACTURING THESE PRODUCTS SPARE TIME-FULL TIME

**200 to 500%
PROFIT-
Shown in this
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People spend money willingly beautifying their homes. Decorative pieces in any color for porch, garden and lawn sell themselves. H. G. Young, New Jersey, invested \$97.00, made \$2,700.00 in spare time. A Michigan man sold \$2,000.00 worth to one concern. You can do the same. No experience needed. Make them spare time, or go into full time manufacturing. Nearly all profit. Big demand in your locality. Modest investment starts you. Expand from profit. The Colorcrete catalog tells how and shows equipment. Send for it now.

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ALUMINUM GENERAL PURPOSE (90 lb.) FLOOR SANDER



**Latest Model—
Just Out!**

Built for
**GREAT SPEED and
HIGHEST QUALITY
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No vibrations—no dust
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Roller sands even with
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of machine. 9' long
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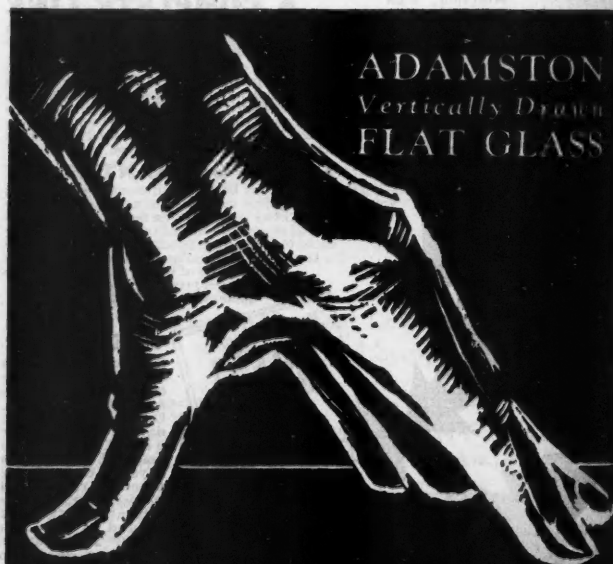


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ADAMSTON
Vertically Drawn
FLAT GLASS

Of Great Tensile Strength

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Can Depend Upon

Dependable Basement Fed INCINERATOR

Seco No. 50 now \$48.50



Incorporates in foundation wall underneath or near fire-place or other flue. 4-bushel capacity. Suitable for service in either small or large homes. Price of assembly \$48.50. Gas attachment \$5.00 additional. Employs the exclusive SECO 4-wall basket-type grate and secondary air supply parts which insure rapid drying and thorough combustion when ignited. Approximate masonry cost \$20.00.

There is a SECO for every need—Basement types, chimney-fed types, portable types and outdoor types. Descriptive folder and complete details supplied promptly on request.

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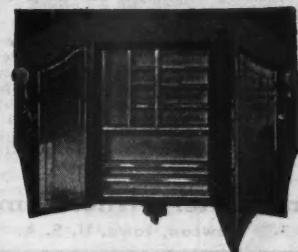
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STEEL BATHROOM
Cabinets**



THE keynote in construction is COLOR! And these bathroom or lavatory cabinets impart just enough colorful harmony to give the "touch of tomorrow" to the structure of today.

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MIDDLETOWN OHIO

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I'd like to know about your new line of cabinets. Please send full particulars.

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Expansion Bolts

Ackerman-Johnson

What are the compelling reasons why ACKERMAN-JOHNSON Expansive Screw Anchors have become the most popular type with Electricians and the various Trades Mechanics everywhere?

Because in comparison with the work and uncertainty in setting the older type Expansion Bolts for making fastenings to concrete and masonry generally, it becomes an actual pleasure to set the ACKERMAN-JOHNSON.

Because there is distinct fascination in so easily setting so small a device with a realization of the tremendous load it can hold.

Because there is great satisfaction in leaving a job knowing it could not have been better done.

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Concrete Inserts

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**Make This Test
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If you have never
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**FARRAND
RAPID RULE**



You'll scarcely believe that steel can be made which is both rigid and flexible. This six or eight foot rule, which coils in a small, vest-pocket size holder, measures straight away, around corners, or circumferences with equal facility and accuracy.

If your dealer cannot demonstrate this rule, send in the coupon printed below, and a six inch sample piece of the rule blade will be mailed to you, with no charge.

H. A. FARRAND, MFR.
Berlin, N. H.

Please send to me, free, a six inch sample piece of the rule blade used in your rule.

Name.....

Address.....

KOST-KUTTER

Portable Utility Saw

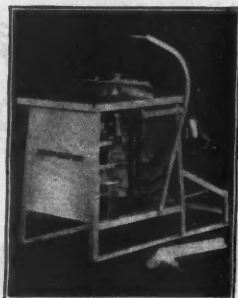
An ideal rapid-production rip or cut-off saw for the shop or out on the job. The Ball Bearing spindle glides in a straight line, a full depth cut all the way.

Reinforced steel table and frame—lighter and stronger than cast iron—three adjustments on saw spindle—precision miter fence—may be had with either $\frac{3}{4}$ h.p. electric motor or $1\frac{1}{2}$ h.p. Briggs & Stratton 4-cycle engine.

Details and name of nearest distributor on request.

Freshwater Fishel Company
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The Best, Fastest and most Economical METHOD

Write us for information and samples.

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A MATTER OF DOLLARS AND CENTS

Most of the value you build into a house is out of sight. But oak floors aren't. A home-buyer recognizes them instantly and judges the quality of the building accordingly. You can sell an oak-floored house *more quickly*, and realize an added profit many times greater than the trifling cost of building with oak instead of a cheaper flooring. Get the figures on oak flooring from your lumber dealer. Or write us direct. OAK FLOORING MANUFACTURERS' ASSOCIATION, 1238 Builders' Building, Chicago, a bureau maintained by the oak flooring industry for the benefit of home-owners and builders.

Oak flooring advertising will be carried on during 1929 on an increased scale. Look for the advertisements in "House & Garden", "House Beautiful", "Good Housekeeping", "Better Homes and Gardens" and "Literary Digest."



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Win-Dor casement hardware makes casement windows as convenient as they are beautiful. Casements can be opened or closed through the screens. For wood or steel sash. Write for Catalogue.

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and our co-operation will enable you to build a prosperous and permanent business installing MASTER METAL

WEATHERSTRIPS

WRITE US TODAY for information regarding our agency proposition and sales helps.

MASTER METAL STRIP SERVICE

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Speed up your work and make it safe with our dependable heavy gauge brackets.

EVER-READY BRACKETS pay for themselves

Send for descriptive circular and prices.

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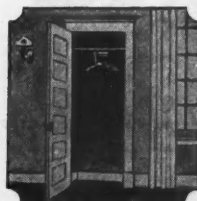


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For Builders especially!



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The Popular Rustic Effects HOW TO MAKE THEM LASTING

The study shown above was done in rustic style with Ligni-Salvor. Here, the builders were striving for a finish that harmonized with this style of architecture and found it in the beautiful nut-brown finish of this wood preserver!

As long as that structure stands, the wood will be solid and beautiful. No need to worry about next year's refinishing bill . . . no cause to fear any wood decay.

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LIGNI-SALVOR "Best Wood Preserver"

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We are now
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Kuhls compositions are unequalled for calking around windows, pointing up terra-cotta and all other stone work, waterproofing the joints between the roof and walls, all kinds of glass construction work and tile setting, etc., in fact, any place where a watertight joint is required. These compositions adhere strongly to wood, metal, glass, concrete, etc. They never dry, crack or crumble, always remaining elastic under any conditions. Any color to match.

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saw is well
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Asbestos Shingle Cutter

More roof work per day—Less weight to carry—Less walking on roofs—Cuts all thicknesses of shingles



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KEES SCREEN HANGERS

Permit snappy installation and removal of storm windows or full length screens. Easily opened for cleaning. Special guide flanges direct storm window into position.

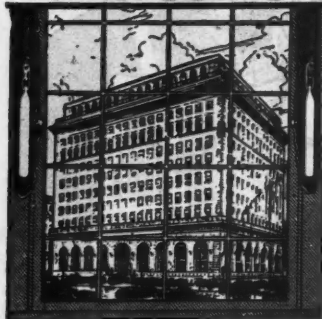
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With Labor at \$1 an Hour....

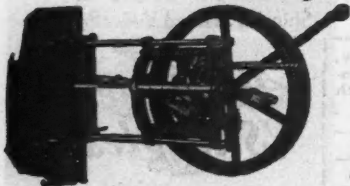
An hour is required to cut two mortises with brace and chisel. At \$1 an hour labor that's 50c a mortise. Twelve mortises an hour are easily cut with the Champion Mortiser. At \$1 an hour for labor that's 8 1/3c a mortise—a saving of 42c a mortise over brace and chisel methods. Does not require skilled

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MASTER Slide Rule

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GUESS WORK
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Every inside measurement at a glance. Just slide out the Master till it reaches from stop to stop. (It runs out like a tape—it does not fold.) Exact measure shows automatically. No guessing. Quick results. Other side of rule gives standard measure. Remains rigid while in use. Ask at your Dealer. Write for price and information.

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NEW IMPROVED MODELS
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FLOOR SURFACING AND REFINISHING

Greater production in square feet per hour.

No chains or gears to oil, grease or wear. Portable—may be carried by one man.

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Ask about the New High Speed
Light Weight FREE-O-DUST
Surfacer

Electric Rotary Machine Co.
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Matot

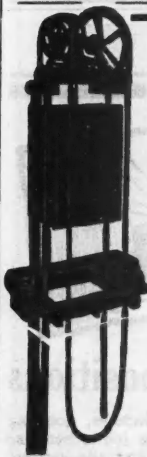
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Matot machines are roller-bearing through-out, and guaranteed for five years.

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Manufacturers of Hand Power Dumb Waiters and Elevators



New FREE CATALOG!

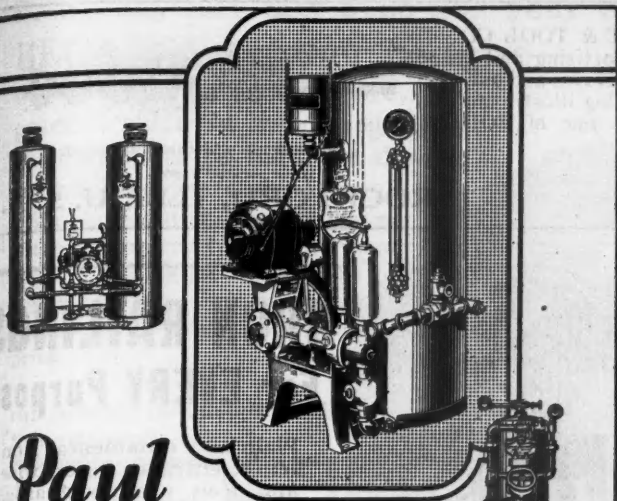
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Containing hundreds of fixtures for every purpose and every taste. Our selection is the finest and most complete. Be sure you have our catalog before buying. Our prices save you money and our **MONEY BACK GUARANTEE** gives you 30 DAYS TRIAL.

Also describes fixtures for Churches, Theatres, Auditoriums and Public Buildings. Contractors, Builders, Electricians are invited to write for our proposition.

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Products Help Sell the Homes You Build!

HOMES beyond the water mains can be modernized inexpensively with a dependable Paul Private Water System. City homes sell easier when equipped with Paul Water Softeners (Dual flow or Automatic). A Paul Electric Hot Water Heater adds the final touch of comfort that clinches the sale.

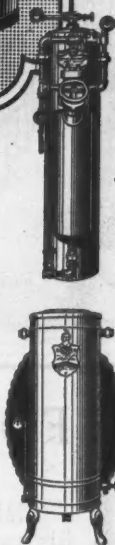
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The Fort Wayne Engineering & Mfg. Co.

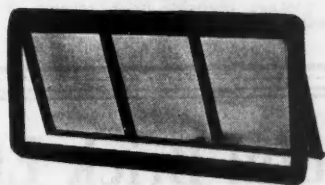
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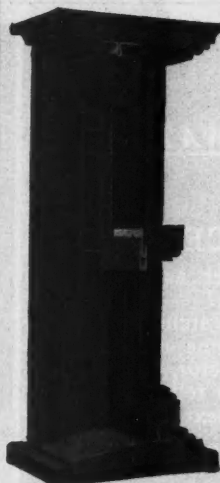
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Gentlemen: Send literature and samples.

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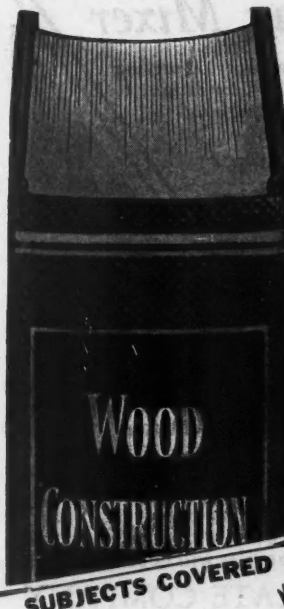
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City..... State.....

I am a

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Principles — Practice — Details
Prepared under the Direction of the Control
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By **DUDLEY F. HOLTMAN**
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- elimination of waste.
- greater efficiency in the use of wood.
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The book emphasizes the possibilities of efficient construction and shows the user of wood how to use lumber effectively and without waste.

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A. B. 8-20

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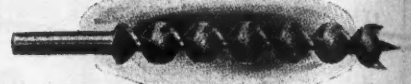
The first seven chapters of Wood Construction include information on factors affecting the use of wood in construction; lumber grading, grade provisions, and working stresses; the principal woods used in building and construction; the identification of common woods; preservative treatment; the use of paints and stains, and methods of preventing termite damage. The last four chapters contain information on approved methods of using lumber in light building construction and millwork, and in both heavy timber and temporary construction. In an appendix are given compilations showing the standard grades produced in the various species, and tables of the lumber grades used for various construction purposes.



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 High Quality Hollow Mortising and Wood Boring Tools that give service and satisfaction. Write for new catalog illustrating and describing our complete line of FOREST CITY tools.



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WEHRLE



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Isn't that what every buyer as well as owner is looking for in a home?

Sure is—and the Wehrle Watchman will add that very thing to every home as well as a nice profit to you Mr. Contractor.

Investigate this sturdy little fellow today and let it prove itself on your next job.

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A sweet-running drum with a superior mixing action. Long bearings, Dot lubrication, quality construction throughout. Ask for circular.

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THE FINEST Tool Manufactured for important wood work.

Specially adapted for Hardwood operations; indispensable to the High Class Carpenter and for Cabinet and Pattern Works.

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Special Offer

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So writes a wide-awake builder, now enjoying increased business. And Struco in its many beautiful colors for wainscoting, toilets and many other uses made it possible. If you are the wide-awake contractor, builder or architect a book and samples will be sent you free.

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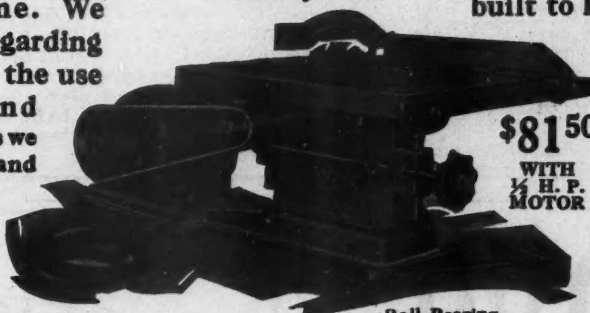
P. S. Why not ask \$125 for your saw? It would still be a big bargain!

BECAUSE, brother, because—

we take our own medicine. We practice what we preach regarding the savings to be made by the use of machine instead of hand labor. In building our machines we use every means to reduce hand labor, and a big part of our savings are passed on to you in this remarkable machine at a low price.

**MODEL-N
Safety-Saw**

A practical combination Saw Table built to handle builders' work from rough rafters to the finest interior trim.



\$81.50

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MOTOR

Table raises and lowers ON A LEVEL and tilts to a full 45 degree angle.

Rips, cross cuts, miters, bev-els, rabbets, dados, grooves, bores, sands, grinds, etc.

It will do more woodworking than any five men using hand tools. Ask about our free trial and time payment plan.

YOU TOO

can reduce your costs by using this machine!

We also manufacture a complete line of other woodworking machines, selling from \$35.00 up.

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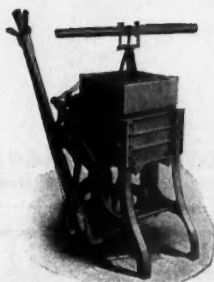
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Machine for Light
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SPRING HINGES

The "Ajax"



TYPE 3001

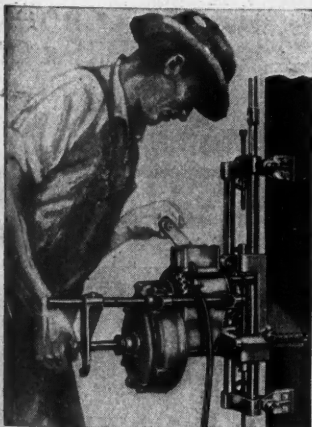
Construction and appearance are important points to consider when selecting a hinge.

The "Ajax" Spring Pivot Hinge is made of high grade material and has been designed with many important features which are worthy of special attention. These include an adjustable tension, alignment device, hardened steel roller-bearings for piston and ball bearing for carrying the weight of the door.

The reversible beveled side plates present a pleasing and neat appearance when applied to the door.

Chicago Spring Hinge Company.

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Will you try an ALTA Electric Lock Mortiser at Our Expense?

You can cut four times as many mortises including lock and face plate in one operation in an hour with an ALTA Electric Lock Mortiser. It's the fastest tool of its kind in the

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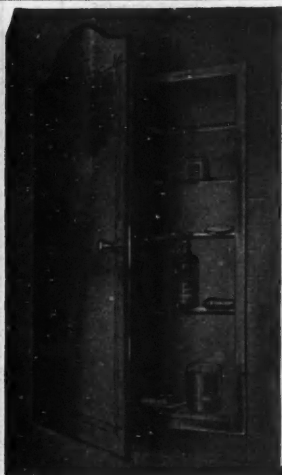
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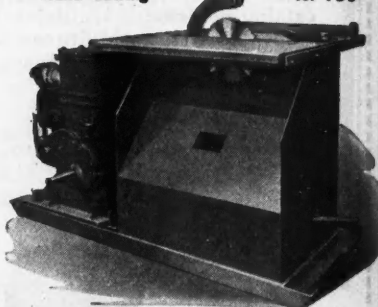
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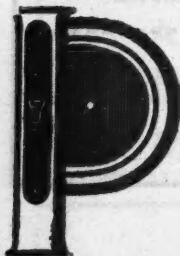
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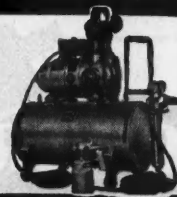
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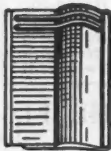
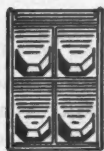
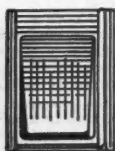
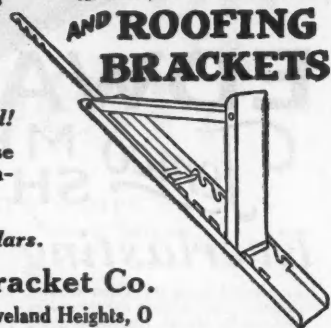
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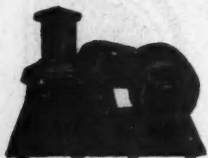
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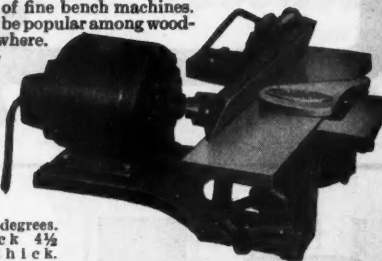
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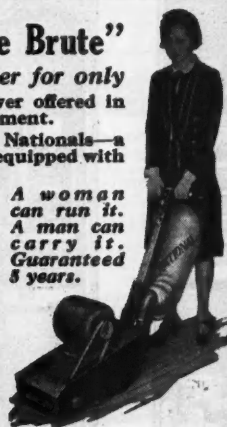
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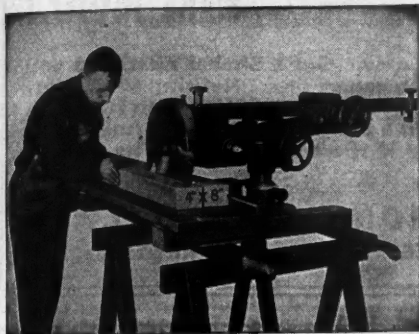
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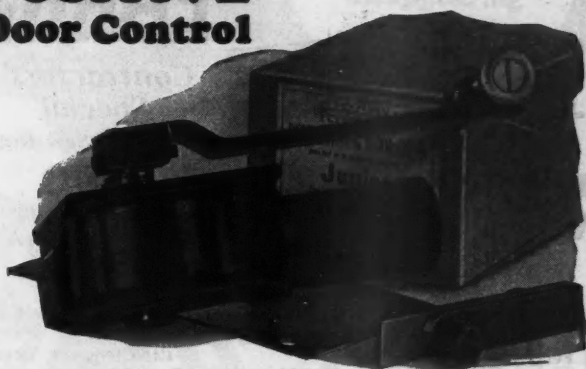
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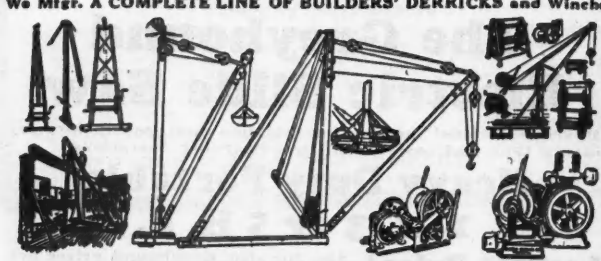


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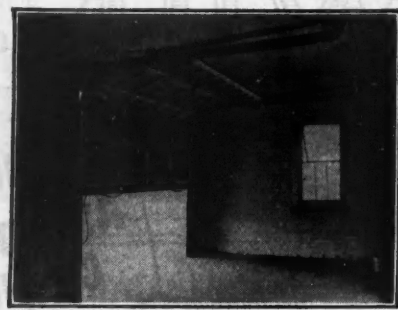
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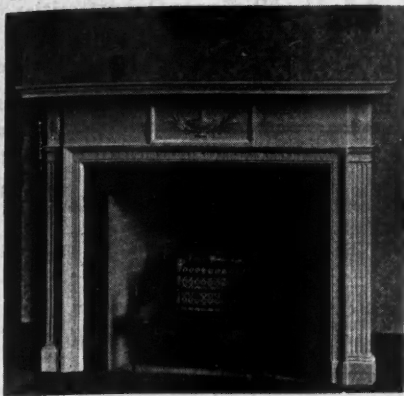
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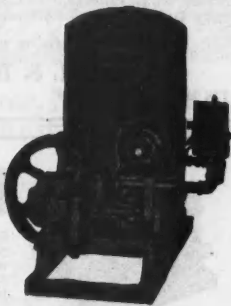
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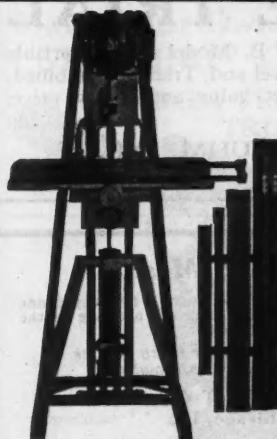
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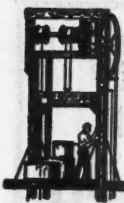
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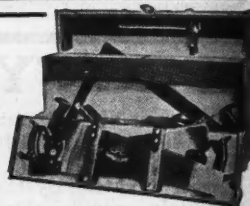
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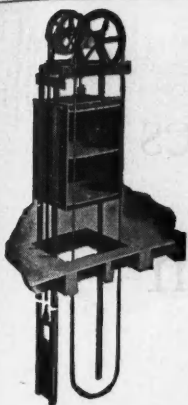
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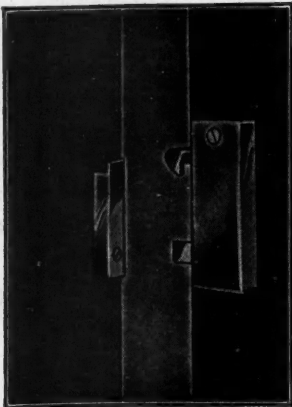
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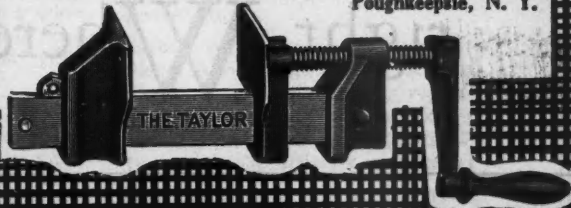
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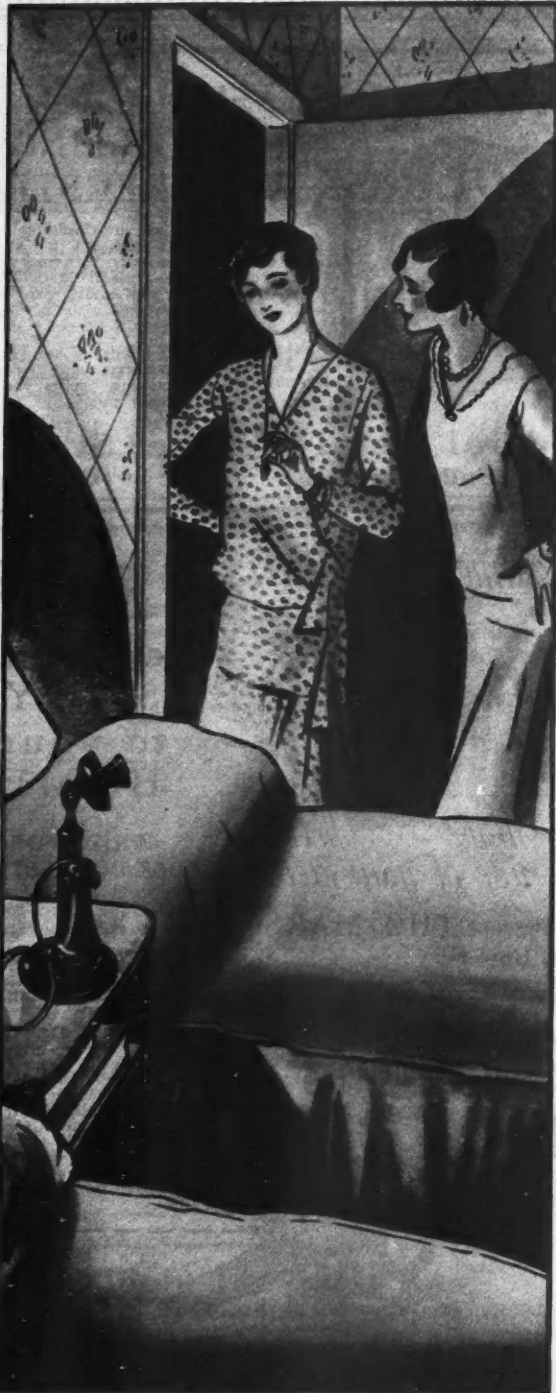
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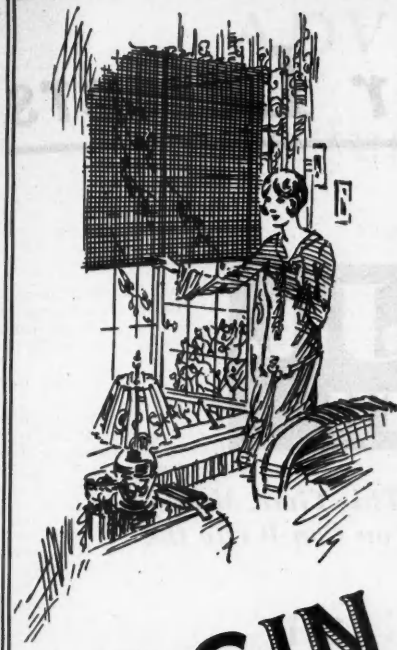


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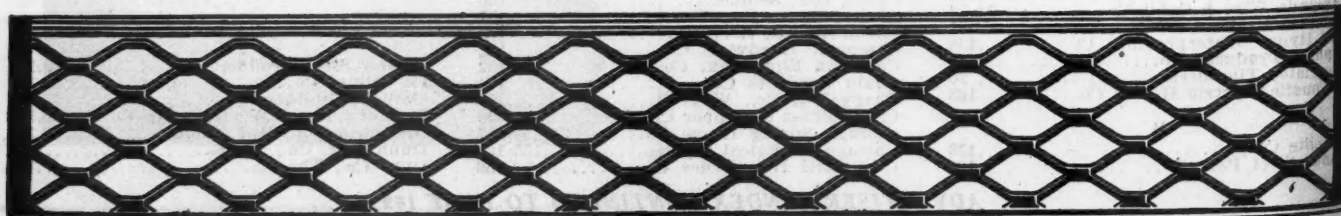
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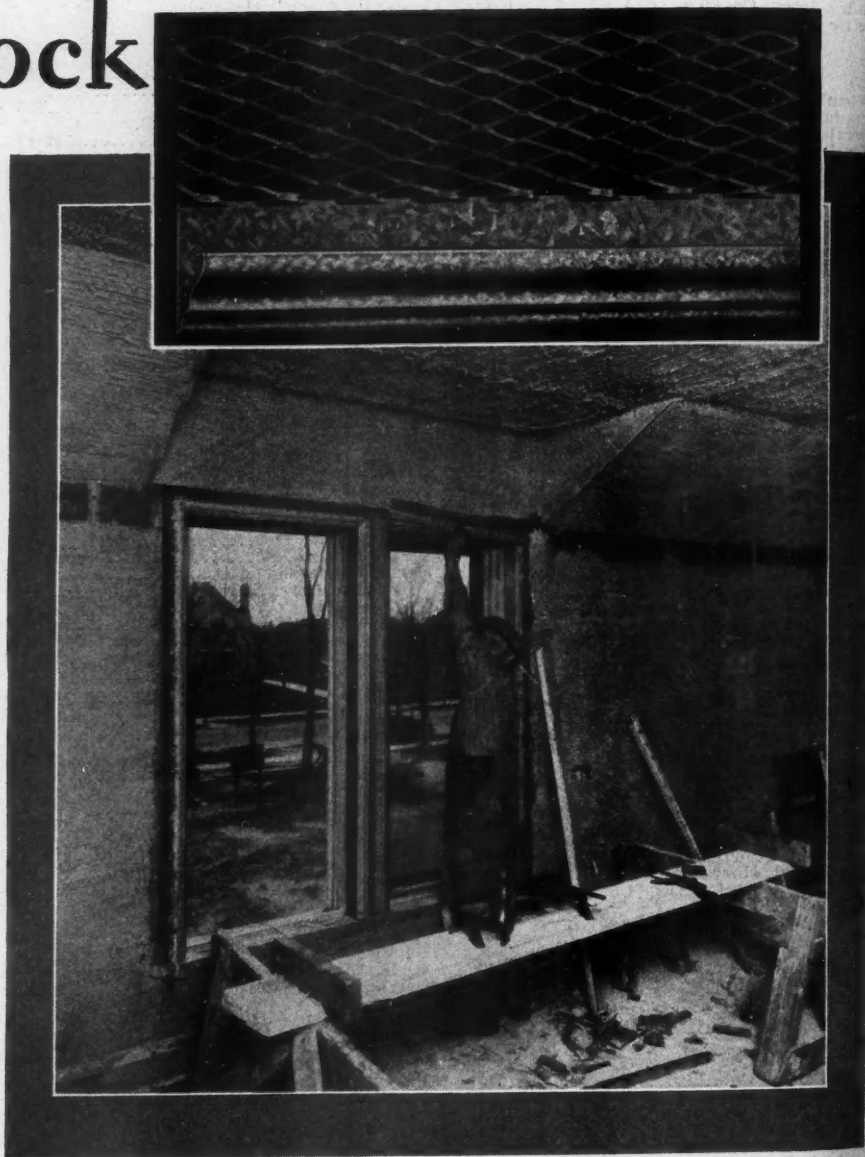
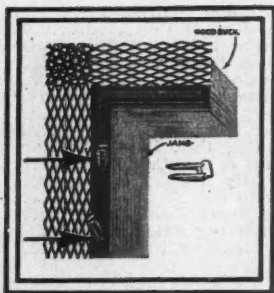
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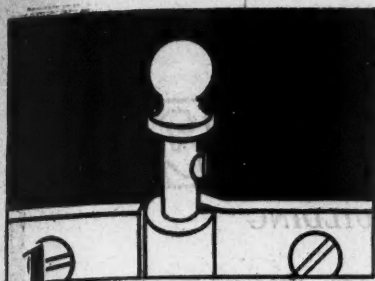
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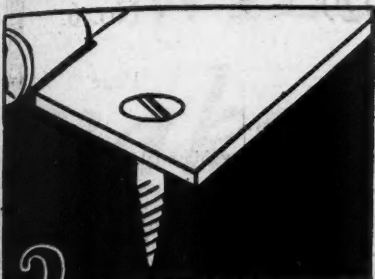
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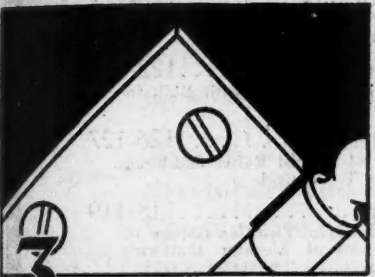
These Six Features Insure Quality in Frantz Deluxe Butts..



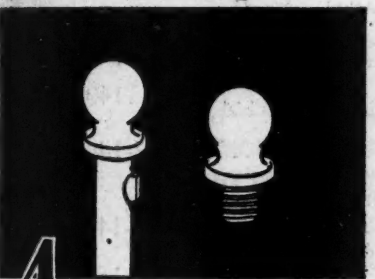
1•Non-Rising Pins



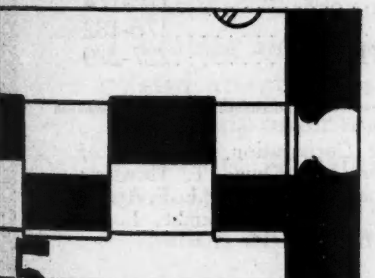
2•Proper Countersinks



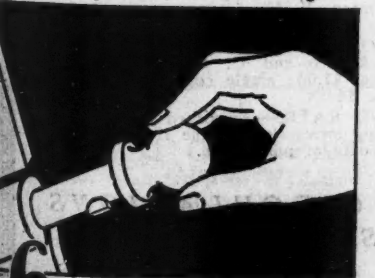
3•Clean Edges



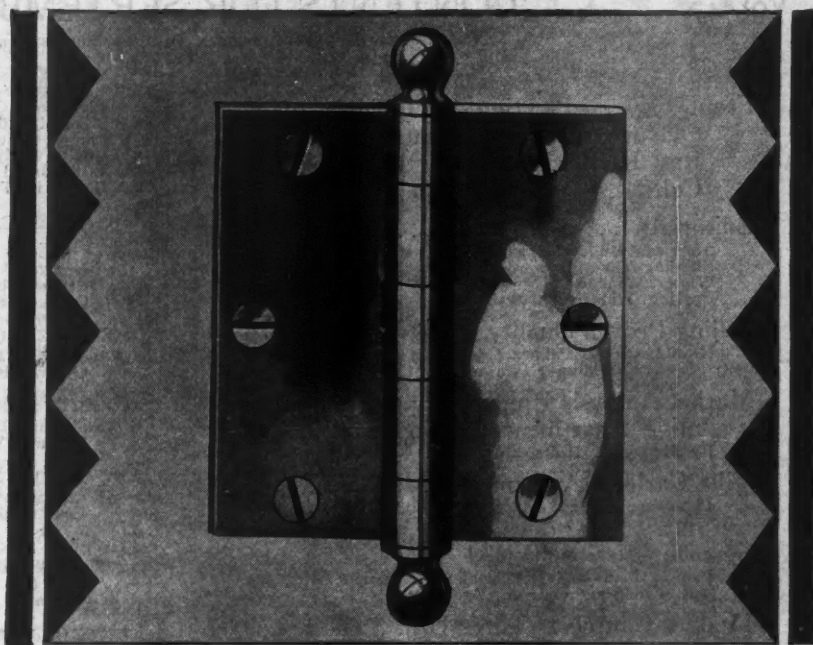
4•Rolled Pins and Nibs



5•Square Broaching



6•Reamed Barrels



1. The small wing keeps the pin from turning when the door is swung, and consequently prevents it from rising.

2. Screw holes are located to assure maximum security. They are smoothly countersunk to fit properly the screws furnished.

3. Accurately cut to standard sizes. Blanked from cold rolled steel of uniform thickness. Edges are cut clean and true.

4. Pins and nibs are rolled from the finest of cold drawn wire to assure long wear. Both are smoothly rounded.

5. The leaves slide together easily and fit closely to make a smooth barrel. This is accomplished by square broaching.

6. Inside of the barrel of every loose pin Butt is reamed to assure easy removal and replacement of the pin.

Frantz Butts are made with the same care and of the same quality materials that characterize all Frantz Products. That's what makes them popular with Builders.

You want Frantz features—easy installation and long, satisfactory service—and you can afford to insist on them from your Dealer because Frantz Butts cost no more.

There's no better recommendation for Frantz Products than the reputation the Products themselves have built. Dept. A-929, Frantz Mfg. Co., Sterling, Ill.

No Hardware
is Genuine
FRANTZ
QUALITY
without the
Red Label

FRANTZ

TRADE MARK

Guaranteed Builders Hardware