**AMERICAN BUILDER**

**THE WORLD'S GREATEST BUILDING PAPER**

**Vol. 39. CONTENTS FOR SEPTEMBER, 1925**

**No. 6.**

- Around the Family Table .................................................. 119
- Pay No Money to Strangers! ............................................. 121
- Editorial Page .................................................................. 123
- Building Against Earthquakes ........................................... 123
- Lessons Learned from the Santa Barbara Disaster ............... 126
- Prize Winning Basement Plans ......................................... 126
- PORTFOLIO OF NOTABLE ARCHITECTURE ......................... 129-132
- The Stock Yards National Bank, Chicago's Replica of Independence Hall; A. Epstein, Structural Engineer. The Paramount Theater and Office Building, Times Square, New York City; C. W. and Geo. L. Rapp, Architects. The New York State Roosevelt Memorial, Winning Design by John Russell Pope, Architect. This Memorial will be built in connection with the American Museum of Natural History, New York City.
- From Our Daily Foreign Mail .............................................. 133
- Construction Uses of Short Lenghts of Lumber ................. 134
- Report of Survey by Department of Commerce and Central Committee on Lumber Standards.
- Better Plastering ............................................................... 139
- Details of Home Building .................................................. 144
- Landscape Architecture and the Home .............................. 142
- The Fall Blooming Flower Garden ................................. 148
- Plate No. 1 of a Series of 6.
- Homes in Colors .................................................................. 148
- Mr. Radford Tells Why Homebuilding Benefits All.
- BLUE RIBBON HOMES IN COLORS .................................. 149-164
- The Lawton ......................................................................... 156
- Colorplate I A Dutch Colonial Home of Six Rooms with Garage to Match—Color Sketch of Dining Room.
- The Lakeside ........................................................................ 158
- Colorplate II A Delightful English Cottage of Seven Rooms—Color Sketch of Convenient Kitchen.
- The Lenox ............................................................................. 160
- Colorplate III A Straight Gable Colonial of Six Rooms—Color Sketch of Master Bedrooms.
- Photographs of Two Living Rooms .................................... 162
- Colorplate IV A New England Colonial and an Italian Style Living Room.
- Living Rooms of Distinction ............................................... 164
- Colorplate V A Room Library and a Living Room with Old English Beamed Ceiling.
- The Lexington ........................................................................ 166
- Colorplate VI Story-and-a-Half English Cottage—Color Sketch of Tiled Bath Room.
- The Lafayette ........................................................................ 168
- Colorplate VII A Brick House in a French Cottage Style—Color Sketch of a Bedroom.
- Two Delightful Small Homes ............................................. 169
- Colorplate VIII The Linwood, a Five-Room Colonial.
- The Lehigh, an English Type Home. ................................. 171
- Two Narrow Lot Designs .................................................... 172
- Colorplate IX The Lincoln, a Well Planned House Only 22 Feet Wide. The Liberty, an English Cottage of Four Rooms.
- The Laminar .......................................................................... 173
- Colorplate X A Spanish Design in Stucco—Color Sketch of High Ceilinged Living Room.
- The Lawndale ........................................................................ 175
- Colorplate XI A House of the Square Hip Roof Type—Color Sketch of Living Room.
- Spanish Exterior Details ..................................................... 176
- Colorplates XII and XIII Photographs of Several Mexican Openings.
- The Langley .......................................................................... 178
- Colorplate XIV An English Cottage of Stucco and Brick in the Tudor Style—Color Sketch of Dining Room.
- The Latham ........................................................................... 180
- Colorplate XV A Dutch Colonial Home—Color Sketch of Sun Porch Radio Room.
- The Leisher ............................................................................ 182
- Colorplate XVI A Well Designed Seven Room Home—Color Sketch of Colonial Stairway.
- Our Front Cover Home ....................................................... 184
- Photograph and Full Set of Building Plans Drawn to Eighth Scale of the Bedford Home Pictured in Full Color on Our Front Cover.
- Gypsum Concrete Demonstrated ........................................ 188
- Clay Modeling as Taught to Students of Architecture ......... 174
- Save the Surface Department ............................................. 176
- Principles of House Painting; Decay in the Lumber Yard; Importance of Arbutus; Special Paints Adapted to Special Surfaces.
- Sheet Metal Details ............................................................... 180
- Finishes Around Terra Cotta Cornices and Balconies.
- News of the Field ............................................................... 182
- Unobstructed Floor Space .................................................. 184
- How Dan Does It ............................................................... 192
- Instructions in Roof Framing ............................................. 196
- Dorman Framing .................................................................. 194
- What's New? ......................................................................... 200
- Motor Trucks and Trailers .................................................. 200
- Keeping the Trucks on the Road. Homes of Distinction at Moderate Cost .................................................. 210
- Advertisers' Index ............................................................... 297-299

Published on the first day of each month by American Builder and Carpenter Co.; Wm. A. Radford, President; Treasurer and Editor-in-Chief; Wm. A. Radford, Jr., Vice-President; E. L. Hatfield, Vice-President and General Manager; Bernard L. Johnson, Secretary; S. C. Kellenberger, Treasurer; Paul N. Rothe, Circulation Manager; Delbert W. Smith, E. B. Wolfson, C. R. W. Edgcumbe, L. H. Reich, O. H. Satter, Cecil W. Blashill, H. P. Sessions, Advertising Staff.


Entered as second-class matter July 1, 1905, at the post office at Chicago, Ill., under the Act of Congress on March 2, 1879.

**SUBSCRIPTION RATES**—One year, United States, Canada, Mexico and U. S. Possessions, $2.00; six months, Foreign Countries, $1.00; single copies, 50 cents. United States, Possessions, $2.00; six months, Foreign Countries, $1.00; single copies, 50 cents. Foreign countries, $4.00.

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

Be sure in writing to advertisers to say: "I saw your advertisement in the American Builder."

**ADVERTISING RATES**—Furnished on application. Advertising forms close on the 15th of the month preceding date of publication.

**MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS**
Vol. 39.

CONTENTS FOR SEPTEMBER, 1925

No. 6.

Copyright, 1925, by American Carpenter & Builder Co.

Around the Family Table ........................................... 119
Pay No Money to Strangers! ......................................... 121
Editorial Page ...................................................... 121
Building Against Earthquakes ....................................... 123
Lessons Learned from the Santa Barbara Disaster ......... 126
Prize Winning Basement Plans ..................................... 126

PORTFOLIO OF NOTABLE ARCHITECTURE ........... 129-132
The Stock Yards National Bank, Chicago's Replica of Independence Hall; A. Epstein, Structural Engineer. The Building was erected by Newberry, Smith & Trelfa, Chicago, Architects.

The Paramount Theater and Office Building, Times Square, New York City; C. W. and Geo. L. Rapp, Chicago, Architects.

The New York State Roosevelt Memorial, Winning Design by John Russell Pope, Architect. This Memorial will be built in connection with the American Museum of Natural History, New York City.

From Our Daily Foreign Mail .................................... 133

Construction Uses of Short Lengths of Lumber ............ 134

Better Plastering .................................................... 139

Landscape Architecture and the Home ......................... 142

The Fall-Blooming Flower Garden ................................. 143

Details of Home Building ........................................ 144

Plate No. 1 of a Series of 6.

Details of Standard Mill Construction ......................... 146

Homes in Colors ..................................................... 148

Mr. Radford Tells Why Homebuilding Benefits All ...... 148

BLUE RIBBON HOMES IN COLORS ............................... 149-164

The Lawton ............................................................ 149
A Dutch Colonial Home of Six Rooms with Garage to Match—Color Sketch of Dining Room.

The Lakeside .......................................................... 152
A Delightful English Cottage of Seven Rooms—Color Sketch of Convenient Kitchen.

The Lawton ............................................................ 153
A Straight Galley Colonial of Six Rooms—Color Sketch of Modern Bedrooms.

Photographs of Two Living Rooms ................................. 154
A New England Colonial and an Italian Style Living Room.

Living Rooms of Distinction ..................................... 155
A Living Room Library and a Living Room with Old English Beamed Ceiling.

The Lexington .......................................................... 156
Story-and-a-Half English Cottage—Color Sketch of Tiled Bath Room.

The Lafayette ......................................................... 158
A Brick House in a French Cottage Style—Color Sketch of a Bedroom.

Two Delightful Small Homes .................................... 159
The Lindwood, a Five-Room Colonial; The Lehigh, an English Type Home.

Two Narrow Lot Designs ........................................... 160
The Lincoln, a Well Planned House Only 22 Feet Wide; The Liberty, an English Cottage of Four Rooms.

The Lamar ............................................................... 161
A Spanish Design in Stucco—Color Sketch of High Ceilinged Southern Living Room.

The Lawndale .......................................................... 162
Color Plate XI A House of the Square Hip Roof Type—Color Sketch of Living Room.

Spanish Exterior Details .......................................... 165
Color Plates XII and XIII Photographs of Historic Architecture and Openings.

The Langley ............................................................. 166
An English Cottage of Stucco and Brick in the Tudor Style—Color Sketch of Dining Room.

The Latham ............................................................. 167
A Dutch Colonial Home—Color Sketch of Sun Porch Radio Room.

The Leisher ............................................................. 168
A Well Designed Seven-Room Home—Color Sketch of Colonial Stairway.

Our Front Cover Home ............................................... 169-170
Photograph and Full Set of Building Plans Drawn to Eight Inch Scale of the Beautiful Home Pictured in Full Colors on Our Front Cover.

Gypsum Concrete Demonstrated ................................. 170

Clay Modeling as Taught to Students of Architecture ... 174

Save the Surface Department .................................... 176

Principles of House Painting; Decay in the Lumber Yard; Importance of Arches; Special Paints Adapted to Special Surfaces.

Sheet Metal Details ................................................. 180

Finishing Around Terra Cotta Cornices and Balconies. .. 182

New by the Field .................................................... 182

New Red Seal Plan Will Assist Builders Sell Better Homes .................................................... 184

Unobstructed Floor Space ........................................ 186

How Dan Does It ..................................................... 188

Instructions in Roof Framing .................................... 190

Dormer Framing ..................................................... 192

What's New? ............................................................ 200

Motor Trucks and Trailers ....................................... 206

Keeping the Trucks on the Road.

Homes of Distinction at Moderate Cost ....................... 210

Advertisers' Index .................................................. 297-299

Entered as second-class matter July 1, 1905, at the post office at Chicago, Ill., under the Act of Congress on March 2, 1879.

SUBSCRIPTION RATES—One year, United States, Canada, Mexico and U. S. Possessions, $2.00; six months, $1.00; single copies, 35 cents. Foreign countries, $4.00.

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

Be sure in writing to advertisers to say: "I saw your advertisement in the American Builder."

ADVERTISING RATES—Furnished on application. Advertising forms close on the 15th of the month preceding date of publication.
Gurney Equipped

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

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

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

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

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

Gurney Refrigerator Company
Factory: Fond du Lac, Wisconsin

CHICAGO
308 North Michigan Ave.

NEW YORK
260 W. 36th Street
Zouri Indirect Key

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

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

Useful detail sheets and data book
This handbook has been written for architects, contractors and builders. It deals primarily with construction and gives plans and diagrams showing best approved methods of window and display space arrangement. The detail drawings will be welcomed by specification writers. A word from you will bring them—promptly.
features make installation easy and profitable. Zouri's key, particularly, which distributes pressure applied in setting to all points along the rigid copper moulding, is a safety device that greatly reduces chances of breakage.

Every finished installation, substantial and trim, is a lasting advertisement that will bring more business to the contractor.
Permanently Waterproofed Assures a Lasting Crack-Free Base

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

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

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

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

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

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

Manufactured by

U.S. MATERIALS COMPANY . . . . Chicago
AMERICAN MATERIALS COMPANY . . New York
ART STUCCO MATERIALS COMPANY . . Detroit
NORTHWEST MATERIALS COMPANY . . St. Paul
Nowhere else in all the world are builders offered such a variety of building materials

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

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

Sargent Hardware for buildings of every style and price

SARGENT & COMPANY, Hardware Manufacturers, 51 Water St., New Haven, Conn.
No carpenter who has ever used a Sargent Framing Square can be satisfied with any other

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

Sargent Squares are made from high-grade steel specially tested for trueness. They are accurately marked and dependable under every condition. They give lengths of common, hip, valley, jack and cripple rafters; also all top, bottom and side cuts.

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

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

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

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

Name...................................................

Address................................................
The Latest and Most Improved

FLOOR SANDER

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

This is a large promise to make for it. But any experienced operator will instantly see that the machine lives up to the promise in every particular. Consider these details—Weight only 230 lbs. with 150 lbs. on the drum when operating. No machine approaches this large percentage of useful weight. Consequently, it cuts much faster and is more easily operated.

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

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

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

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

Name
Address

Drum moved to right within 1" of wall

Drum moved to left within 3" of wall

This is the way the machine looks equipped with 8" drum
(12" drum optional equipment)
MACHINES

The World-Famous Master—

WOOD-WORKER

Here Is a Fact That Deserves Careful Thought

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

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

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

The No. 10, illustrated, handles 1" stock and saves over one-half the labor on inside finishing, making every cut necessary. It runs from a lamp socket—easily carried from room to room and can be quickly taken down in three parts and carried away in the tool box.

Whether you think you are in a position to buy immediately or not, we ask you for your own sake to fill out and mail the coupon below and learn all about the Master.

You will probably be surprised to see how easily you can buy one and pay for it out of the profits it makes without a cent of expense to you.

12 Machines in One—Runs on a Lamp Socket

MACHINES

AMERICAN BUILDER (Covers the Entire Building Field)
AMERICAN BUILDER (Covers the Entire Building Field)

Here's Proof of the Pudding.

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

When writing advertisers please mention the American Builder

Varnished 30 years ago
... Beautiful Today!

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

Read This—

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

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

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

Mr. Oblinger's experience with Berry Brothers' varnishes is neither unusual nor exceptional. There are thousands of home, apartment and building owners in all parts of the world who pay the price for Berry quality in order to save the tremendous accumulative expense of frequent revarnishing.

Here Is Another Example—

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

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

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

BERRY BROTHERS, Inc.

Varnishes Enamels Stains

Detroit, Mich.

Walkerville, Ont.
Two Smashing Bargains that Should Attract Every Builder!

"White" Special "A" Built-in Ironing Board

Positively the BIGGEST BARGAIN in Built-in Ironing Boards to be found.

An extremely well made Built-In Ironing Board Cabinet complete with removable ironing board, sleeve board, broom holder on door and sufficient space at bottom of cabinet for iron. Complete with hardware and ready to apply finish. Very strong and substantial. To fit between studdings 16 inch on center. Tose on baseboard. Height 61 1/2 inches, 14 inches wide and 4 inches deep. Overall dimensions, 63 1/2 in. high by 16 in. wide.

"White" Special "A" Built-in Ironing Board F.O.B. Chicago, $7.00

Less than 50, Each $7.50

"White" Special "A" Medicine Cabinet

Highest Quality Enamelled Steel

Large Mirror

An attractive all steel Medicine Cabinet, finished with high grade white enamel. Equipped with three removable glass shelves. The shelves have a bulbed edge which strengthens them and prevents chipping. Open comb and brush shelf at bottom. A large, clear vision mirror, 11 1/4 inches square is firmly set in the door. Durable friction latch with white china knob. Strong hinges prevent door sagging. The entire cabinet is extremely well constructed of high grade materials. Overall dimensions are 17 3/4 inches wide by 22 1/2 inches high by 4 3/4 inches deep. Built to fit opening 13 3/4 inches wide by 19 3/4 inches high. Fits between studdings 16 inches on center.

"White" Special "A" Medicine Cabinet F.O.B. Chicago, $7.00

Less than 25, Each $7.50

The "White" Door Bed Company

130 North Wells Street ~ Chicago, Ill.

Sales Agents in the Principal Cities

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

Please Ship [C. O. D. [Net 30 Days]

Name

Address

ORDER NOW WITH THIS COUPON

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Armstrong's Linoleum
for Every Floor in the House

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

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

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

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

Mr. Hillen's unique project has met with astounding success. In the few weeks since it was thrown open for inspection, "Casa Romero" has been seen by over 50,000 persons interested in new homes. The first Sunday, 10,000 people visited the model house. More than 12,000 saw it the second Sunday.

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

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

ARMSTRONG CORK COMPANY, Linoleum Division, LANCASTER, PA.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Walls of Wood

Supply uncommon richness at commonplace cost

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

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

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

And their maintenance cost is next to nothing—because their natural beauty, beneath a coat of wax or varnish—lasts with minimum refinishing cost for years.

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

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

Algoma Panel Company, Algoma, Wis.
Stock Panel Warehouse: 1524 So. Western Ave., Chicago Telephone Canal 0485
Bruce Oak Flooring
THE BEST OAK FLOORING

Add to Rental or Selling Value

Easy to Keep Clean

No Cracks to Catch Dirt

Fast Snugly, Neither too Tight Nor Loose

A Bruce Floor is Sanitary

Bruce Oak Flooring is Readily Available

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

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

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

Variety within the Cost Estimate

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

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

Stocks are readily available, anywhere in the United States.

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

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

Bruce Oak Flooring, and Bruce 'CEDARINE', aromatic Tennessee cedar lining for clothes closets, are sold nationally through lumber dealers everywhere.

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

Stocks are readily available, anywhere in the United States.

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

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

Oak Floors for Health

Interior views of a Bruce Floored Home

LARGEST MAKERS OF OAK FLOORING IN THE WORLD
Price

Softwood
about one
dollar
more than
a one
panel
softwood
door

Price

Hardwood
no
more
than a
one
panel
hardwood
door
Paint gives the wide range of color possibilities that the artist desires and permits him to give full expression to his art. Paine Miracle Doors lend themselves to every decorative scheme.

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

Miracle Doors cost very little more than ordinary doors.
The very cheapest woods may adapt themselves to the
common-stained and varnished finishes. An
atmosphere of taste and exclusiveness
can be assured by painting
good woodwork using
color schemes that
harmonize.

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

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

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

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

The Miracle Door is made in all woods.

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

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

A 66-page catalog showing representative installations of Miracle Doors and giving numerous complete ideas in color for finishing Miracle Doors, together with the floors, walls and woodwork in connection, will be mailed you free upon request.

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

**An Old Name Wins New Fame**

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

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

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

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

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

**SEND THIS COUPON**

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

Gentlemen:
Kindly send us without obligation on our part descriptive literature and samples of Chatfield’s Para-Hex Strip Shingles. Also explain to us your Quantity Discount and Co-operative Advertising Agreement.

Name ____________________________
Address __________________________
City __________________ State ______
Dear Sir:

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

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

We are,

Yours very truly

[Signature]

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

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

Ideal Boilers and American Radiators for Every Heating Need

When writing advertisers please mention the American Builder
Ry "Belle Porte" is but one example of attractive designs available in Laminex—the trouble-proof door. This Laminex door, Belle Porte, is a sub-frame design with square joints—fully dovetailed. Stiles, rails and panel are Laminex construction. Made both in the all-flat grain or with vertical grain stiles and rails. Also made in Woco solid stile and rail.

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

Laminex is the door you see tested in water tanks at the leading building shows. It is a widely-advertised door—a door that within a year of the time it was announced has won its way on merit with architects and builders and is now found in prominent homes, apartments and public buildings.

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

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

An entrance of rare beauty —Laminex "Belle Porte"

LAMINEX DOORS
WILL NOT SHRINK, SWELL OR WARP

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Illustration shows the S-L Jaeger on cushioned wheels. Can be equipped with steel wheels or pneumatic tires as desired. Note the power loader and Tip-Over Accurate Measure Water Tank.

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

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

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

Our Distributors Carry a Complete Stock of Jaegers

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

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

The Jaeger Machine Company
318 Dublin Road
Columbus, Ohio
A Roof That Sells the House

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

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

Sheet steel tile appeal to the practical mind of the builder. They are light in weight and require no special sub-structure to carry them. Their form provides a dead-air space above the sheathing that protects alike against summer's heat and winter's cold. Sparks are rendered harmless by the sturdy steel surface. Even lightning can not harm building or occupants if this roof is properly grounded. It will pay every builder to study the multitude of uses and economy of sheet steel in building construction and furnishing—walls for bathroom and kitchen, space-saving closets, durable, cleanly kitchen equipment. These and many similar uses are covered in our interesting little booklet, "THE SERVICE OF SHEET STEEL TO THE PUBLIC." A copy will be mailed on request.

A correctly installed warm air heating system not only provides ample heat for any room as required, but also supplies the air with the proper amount of moisture. The architect's work of specification has been greatly simplified by the Illinois University's research and the National Standard Installation Code.
 Colonial Hall, New York, now nearing completion equipped exclusively with Murphy In-A-Dor Beds.

Door closed with perfect concealment. No indication of an enclosed bed.

Door open—showing position of bed when not in use.

Bed half way out—a full sized bed through the ordinary door.

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

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

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

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

Let Our Service Department Help You—No Obligation

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

The MURPHY IN-A-DOR BED

The MURPHY DOOR BED COMPANY

Offices in All Principal Cities

<table>
<thead>
<tr>
<th>City</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City</td>
<td>19 W. 44th St.</td>
</tr>
<tr>
<td>Atlanta, Ga.</td>
<td>301 Arcade Bldg.</td>
</tr>
<tr>
<td>Seattle, Wash.</td>
<td>Terminal Silver Bldg.</td>
</tr>
<tr>
<td>San Francisco, Calif.</td>
<td>Crocker Bldg.</td>
</tr>
<tr>
<td>Los Angeles, Calif.</td>
<td>1087 S. Main St.</td>
</tr>
<tr>
<td>Denver, Colo.</td>
<td>1234 Blake St.</td>
</tr>
<tr>
<td>Oklahoma, Okla.</td>
<td>303 O'Connor Bldg.</td>
</tr>
<tr>
<td>Montreal, Can.</td>
<td>153 O'Connor Bldg.</td>
</tr>
<tr>
<td>St. Petersburg, Fla.</td>
<td>223 Second Ave.</td>
</tr>
<tr>
<td>Miami, Fl.</td>
<td>224 Columbus Bldg.</td>
</tr>
</tbody>
</table>
The Freese-Rohde Department Store, Sioux Falls, S. D., Architects—Perkins & McWayne, Sioux Falls; General Contractor—Henry Carlson Co., Brasco Copper Store Front furnished and installed by Sioux Falls Paint & Glass Co.

One of the Largest Store Fronts in South Dakota

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

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

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

BRASCO MANUFACTURING CO.
5029 South Wabash Avenue

Mail this Coupon for the money-making Brasco story

BRASCO MFG. CO., 5029 South Wabash Avenue, Chicago.
Send me your free information on profitable store front work.

Name
Address
Qualifying Leadership

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

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

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

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

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

Le Roi Company
Milwaukee - Wisconsin

Le Roi Engines
for dependable power!

When writing advertisers please mention the American Builder
The Finest Residences Are Now Painted The SPRACO Way

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

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

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

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

SPRAY PAINTING AND FINISHING EQUIPMENT SALES COMPANY
60 High Street :: :: :: Boston, Mass.
Twenty-eight RED WHEELS

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

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

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

The Lorain Oven Heat Regulator is the original oven heat regulator—the only oven heat regulator manufactured and guaranteed by the same company that makes the stoves of which it is a part.

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

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

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

Largest Makers of Gas Ranges in the World

LORAIN OVEN HEAT REGULATOR

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Win extra remodeling jobs at good profit

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

WEATHERBEST STAINED SHINGLE CO., Inc.
143 Main St., North Tonawanda, N. Y.
Western Plant, Minnesota Transfer, Minn.
Today there are no buildings without floors and every one of them must be surfaced. Hand scraping is slow and hard work and yields only a very small profit compared to when the work is done with the FREE-O-DUST Super Surfacer.

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

The only machine on the market that picks up every particle of dust on the forward as well as on the backward movement. This is of particular advantage when resurfacing old floors in buildings that are occupied and protects the health of the operator by preventing him from inhaling the poisonous substances that often accumulate in wood flooring.

Can be operated right up to the baseboard and has many other exclusive features. It does not obligate you to write for details about our FIVE DAYS’ FREE TRIAL offer and free copy of our booklet "A DAY’S WORK." Write today. This booklet gives facts, figures and full information on how you can do "A WEEK’S WORK IN ONE DAY."

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

Manufacturers of floor surfacing machines for 20 years

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Go after the profits in re-roofing business with this new beautiful Golden Brown Monotype roofing.

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

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

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

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

SAMPLE REQUEST
THE LEHON COMPANY, Chicago
Mail me at once sample of Mule-Hide Golden Brown Monotype shingle design roofing, and name of nearest Sales Agency.

Name
Address
PREMIER

**Automatic Gas Water Heater**

*Shown at right*

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

Also with extra heavy copper tank, at factory $235.

In Canada, add duty.

Instant Hot Water

**MARVEL Gas Water Heater**

Not automatic, not insulated. No. 32, fit average homes. At factory $32.

In Canada, add duty.

**KEYSTONE (Premier Junior) Gas Water Heater**

Automatic, insulated. No. 2, suitable for average homes. At the factory $90.

In Canada, add duty.

Home buyers know the worth of Crane hot water

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

Ready acceptance is thus assured for any of the three dependable water heaters illustrated here. The *Premier* runs itself, and stores hot water in a big insulated tank for instant use. The *Keystone* is also automatic and insulated. The *Marvel* supplies an abundance of hot water soon after lighting.

All three are sold by responsible plumbing contractors everywhere in a full range of sizes. On display at Crane Exhibit Rooms. Write for construction data for your files.
we did not hesitate to decide on another

Kawneer

Build Repeat Business

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

Kawneer
STORE FRONTS

yours in your city. Merchants everywhere know KAWNEER.

Send today for Contractors’ Design Book.
Utilize Kawneer Advertising to Help You Secure More Business

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

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

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

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

See Kawneer Store Front illustrated on preceding page
If your hardware man hasn't one of these books, send his name along. You will be able to work along better with one of these books at each end of the phone.

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

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

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

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

* * * *

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

The coupon will bring the book.

McKinney MFG. COMPANY, Pittsburgh, Penna.

McKinney Mfg. Co.
Pittsburgh, Pa.
Please send the Book on Garage Hardware to
Name
Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Looking Ahead on Space Requirements

R-W Standard of Craftsmanship

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

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

Richards-Wilcox Mfg. Co.

AURORA, ILLINOIS, U.S.A.

New York Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans Chicago Minneapolis Kansas City Los Angeles San Francisco Omaha Seattle Detroit

Montreal • RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. • Winnipeg

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Winthrop shadow lines give real beauty to a roof

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

Winthrop Tapered Asphalt Shingles

The Taper of the Winthrop is the strongest quality feature ever put into a slate-surfaced asphalt shingle. The thick butts are built up of extra coats of everlasting asphalt on both sides of the heavy felt core. This taper provides the greatest thickness where exposure to weather comes. It casts the shadow lines that made the old time wooden shingles popular. The thick butts of Winthrops lie close and snug, proof against rain and wind and snow. They do not curl, crack, rot, split nor rust.

Non-fading crushed slate anchored into the everlasting asphalt gives to Winthrops their beautiful and lasting surfaces. Laid over old shingle roofs, Winthrops have no equal as a re-roofing shingle. Remember this when you figure on your fall re-roofing jobs.

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

Beckman-Dawson Roofing Company
832 F. C. Austin Bldg., 111 W. Jackson Blvd., Chicago, Ill.
Also manufactured by
Lockport Paper Co., Lockport, New York

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
RODDIS

"Fourteen-Seventy-Five"

FLUSH DOORS

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

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

of Real African Mahogany

in all Standard Sizes

of Famous Roddis Construction

shipped Instantly from Stock

that you can sell

for $14.75 each

and Guaranteed Forever!

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

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

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

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

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

Roddis Lumber & Veneer Co., Marshfield, Wis.

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

Mail This Coupon NOW!

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

Roddis Lumber & Veneer Co., Marshfield, Wis.

Tell me how I can use the “Fourteen-Seventy-Five” Flush Door to my profit.

Check which:

[ ] ARCHITECT

[ ] CONTRACTOR

[ ] SUPPLY DEALER

Name ____________________________

Company Name ____________________

City ____________________________

State ____________________________

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Herringbone walls and ceilings resist the ravages of time

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

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

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

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

Other GF Materials:
- **Self-Sentering**—A combined form, lath and reinforcement for concrete floors and roofs.
- **Trussil**—A reinforcement for solid partitions.
- **GF Expanded Metal**—A concrete reinforcement.
- **GF Steel Tile**—For concrete floors.
- **GF Steel Lumber**—Used in place of wood joints and studs.
- **GF Steel Channels**—For fireproof partitions and ceilings.
- **GF Peds**—Spot grounds for attaching trim to concrete and plaster.
- **GF Duplex Steel Bridging**—For wood joint floors.
- **GF Waterproofings**—For concrete and masonry.
Beautiful columns on a building are the first feature to catch the eye and the one longest remembered. How important then that they should be made of enduring material that will not split, rot and open up at the joints and thus mar the entire structure.

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

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

**Contractors—here is Beauty that Lasts a Lifetime**

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

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

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

**THE UNION METAL MANUFACTURING CO.**
**CANTON, OHIO**

**UNION METAL COLUMNS**

**Design 240 Union Metal Columns on a suburban residence at Drexel Hill, Pennsylvania. Thousands of this design have been sold to contractors for remodeling and replacement purposes.**
HERE is an Aristocracy of worth—of solid, tangible values—far more significant than the hollow aristocracy of wealth or of antecedents.

Of such an Aristocracy is Knickerbocker.

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

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

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

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

The Knickerbocker Company, 525 Liberty St., Jackson, Michigan
This charming small house (A. B. LeBoutillier, Architect) shows the beautiful effect of a blended red roof in Cabot’s Stained Shingles, Wall Shingles in Old Virginia White and Trimmings in Double White.

Cabot’s
Genuine Creosote
Stained Shingles

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

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

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

Genuine Wood-Preserving Creosote: Cabot’s Stains are made of Cabot’s genuine refined Creosote, which thoroughly preserves the wood. “Creosote is the best wood preservative known.” You don’t have to accept Poor Shingles or Poor Stains. Cabot’s Qualities are guaranteed—and they cost no more.

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

Samuel Cabot, Inc., Manfg. Chemists
135 Milk St., Boston, Mass.
343 Madison Ave., New York
5000 Bloomingdale Ave., Chicago

Cut out here
Please send Stained samples and catalog as above.
Name:
Street:
Town and State:

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
It is generally recognized by heating specialists that Capitol Smokeless Boilers represent the highest standard of efficiency in the world. No matter how severe the local smoke ordinance may be, a Capitol Smokeless will operate well within its requirements.

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

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

UNITED STATES RADIATOR CORPORATION
General Offices, Detroit, Michigan

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

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

SKEPTICS—READ THIS
The Diamond Metal Weather Strip Co.
Columbus, Ohio

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

The doors and windows of the building are all fitted with the weather strip which you shipped to Mr. Williamson last summer, and I am very glad to have an opportunity to write you to say that your product has performed satisfactorily.

The thermometer in Fairbanks sometimes drops down as low as 60 and 70 below, and we have had great difficulty in keeping our offices and banking room warm on account of the cold coming in through the windows, and the extreme heat on the inside and the cold on the outside has a tendency to break the windows similarly around the windows and doors, but your weather strip has corrected this and, no matter how cold it gets, we are now very comfortable. You're very truly,

Signed—R. C. WWOOD, Mer.
Res. Martin De Garieiz
First National Bank
Fairbanks, Alaska

What Better Proof Do You Want!

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

OUR PROPOSITION IS CLEAN, FAIR AND REASONABLE.

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

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

WRITE US TO-DAY

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

THE DIAMOND METAL WEATHER STRIP CO., Columbus, Ohio

Send full information in regards to your product. Am interested

In [ ] Having a Building Equipped [ ] Securing an Agency [ ] As a Territorial Distributor [ ] Address of Local or Nearest Agency

Name: ____________________________ Street Address: ____________________________ City: ____________________________ State: ____________________________

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Contractors who consider capacity and price—here's a real buy.

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

- Kwik-Mix 3½ Trailer on steel wheels. $190.00
- Kwik-Mix 3½ Loader on steel wheels. $330.00
- Kwik-Mix 5 Loader (one-bag size) on steel wheels. $475.00

Prices net cash f. o. b. factory. Slight additional charge for rubber tired wheels.

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

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

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

Other mixers discharge large stones first.

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

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

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

Write for special bulletins.

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

Casement and Transom Hardware is all right

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

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

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

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

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

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

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

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

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

Our favorite sources of supply for builders’ hardware in

are


Firm Name

Street and Number

City

State

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
The contractor who uses Lehigh—advertised by these two pages in color

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

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

"A point to remember in choosing a contractor:

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

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

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

LEHIGH PORTLAND CEMENT COMPANY
..yet we have improved it

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

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

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

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

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

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

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

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

SHEETROCK
The FIREPROOF WALLBOARD

Clip and mail this coupon today!

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

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

Name__________________________ Address__________________________

Sheetrock comes in standard sizes: ½ inch thick, 32 or 48 inches wide and 6 to 10 feet long

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
The Hess Welded Steel Furnace eliminates the defects of the old style Cast iron "Pot" furnace.

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

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

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

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

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

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

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

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

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

HESS WARMING & VENTILATING COMPANY
1220-L South Western Avenue - Chicago

BRANCHES AT: BROOKLYN DETROIT CINCINNATI
MILWAUKEE MINNEAPOLIS
The Entire Building Field Is YOUR Market
When you become a manufacturer of
DUNTILE
The Perfected All-Purpose Concrete Building Unit

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

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

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

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

Name
St. Address
City
State

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

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

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

THE WOODVILLE LIME PRODUCTS CO.
Toledo, Ohio

White Enamel White Lily
Gold Medal
Finishing Hydrated Lime

IT'S QUALITY FROM STONE TO FINISH
Pondosa Pine
can be used 'most anywhere

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

Pondosa Pine
The Pick o'the Pines

Write for this booklet
Variety in Shape as well as Shade

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

In addition to the four standard patterns of IMPERIAL Roofing Tiles here illustrated, there is available an almost limitless variety of shapes, shades and textures that lend themselves to distinctive roofing effects.
Announcing Two New BESSLER Disappearing Stairways Greatly Improved in Every Way

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

IMPORTANT NEW FEATURES

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

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

Prices have been so much reduced as to make Besslers indispensable

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

BUILDERS—DEALERS

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

THE BESSLER MOVABLE STAIRWAY CO.

1901 East Market Street
Akron, Ohio
Make Houses Into Homes with the Holland Heating Service

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

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

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

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

HOLLAND FURNACE COMPANY

General Offices:
HOLLAND, MICHIGAN

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

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

The World's Largest Installers Of Furnaces

Holland Furnaces Make Warm Friends

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
A client pictures his future home from the picture, blue prints and descriptions of his contractor. These things are tangible, he can see them, check them and approve them.

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

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

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

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

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

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

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

Why not ask us to?
Why Keep On Paying This Tax?

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

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

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

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

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

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

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

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

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

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta   Columbus   Indianapolis   Minneapolis   Pittsburgh   San Francisco
Birmingham   Dallas   Jackson, C. M.   Nashville   Philadelphia   Seattle
Boston   Denver   Kansas City   New Orleans   Pittsburgh, Pa.   St. Louis
Charlotte, N.C.   Des Moines   Los Angeles   New York   Portland, Ore.   Vancouver, B.C.
Chicago   Detroit   Milwaukee   Oklahoma City   Salt Lake City   Washington, D.C.
Retail price only $350.00
Completely installed, ready to operate

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

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

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

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

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

Write for complete information
SILENT AUTOMATIC CORPORATION, 255 Meldrum Avenue, Detroit, Michigan
The ALPHA dealer of your community has a lot of helpful information on cement improvements.

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

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

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

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

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

See the ALPHA Dealer and get these good Suggestions Free
use ALPHA Cement
California Pines are ideal for all kinds of interior finished woodwork. They dress to velvety smoothness of surface. First coats of paint are easily absorbed, forming a lasting foundation for finishing coats. The light color is easy to "hide," thus effecting an economy in cost of enameling.

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

You will find that carpenters like to work with these soft pines because of the ease and rapidity of cutting, and the accurate workmanship possible. The economy of California Pine interior woodwork lies in the lessening of labor for installation and the elimination of wasting material in cutting.

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

California White and Sugar Pine Manufacturers Association
656 Call Building · San Francisco

Also producers of
CALIFORNIA WHITE FIR · CALIFORNIA DOUGLAS FIR · CALIFORNIA INCENSE CEDAR

When writing advertisers please mention THE AMERICAN BUILDER
How else can you obtain wall beauty that is also wallstrength?

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

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

**Styles for every room in the house**

- **Plain and Pastel** Flat Finish: tints that can be hung as they come, or stencilled, brocaded or tiffany blended
- **Decorative** Flat Finish: conventional and foliate, mottles, and tapestry, grass-cloth, leather and fabric effects.
- **Brocade and Metallic Finishes** in embossed effects for panelled treatments and trimmings.
- **Enamel Finish** plain colors, tile effects and decorative patterns, for kitchens, bathrooms, etc.

**The Standard Textile Products Co.**
320 Broadway, New York
Dept K.

Upon request our Architects' Service Bureau can furnish valuable information and data drawn from a wide experience. Also ask for any of the literature shown on this page. It will tell you just what you want to know, quickly.
Announcing The

CINDER CONCRETE CORPORATION

Licensing Agent Under Straub and Bo Patents

120 West 42nd Street, New York

The Cinder Concrete Corporation is organized for the purpose of further developing the Cinder Products Industry and through scientific research, engineering service and educational work maintaining the high standards of Cinder Concrete Products.

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

The main office is located at 120 West 42nd Street, New York City, and branch offices are maintained at 416 Union Trust Building, Rochester, N. Y., and at 906 Park Building, Pittsburgh, Pa.

We feel justified in believing that this new arrangement will be of great benefit to the industry, and we trust that the good will we have enjoyed in the past will follow the new corporation in the future.

CROZIER-STRAUB, Inc.

120 W. 42nd Street

New York City
Cuts any kind of lumber—and, say!—how it cuts costs!

THIS American Portable Variety Woodworker is letting hundreds of contractors figure low on jobs. And clear up bigger profits, too! No slow hand sawing for them. No waiting on the nearest shop for special jobs. Instead, they have a complete woodworking plant right at hand. Four men can work at it at once.

This one machine may be used as a rip, cutoff, or 20-inch scroll saw, as a dado, gaining, grooving, rabbeting, tenoning, or boring machine, as a jointer or planer, a matcher, molder, or sander, and as a hollow chisel mortiser.

Our Bulletin No. 80 describes in detail this and other time-saving “American” machines. Write for it.

American Saw Mill Machinery Company

60 Main Street, Hackettstown, N. J.

1360 Hudson Terminal Bldg.
New York City

Vertical Hollow Chisel Mortiser No. 855
The Best Equipped Contractor Gets the Business!

When you go buying shoes, clothes, groceries—anything required in your daily living—you like to go to the store that has the best equipment—namely the best-looking windows, the best arranged counters and display cases.

Why doesn’t the same rule work with the contractor and builder?—It does!

The Contractor that uses modern scaffolding equipment just naturally draws the business his way. Architects and owners are impressed by the neat, workman-like appearance of his jobs. They classify the contractor with the up-to-date merchants, and like to do business with him.

That is why you need Trouble Saver Equipment.

Besides building a reputation for you, Trouble Savers save you real time and money on scaffolding erection, dismantling and material costs.

The coupon makes it easy for you to get complete information. Use it today!

The Steel Scaffolding Co.
Evansville, Indiana

Building Supply Dealers will find Trouble Savers a profitable line to handle. Use the coupon for full information.
HOME-BUILDERS and buyers are willing to pay a little more at first, if necessary, to avoid the expense and bother soon imposed by a "cheap", unknown coal window—or frame and sash used as such. That's why the Majestic Coal Window far outnumbers all other installations combined! It protects the house permanently. And it is guaranteed break-proof and rust-resisting—made of Certified Malleable Iron, Keystone Copper Steel, with glass or pressed steel door electro-galvanized against rust. Years of national advertising—and perfect performance—have made the Majestic the accepted standard of coal window quality and value everywhere. Include it in every house you build. It will pay you.

Majestic Coal Windows come in a variety of styles and sizes with or without hopper, and with glass or pressed steel door. Write for catalog and dealer's name.
Success Comes
TO THE
MAN WHO
KNOWS HOW
FADFORD'S CYCLOPEDIA
OF CONSTRUCTION
IS THE KEY TO SUCCESS
IN THE BUILDING BUSINESS
READ THE NEXT PAGES
The best tool in any workman's kit is books—practical books that tell how to do work in the easiest, the best and latest ways; books that tell you all about each and every feature of your work to the smallest detail; books that keep you in touch with the biggest and smallest details of building construction. This is an opportunity of a lifetime to get a set of books that will tell you everything about building construction in all its branches. Read our guarantee below.

My Personal Guarantee

If you do not find the Radford Cyclopaedia of Construction just as advertised and entirely satisfactory, or if for any reason whatsoever you do not wish to keep it after buying it, you are free to return it to us at any time within five days, and we shall send you a full refund of the purchase price. There will be no risk whatever if you do not find it to your satisfaction, because we desire to have every one of our books put out to remain only in the hands of appreciative and enterprising purchasers, as this price is made with the sole purpose of placing a set in your town to which we may refer later, and with the understanding that you write us your opinion of it to help secure other business at our regular price.

Don't hesitate a moment to hold me to this guarantee and notify me within the five days limits that you want every set of books we put out to remain only in the hands of appreciative and enterprising purchasers, as this price is made with the sole purpose of placing a set in your town to which we may refer later, and with the understanding that you write us your opinion of it to help secure other business at our regular price.

Partial Table of Contents—Radford's Cyclopaedia of Carpentry, Building Construction

12 Volumes Sent by Prepaid

Exact Photographic Reproduction—Bound in Morocco Grain Fabric

THE ELEVATION.

CONSTRUCTION OF STAIRS.

BUILDING CONSTRUCTION.

MANUFACTURE OF STRUCTURAL MEMBERS.

THE SQUARE IN STAIRS BUILDING.
Strings and Finishes at Top and Bottom. Treads and Risers. Balusters and Brackets. Square of the Newel. Combination SQUARES. Universal SQUARE. Bevel Try-Squares. Tappen's Framing Tool. KEY TO THE SQUARE.
WHAT YOU GET: Twelve Great, Big, Massive Volumes, over 5,000 pages, 3,200 specially drawn illustrations; charts, diagrams, working drawings, besides hundreds of full-page half-tone plates and zinc etchings; Three Plan Books of over 300 plans of buildings; one complete set of working blue prints and complete typewritten specifications—your own choice; and a full year's subscription to that great, big paper, "The American Builder."

How to Get Them

All you have to do is to write your name and address plainly on the coupon at the bottom of the next page, pin a dollar bill to it and mail it to us. We trust you as a member of the building trade and send you the entire set of books immediately. We prepay all express charges and thus it does not cost you one penny for examination. When you get the books they are yours for five days to examine them just as leisurely and as carefully as you please. You have the privilege of calling in your family, your friends, your associates to look them over and help you to make a decision. After you have had the chance to go through them page by page, if you should decide that you do not want to keep the books, all that you have to do is drop us a postal telling us so. We will immediately send back to you the payment of $1.00 which you sent us with the order blank. We do this without any argument, without any red tape and without any haggling whatever. Furthermore, we will remove the set of books without cost to you at once. Therefore, you are nothing out on the deal, you have not spent a cent, you have lost nothing whatever.

Examine Books at Our Expense

All you have to do is to write your name and address plainly on the coupon at the bottom of the next page, pin a dollar bill to it and mail it to us. We trust you as a member of the building trade and send you the entire set of books immediately. We prepay all express charges and thus it does not cost you one penny for examination. When you get the books they are yours for five days to examine them just as leisurely and as carefully as you please. You have the privilege of calling in your family, your friends, your associates to look them over and help you to make a decision. After you have had the chance to go through them page by page, if you should decide that you do not want to keep the books, all that you have to do is drop us a postal telling us so. We will immediately send back to you the payment of $1.00 which you sent us with the order blank. We do this without any argument, without any red tape and without any haggling whatever. Furthermore, we will remove the set of books without cost to you at once. Therefore, you are nothing out on the deal, you have not spent a cent, you have lost nothing whatever.

MASONRY CONSTRUCTION.


REINFORCED CONCRETE BRIDGES.


PLAIN CONCRETE CONSTRUCTION.

Wood Forms. Metal Forms. Construction of Forms. Collapsible Metal Forms. CONCRETE HOUSES.


<table>
<thead>
<tr>
<th>FEATURES</th>
<th>PERFORMANCE</th>
<th>BONUSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight</td>
<td>Fire-resistant</td>
<td>Free Sinking Permit</td>
</tr>
<tr>
<td>High Strength</td>
<td>Aesthetic Appeal</td>
<td>Free Foundation Plans</td>
</tr>
<tr>
<td>Sound Insulation</td>
<td>Weather Resistance</td>
<td>Free Roofing System</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>Maintenance-Free</td>
<td>Free Decking Solution</td>
</tr>
</tbody>
</table>
THERE were no Cyclopedia such as this at so low a cost, and so easy to get. He allowed other men—the men who had studied and knew how—to pass him by. They left him standing on the threshold of success. But they left him behind. He heeded not the beckonings of opportunity. He is THE MAN WHO STOOD STILL.

Don't Be The Man Who Stood Still—Be A Successful Contractor A Big Architect A Master Builder

"If I only had this set of books twenty or thirty years ago, they might have changed my whole life. The knowledge in the big Cyclopedia would have enabled me to increase my earning power, to take big work, paying big money and possibly have helped me to make a fortune in the building business."

SPECIAL FREE PREMIUMS IF YOU ORDER AT ONCE

If we receive your order at once, we will send with this Cyclopedia one year's subscription (12 numbers) to the American Builder, the world's greatest building paper. We will send free of all extra cost, one complete set of blue printed working plans and typewritten specifications of any of the houses illustrated in three Books of Plans, which we also send to you free of cost, so that you may make your selection. These plans and specifications are as complete as those charged $50.00 to $75.00 for by many architects. These plans will be very valuable to contractors, builders and draughtsmen. The only reason we can offer to do this is because we have the largest architectural establishment of its kind in the world, and are able to produce these complete blue printed working plans and specifications at the very lowest possible price, and to the purchasers of this big Cyclopedia we are willing to give the benefit. Without American Builder $1.00 less.

We make this liberal offer because we want you to have our Cyclopedia, and we believe by having it in your hands we will have a greater opportunity of disposing of others in your locality, and it is with the distinct understanding that if it is entirely satisfactory, you will write us a letter and assist us in making other sales.

Our special price to you for advertising purposes is only $37.50, and our liberal terms are only One Dollar down and $3.00 per month until the amount is paid. We give you five days to look the books over and see if they are entirely satisfactory. If you conclude not to keep them, we will refund your money and pay the express charges both ways. Order today. Fit yourself at once to increase your earning power.

The Radford Architectural Co. 1827 Prairie Ave., Chicago, Ill., U. S. A.

West of Rocky Mountains and Canada, $3.00 with this order. Full amount must accompany all Foreign orders.
We want a roof that guarantees lasting protection and attractive appearance to our houses, states Parish & Byrd, Realtors, Inc., the well known Birmingham concern just completing Cliff Court, and so we selected Carey Asfaltslate Shingles.

"First of all, we selected this shingle because it is recognized as 'The Shingle that Never Curls'. We know it is a roof that will live with the houses, and give our patrons many years of satisfaction.

"The soft natural shades of the slate surface appealed to us because they blend with the tones of the houses themselves and with the surroundings. This shingle makes a roof that is artistic yet inconspicuous.

"In the Carey Asfaltslate Shingle we feel we have a thoroughly satisfactory roof, one that is in keeping with the high quality of materials and equipment that is found in the houses. Steel casement windows with plate glass panes, Carey Asfaltslate Shingles, and other such features are found throughout these nine wonderful little homes in Cliff Court."

The Philip Carey Company
510-530 Wayne Ave. - Lockland, Cincinnati, Ohio
heat-proof vermin-proof wind-proof

Resists every draft

Layers of High-grade Asphaltum

Layers of Java rope sisal fibres laid longitudinally and latitudinally

Layers of tough No. 1 Kraft

6 PLY

REENFORCED BUILDING PAPER

A TWENTIETH CENTURY PRODUCT

American Reenforced Paper Company
ATTLEBORO, MASS.
Lasts for Years

A house equipped with Home Comfort Weatherstrip is protected for many years from cold air, dust and rain coming in around the doors and windows. The materials used in making Home Comfort are specially tested so as to give long service. The tacking lap is 4-ply, double sewed in order to give the strip necessary rigidity to provide a closed contact at all times. When purchasing Home Comfort Weatherstrip, demand the genuine. The name is embossed on the tacking lap. Imitations cause dissatisfaction.

Get Home Comfort Weatherstrip From Your Hardware or Lumber Dealer

Get Home Comfort Weatherstrip from your hardware or lumber dealer. He will cut off the exact amount you need, as it comes in continuous lengths on 500 foot reels. No waste in left over ends. No deterioration. It is moth and vermin proof. Enamelled rustproof tacks come with Home Comfort Weatherstrip. Each package contains enough tacks to apply 20 feet which is the amount usually required for the average window or door. If your dealer does not handle Home Comfort Weatherstrip, order direct from us or our nearest distributor, mentioning your dealer's name.

Of Interest to Dealers

With your initial order of one or more 500 foot reels you receive a handsome display stand that is a splendid silent salesman. Pockets on the back of stand contain packaged tacks and circulars. Each package contains enough tacks to apply 20 feet of strip (the usual amount for the average window or door). Home Comfort Weatherstrip retails for 10c per foot for the maroon, including enamelled rustproof tacks to match; the white retails at 13c per foot. Order today from your nearest jobber. If he cannot supply you order direct, stating your jobber's name.

E. J. Wirfs Organization, 116 South 17th St., St. Louis, Mo.
Sterling barrows are strong in every part. All parts are interchangeable. They balance well and wheel easy.

In reply to your inquiry, we have always used Sterling wheelbarrows as our standard equipment. We have found that the interchangeability of the parts have kept the cost of this equipment down to a minimum.

Yours truly,

PAUL M. SCHROTER COMPANY

Paul M. Schroter

Direct factory stocks in important centers. Sold by leading equipment dealers everywhere.

STERLING WHEELBARROW COMPANY

Milwaukee Wisconsin

The "Sterling" wheels easier and lasts longer
Another Step Forward
and Far in the Lead!

For years the performance of Famous Universal Woodworkers has earned for them the reputation of leadership in their field. But not content with even that distinction, we have just added some new improvements to our Junior "30" Woodworker which place it still farther forward in the field of Leadership.

Chief among these new improvements is the addition of—

A double Drive Shaft which means—

---No Short Belts!
---No Cross Belts!
---No Idlers!

—Each unit is independently controlled, making possible the operation of any unit as desired without waste of power. Also, machine is now built with longer, wider, and heavier frame to give greater stability.

Send today for full particulars regarding this new improved machine. Don’t wait another minute! It’s a money maker for you! Get your request in the mails today!

Address Dept. 109.

The Sidney Machine Tool Co.
Sidney, Ohio
You'll notice that most of the Prize-Winning Houses have Steel Casements

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

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

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

DAVID LUPTON'S, Sons Company
2203 E. Allegheny Avenue
Philadelphia, Pennsylvania

Lupton Casements in Residence of H. N. Foster, Esq., Ashland, Ky.
Tyson & Foster, Architects.
* Honorable mention "House Beautiful" Small House Competition.

Lupton Casements in Residence of H. N. Foster, Esq., Ashland, Ky.
Tyson & Foster, Architects.
* Honorable mention "House Beautiful" Small House Competition.

Lupton Casements in Residence of H. N. Foster, Esq., Ashland, Ky.
Tyson & Foster, Architects.
* Honorable mention "House Beautiful" Small House Competition.

Lupton Casements in Residence of H. N. Foster, Esq., Ashland, Ky.
Tyson & Foster, Architects.
* Honorable mention "House Beautiful" Small House Competition.
You Must See Nu-Tile Tapestry Asphalt Shingle

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

But Nu-Tile Shingles are more than a beautiful roof covering. The same sturdy weather resistance, which has been built into Amalgamated roofing products for so many years, is contained in Nu-Tile Tapestry Shingles. And in nature's non-fading minerals, marble, granite, slate and porcelain, lies the secret of the permanency of Nu-Tile tints.

Not until you examine actual samples of Nu-Tile Shingles can you get an adequate conception of their unusual roofing values. You should have a set of Nu-Tile Samples to show your clients.

Beverly Country Club

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

Dear Mr. Milligan:

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

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

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

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

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

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

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

Name

Firm

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

Of the 24,000,000 houses in the United States, 18,000,000 are frame!
America now builds only 200,000 houses each year—therefore it will take ninety (90) years at the same rate to build another 18,000,000 houses—
To build a market for your services as big as that which already exists!
Some day housing will catch up with demand—then what are you going to do? Building will gradually fall off—where will America’s 75,000 contractors turn to employ their ability?
More than likely there’ll be a lively scramble to get into the ‘overcoating’ and remodelling business—to do what has been left undone in the past; that’s all there’ll be to do for a lot of people.

I’d get into the ‘overcoat’ and remodelling business RIGHT NOW, because:
1—You are not dependent upon other professional men for jobs.
2—In bad times the property owner must keep his house in repair, while the man-about-to-build can put it off indefinitely, and leave you out of work.
3—There’s more money in ‘overcoating’ now than there will be when more people get into it.
4—When a man buys an ‘overcoat’ he is sure to do a little extra work here and there. We are about to begin the BIGGEST and MOST COMPLETE merchandising, advertising, and selling campaign ever undertaken by a building material manufacturer—
And, every contractor has a part in it.
Write us for the complete details of our 1925-1926 ‘OVERCOAT’ CAMPAIGN.

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

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

NATIONAL STEEL FABRIC COMPANY
706 UNION TRUST BUILDING · PITTSBURGH, U.S.A.
Increase the Value of the Home

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

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

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

**Prices**

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 inch</td>
<td>$4.00</td>
</tr>
<tr>
<td>16 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>18 inch</td>
<td>4.60</td>
</tr>
<tr>
<td>20 inch</td>
<td>4.90</td>
</tr>
<tr>
<td>22 inch</td>
<td>$5.20</td>
</tr>
<tr>
<td>24 inch</td>
<td>5.50</td>
</tr>
<tr>
<td>26 inch</td>
<td>5.80</td>
</tr>
<tr>
<td>28 inch</td>
<td>6.10</td>
</tr>
</tbody>
</table>

**Knape & Vogt Mfg. Co.**
GRAND RAPIDS, MICHIGAN

Knape & Vogt Clothes Closet Fixtures are sold in hardware stores everywhere, but if you are unable to find your local dealer, order from the factory direct.
The same care with which home buyers naturally consider the charm and outward comforts of a home should be given to the unseen, hidden construction within the walls. Within those walls are concealed materials and workmanship that affect so vitally the durability of the home—how long that outward charm will last! Lumber is there, with the very important task of so strengthening the structure that it will hold its own against Time and undue depreciation. Good lumber can be the home owner's best investment asset. For years Long-Bell trade-marked lumber has given home buyers and builders merited confidence in the durability of the home.

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

Ask your retail lumberman

THE LONG-BELL LUMBER COMPANY
R. A. Long Bldg. Lumbermen Since 1875 Kansas City, Mo.
"I had a hot air furnace in our 7-room house before I got the Bulldog and our house was always cold. With the Bulldog it only takes half as much coal and we had weather below zero, and the house was nice and warm in the morning when we got up. We never have the draft on more than half an hour at a time, and it has the place red hot. It is easy to regulate and keeps the fire all day in mild weather.

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

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

"I can run my Bulldog furnace for fourteen days in normal weather conditions on the actual cost of fifty cents." So writes F. R. Redetzke, of Cleveland, North Dakota, and he adds: "Hard to believe, is it? That’s what some of my neighbors thought until I showed them! We have an unlimited amount of grain screenings which I use for fuel."

Send for Free Book

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

BABSON BROS., 19th St. and California Ave., Dept. 16-56, Chicago, Ill.

Babson Bros., Dept. 16-56
19th St. and California Ave., Chicago, Ill.

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

Name........................................
Address ......................................
The Story of Stucco

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

Standardized Stucco

ASBESTONE Quality is Uniformly High and Dependable

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

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

Sold by most reliable dealers

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

FRANKLYN R. MULLER, Inc.
508 Madison Street
Waukegan, Illinois
REMODEL

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

Laid right over old worn floors

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

Beauty

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

Sanitation

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

Add another room

The attic is an ideal place for the children to play, or it provides extra accommodation for guests, when it is made attractive and usable by Oak Flooring.

Increased value

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

How we help you

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

TEAR OUT AND MAIL

Oak Flooring Bureau
838 Hearst Bldg., Chicago

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

Name: __________________________

Address: ________________________

City: ___________ State: _________

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

Black and Galvanized SHEETS
AND HIGH GRADE ROOFING TIN PLATES

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

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

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

Prominent septic tank and vault makers use Keystone for greater durability.
Successful architects, engineers, contractors, roofers and builders use Keystone for maximum wear and rust-resistance.
Leading burial vault and casket manufacturers use Keystone for increased permanence and protection underground, where both service and sentiment demand enduring quality.
Keystone Copper Steel demonstrated its excellence in the service tests of the American Society for Testing Materials. Could you ask for more thorough and impartial proof?
Users everywhere favor Keystone for all purpose requiring lasting service. Send for "Facts" booklet.

American Sheet and Tin Plate Company
General Offices: Frick Building, Pittsburgh, Pa.

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

Export Representatives: United States Steel Products Company, New York City
Pacific Coast Representatives: United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

When writing advertisers please mention the American Builder
Wide charging hopper takes full batch! Shoots charge into drum at high speed!

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

Dandie Light Mixer

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

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

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

KOEHRING COMPANY MILWAUKEE WISCONSIN

Send Back the Coupon for Full Details!

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Do you know how to "figure" such items as these?

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

Contractors and builders who know and use Curtis Woodwork avoid all the trouble and expense of made-to-order millwork. They use standard designs in standard sizes. Their jobs are never held up because of the frames, doors, sash, trim, cabinetwork or stairwork. These items—in Curtis Woodwork—are delivered right from stock. In fact, often from the Curtis Dealer's own stock.

Figure them as Curtis Standard Designs

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

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

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

Curtis Woodwork is identified by the mark above. Whatever you buy—sash, door, molding, or interior woodwork—see that it bears this trademark. Curtis Woodwork is sold under the "1866 Curtis Trademark" by Curtis Dealers east of the Rockies.
You Can Be Assured of Economical, Dependable Water Service beyond the city mains

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

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

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

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

FAIRBANKS, MORSE & CO.
Manufacturers
Chicago, U. S. A.

Fairbanks-Morse Products "Every Line a Leader"

Branches and Service Stations covering every state in the Union

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

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

Name ____________________________________________
Address __________________________________________
City ____________________________________________ State __________

Pin This To

FAIRBANKS, MORSE & CO.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Each of the forty-two homes shown in the picture uses a

“MERION”

Automatic Gas Water Heater

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

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

$60 — $70 and $90

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

Every home can now afford an automatic water heater.

Sold by Leading Plumbers Everywhere

JOHN WOOD MFG. COMPANY

CONSHOHOCKEN, PA.  LOS ANGELES, CALIF.
There will never be a fire horror here because the builder and architect provided this auditorium with partitions of Ambler Asbestos Building Lumber and Linabestos Wallboard—permanent materials that offer absolute protection against fire. Long-fiber asbestos and Portland cement have, in their original form, stood intense heat. They combine to make these sturdy materials. The finished products are as permanent as the primary constituents. Nothing to decay, they grow stronger with age.

Ambler Asbestos Building Lumber is used for weatherproof and fireproof construction—exterior half-timbering, fire-doors, lining for elevator shafts and for a variety of other uses. The laws of Massachusetts, Connecticut, New York and Pennsylvania require that such material be used for all moving picture booths. We are pleased to furnish, free of any obligation, blue prints and specifications for these booths. This material comes in a restful gray color that may be used without any special finish, although painting can be used wherever it is wanted. Furnished in sheets 42 inches wide and 48 to 96 inches long and in various thicknesses from 3/16" to 1" thick.

Ambler Linabestos Wallboard is for interior construction and furnishes an ideal substitute for plaster. Buff in color, it comes in sheets 48" by 48" and 48" by 96" 3/16" and 1/2" thick to fit standard joists and studding.

Both materials may be cut with ordinary tools and can be handled by carpenters. Let us send you samples and show their application to some job now in hand.
Some of the Chicago Faucets installed in the Book Cadillac Hotel

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

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

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

The unit contains all wearing parts—seat and washer—both renewable quickly, easily and at a cost of a few cents. There is no wear on any part of the body casting. The fixture itself never need be removed for repair or replacement. Since most of the fixtures are "concealed"—built into tile walls—the advantage of renewable unit construction is obvious.

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

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

THE CHICAGO FAUCET CO.
2700-2722 N. Crawford, Chicago.
"We finished the job way under estimated cost, and still made more money than we figured on" —

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

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

20th Century Woodworker
No Motor to Pull

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

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

Ball-Bearing Construction

Mail Coupon for Details

Cresson-Morris Co.

18th Street & Allegheny Avenue

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
A Wonder Mixer located five, ten or fifteen feet above your materials and discharging directly into the forms reduces the cost of mixed concrete distribution and largely eliminates wheelbarrow hauling.

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

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

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

Send for your copy today!
Demand answers to these questions before you buy any roofing

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

1. Is this roofing strong and husky?
   Twist it; bend it. See if it is tough, if it cracks or breaks. Has it enough weight and body to lie flat, without curling, in the face of sun, wind and weather?

2. Is the slate firmly imbedded in the surface?
   Put it on the floor. Kick it, scuff it. Note whether the small particles of crushed slate stay on or come off. What will sliding ice do to it?

3. How do extreme temperature changes affect it?
   Put it on ice; then pour hot water on it. Watch the results carefully. Does this extreme and sudden change of temperature impair it in any way?

4. Will it "run" under extreme heat?
   Put a sample on a hot radiator. Whatever happens to the sample will happen when this roofing is exposed to blistering sun on your home. Don't buy roofing that "runs."

5. Will this roofing absorb water?
   Roofing should shed water—not absorb it. Soak a piece and weigh it. Avoid roofings that hold moisture.

6. Is this a fire-safe roofing?
   Will flying embers ignite the roofing you put on your home? Ask if it is approved by the National Board of Fire Underwriters. Demand a demonstration.

These are exactly the conditions your roof must face and the "6 Daring Tests" we invite you to make of Beaver Vulcanite ... roofing that fails to endure these tests. Know what "high quality roofing" means. Check the coupon for your sample now.

BEAVER PRODUCTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
OFFICE Building rents are increasing every year. But the tenants who pay these rents demand up-to-date buildings.

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

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

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

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

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

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

THE VITROLITE COMPANY

133 W. Washington Street
Chicago

Brances

Atlanta Baltimore Boston Brooklyn Buffalo Cincinnati Cleveland Columbus Denver Kansas City Los Angeles Miami New Orleans New York Ottawa Philadelphia


St. Louis Havana London Melbourne Osaka Mexico City Shanghai

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Unwisely chosen furniture may be easily discarded—not so with woodwork

What you build into a house is built to stay. The woodwork—the right kind of an entrance—the stairway, bookcases, china closet, mantel, cabinets, breakfast nook, to say nothing of the doors and trims. These are items which should be selected with care. Therefore, experienced home builders specify their woodwork by name. And in many thousands of instances it is "Morgan-Quality." They insist upon having the genuine quality mark stamped on every piece, "Morgan.

To those familiar with the products of this concern, the name Morgan stands for (1)—Over 60 years of woodworking experience. (2)—Great organization of master craftsmen, factories and the most modern woodworking equipment. (3)—Vast acreages of timber, supplying lumber at lowest cost. (4)—A perfected system of standardized manufacturing which reduces "quality" production cost to a minimum. (5)—Highest standards, rigidly maintained through three generations of service to the home-builder.

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

Get This 440-page Master Book on Home Building

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

"Building with Assurance" endorsed by over 15,000 authorities

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

Mail coupon for prospectus

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

Address nearest office, Dept. T-9

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

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

Name: ........................................
Address: ......................................

State: ........................................

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
GROWTH and SERVICE

A Business Grows
Only As It Serves

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

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

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

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

E. C. ATKINS & CO.
Established 1857
INDIANAPOLIS, INDIANA

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
BUILD HOMES THAT WIN PRAISE AND PROFIT!

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

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

You can satisfy every type of customer with the help which suggestions in Keith's Magazine give you. It is like talking over matters every month with an architect who has a national reputation for home-planning. For nearly 25 years Mr. Keith, the publisher, also the President of Keith Corporation, Architects, has given his time to this work — he gives you the benefit of his experience through the pages of this magazine.

Get This Help

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

Special Two-for-One Offer!

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

MAIL THIS COUPON

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

Send me Keith's Magazine for one year, also your 278 page De Luxe edition, "Beautiful Homes," postage prepaid, for which I enclose check (or money order) for $3.75.

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

Name

Address

City State

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Many builders and architects who want "the right hanger for every door", specify Allith hangers and hardware.

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

Above is shown Allith No. 17 Warehouse Door Hanger for doors from 1 1/2" to 3 1/2" thick. Approximate carrying capacity 2,000 pounds.

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

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

No. 68 Hanger is shown above. For use with Allith No. 67 trolley track. Wheels are 3" in diameter—malleable and steel construction through. Write for full particulars on any of the Allith designs, and be sure you have our new No. 91 Garage Hardware catalog.

"The right hanger for every door"

ALLITH-PROUTY COMPANY DANVILLE ILLINOIS

Manufacturers of
Door Hangers
Garage Door Hardware
Fire Door Hardware
Overhead Carriers
Rolling Ladders
Spring Hinges

"THE SIGN OF QUALITY"
HEN you can say “The walls and roof are insulated with Armstrong’s Corkboard” your chances of selling the house are greatly increased. The buyer knows at once that it is a house built for comfort and economy.

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

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

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

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

Branches in the Principal Cities

Armstrong's Nonpareil Corkboard Insulation for Residential, Commercial and Industrial Buildings
American Builder's Market Bureau

We give below a list of articles most commonly used in building construction. These are designated by numbers. Any reader of the American Builder who is in the market for any of these articles will be placed in touch with manufacturers who can supply his needs. All the reader has to do to get immediate action is to write the numbers in the squares to the right of the coupon at the bottom of this page, give his name, address, and occupation, detach the coupon and mail it to the American Builder. Do not tear out this sheet. Leave it securely bound in the magazine for future reference.

Information regarding any article not named on this page (owing to lack of space) will be given if reader will write the article on the margin at the bottom of the coupon.

### Articles

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accelerators, Cement</td>
</tr>
<tr>
<td>2</td>
<td>Air Painting Equipment</td>
</tr>
<tr>
<td>3</td>
<td>Architects' Supplies</td>
</tr>
<tr>
<td>4</td>
<td>Ash Bumps</td>
</tr>
<tr>
<td>5</td>
<td>Auger Bits</td>
</tr>
<tr>
<td>6</td>
<td>Axes, Carpenters'</td>
</tr>
<tr>
<td>7</td>
<td>Basement Windows</td>
</tr>
<tr>
<td>8</td>
<td>Bathroom Cabinets</td>
</tr>
<tr>
<td>9</td>
<td>Bathroom Fixtures</td>
</tr>
<tr>
<td>10</td>
<td>Bathubs</td>
</tr>
<tr>
<td>11</td>
<td>Baths, Shower</td>
</tr>
<tr>
<td>12</td>
<td>Bats, Disappearing</td>
</tr>
<tr>
<td>13</td>
<td>Block Machines, Concrete</td>
</tr>
<tr>
<td>14</td>
<td>Bolts, House Meeting</td>
</tr>
<tr>
<td>15</td>
<td>Brick, Common</td>
</tr>
<tr>
<td>16</td>
<td>Brick, Face</td>
</tr>
<tr>
<td>17</td>
<td>Brick, Face</td>
</tr>
<tr>
<td>18</td>
<td>Brick Machines, Cement</td>
</tr>
<tr>
<td>19</td>
<td>Calcium Chloride</td>
</tr>
<tr>
<td>20</td>
<td>Carvings, Wood</td>
</tr>
<tr>
<td>21</td>
<td>Casement Hardware</td>
</tr>
<tr>
<td>22</td>
<td>Ceiling Beads</td>
</tr>
<tr>
<td>23</td>
<td>Ceiling Beads</td>
</tr>
<tr>
<td>24</td>
<td>Cement, Patent</td>
</tr>
<tr>
<td>25</td>
<td>Cement, Portland</td>
</tr>
<tr>
<td>26</td>
<td>Cement, White Portland</td>
</tr>
<tr>
<td>27</td>
<td>Channels, Steel</td>
</tr>
<tr>
<td>28</td>
<td>Columns, Metal</td>
</tr>
<tr>
<td>29</td>
<td>Columns, Wood</td>
</tr>
<tr>
<td>30</td>
<td>Conductors Pipes</td>
</tr>
<tr>
<td>31</td>
<td>Copper Sheets and Rolls</td>
</tr>
<tr>
<td>32</td>
<td>Corner Beads</td>
</tr>
<tr>
<td>33</td>
<td>Corrugated Metal</td>
</tr>
<tr>
<td>34</td>
<td>Derricks</td>
</tr>
<tr>
<td>35</td>
<td>Door Checks</td>
</tr>
<tr>
<td>36</td>
<td>Door Hangers and Track</td>
</tr>
<tr>
<td>37</td>
<td>Doors, Hardwood and Frame</td>
</tr>
<tr>
<td>38</td>
<td>Doors, Metal</td>
</tr>
<tr>
<td>39</td>
<td>Doors, Metal</td>
</tr>
<tr>
<td>40</td>
<td>Doors, Metal</td>
</tr>
<tr>
<td>41</td>
<td>Doors, Metal</td>
</tr>
<tr>
<td>42</td>
<td>Drums, Screws</td>
</tr>
<tr>
<td>43</td>
<td>Elevators</td>
</tr>
<tr>
<td>44</td>
<td>Engines, Gas and Kerosene</td>
</tr>
<tr>
<td>45</td>
<td>Expansion Bolts</td>
</tr>
<tr>
<td>46</td>
<td>Expansion Bolts</td>
</tr>
<tr>
<td>47</td>
<td>Fireclay, Equipment</td>
</tr>
<tr>
<td>48</td>
<td>Fireclay, Equipment</td>
</tr>
<tr>
<td>49</td>
<td>Fireclay, Equipment</td>
</tr>
<tr>
<td>50</td>
<td>Flagpoles</td>
</tr>
<tr>
<td>51</td>
<td>Floor Clips</td>
</tr>
<tr>
<td>52</td>
<td>Floor Coverings</td>
</tr>
<tr>
<td>53</td>
<td>Floor Coverings</td>
</tr>
<tr>
<td>54</td>
<td>Floor-Polishing Machines</td>
</tr>
<tr>
<td>55</td>
<td>Floor-Surfacing Machines</td>
</tr>
<tr>
<td>56</td>
<td>Flooring, Composition</td>
</tr>
<tr>
<td>57</td>
<td>Flooring, Hardwood</td>
</tr>
<tr>
<td>58</td>
<td>Frames, Door and Window</td>
</tr>
<tr>
<td>59</td>
<td>Furnaces, Pipeless</td>
</tr>
<tr>
<td>60</td>
<td>Furnaces, Warm Air</td>
</tr>
<tr>
<td>61</td>
<td>Gas, Age Heaters</td>
</tr>
<tr>
<td>62</td>
<td>Garbage Burners</td>
</tr>
<tr>
<td>63</td>
<td>Garbage Receivers</td>
</tr>
<tr>
<td>64</td>
<td>Garment Markers</td>
</tr>
<tr>
<td>65</td>
<td>Glass, Window</td>
</tr>
<tr>
<td>66</td>
<td>Glass</td>
</tr>
<tr>
<td>67</td>
<td>Gypsum, Electric</td>
</tr>
<tr>
<td>68</td>
<td>Hammers, Carpenters'</td>
</tr>
<tr>
<td>69</td>
<td>Hardeners, Cement</td>
</tr>
<tr>
<td>70</td>
<td>Hatches, Shingling</td>
</tr>
<tr>
<td>71</td>
<td>Heads, Cutter and dado</td>
</tr>
<tr>
<td>72</td>
<td>Hinges and Springs</td>
</tr>
<tr>
<td>73</td>
<td>Hinges, Contractors'</td>
</tr>
<tr>
<td>74</td>
<td>Insulation</td>
</tr>
<tr>
<td>75</td>
<td>Jacks, House-Moving</td>
</tr>
<tr>
<td>76</td>
<td>Joints, Woodworkers'</td>
</tr>
<tr>
<td>77</td>
<td>Joint Mangers</td>
</tr>
<tr>
<td>78</td>
<td>Kitchen Cabinets</td>
</tr>
<tr>
<td>79</td>
<td>Levels, Carpenters'</td>
</tr>
<tr>
<td>80</td>
<td>Lighting Fixtures</td>
</tr>
<tr>
<td>81</td>
<td>Lighting Systems</td>
</tr>
<tr>
<td>82</td>
<td>Lighting Sets</td>
</tr>
<tr>
<td>83</td>
<td>Lime, Prepared</td>
</tr>
<tr>
<td>84</td>
<td>Limestone</td>
</tr>
<tr>
<td>85</td>
<td>Lockers, Steel</td>
</tr>
<tr>
<td>86</td>
<td>Locks and Latches</td>
</tr>
<tr>
<td>87</td>
<td>Lumber</td>
</tr>
<tr>
<td>88</td>
<td>Lumber, Ashboards</td>
</tr>
<tr>
<td>89</td>
<td>Lumber, Metal</td>
</tr>
<tr>
<td>90</td>
<td>Mail Boxes</td>
</tr>
<tr>
<td>91</td>
<td>Mail Boxes</td>
</tr>
<tr>
<td>92</td>
<td>Marble, Fireplaces</td>
</tr>
<tr>
<td>93</td>
<td>Marble, Vitreous</td>
</tr>
<tr>
<td>94</td>
<td>Metal Lath</td>
</tr>
<tr>
<td>95</td>
<td>Metals, Lath</td>
</tr>
<tr>
<td>96</td>
<td>Mineral Oil</td>
</tr>
<tr>
<td>97</td>
<td>Nutative Shingles</td>
</tr>
<tr>
<td>98</td>
<td>Mixers, Concrete</td>
</tr>
<tr>
<td>99</td>
<td>Modern Metal</td>
</tr>
<tr>
<td>100</td>
<td>Mortar Colors</td>
</tr>
<tr>
<td>101</td>
<td>Mortising Machinery</td>
</tr>
<tr>
<td>102</td>
<td>Motors, Electric</td>
</tr>
<tr>
<td>103</td>
<td>Motors, Electric</td>
</tr>
<tr>
<td>104</td>
<td>Mud and Forms</td>
</tr>
<tr>
<td>105</td>
<td>Nails, Bowling</td>
</tr>
<tr>
<td>106</td>
<td>Nails, Bowling</td>
</tr>
<tr>
<td>107</td>
<td>Outlet, Electric</td>
</tr>
<tr>
<td>108</td>
<td>Oven Regulators</td>
</tr>
<tr>
<td>109</td>
<td>Package Receivers</td>
</tr>
<tr>
<td>110</td>
<td>Paints</td>
</tr>
<tr>
<td>111</td>
<td>Pans</td>
</tr>
<tr>
<td>112</td>
<td>Parities, Metal</td>
</tr>
<tr>
<td>113</td>
<td>Paints, House</td>
</tr>
<tr>
<td>114</td>
<td>Plywood</td>
</tr>
<tr>
<td>115</td>
<td>Plumbing Supplies</td>
</tr>
<tr>
<td>116</td>
<td>Pumps, Contractors'</td>
</tr>
<tr>
<td>117</td>
<td>Pumps, House</td>
</tr>
<tr>
<td>118</td>
<td>Radiators</td>
</tr>
<tr>
<td>119</td>
<td>Radiator Covers</td>
</tr>
<tr>
<td>120</td>
<td>Range, Electric</td>
</tr>
<tr>
<td>121</td>
<td>Range, Gas</td>
</tr>
<tr>
<td>122</td>
<td>Refrigerators</td>
</tr>
<tr>
<td>123</td>
<td>Refrigerators, Iceless</td>
</tr>
<tr>
<td>124</td>
<td>Registers, Floor and Wall</td>
</tr>
<tr>
<td>125</td>
<td>Reinforcing</td>
</tr>
<tr>
<td>126</td>
<td>Roof Brackets</td>
</tr>
<tr>
<td>127</td>
<td>Roof Trusses</td>
</tr>
<tr>
<td>128</td>
<td>Roofing, Asphalt Shingle</td>
</tr>
<tr>
<td>129</td>
<td>Roofing, Canvas</td>
</tr>
<tr>
<td>130</td>
<td>Roofing, Metal Shingle</td>
</tr>
<tr>
<td>131</td>
<td>Roofing, Roll</td>
</tr>
<tr>
<td>132</td>
<td>Roofing, Slate</td>
</tr>
<tr>
<td>133</td>
<td>Roofing, Stained Shingle</td>
</tr>
<tr>
<td>134</td>
<td>Roofing, Tile (Clay)</td>
</tr>
<tr>
<td>135</td>
<td>Roofing, Tile (Cement)</td>
</tr>
<tr>
<td>136</td>
<td>Roofing, Zinc</td>
</tr>
<tr>
<td>137</td>
<td>Rules and Measures</td>
</tr>
<tr>
<td>138</td>
<td>Safes, Wall</td>
</tr>
<tr>
<td>139</td>
<td>Sanders</td>
</tr>
<tr>
<td>140</td>
<td>Sash, Metal</td>
</tr>
<tr>
<td>141</td>
<td>Sash, Metal</td>
</tr>
<tr>
<td>142</td>
<td>Sash, Metal</td>
</tr>
<tr>
<td>143</td>
<td>Sash Chains</td>
</tr>
<tr>
<td>144</td>
<td>Sash Heads</td>
</tr>
<tr>
<td>145</td>
<td>Sash Makers</td>
</tr>
<tr>
<td>146</td>
<td>Sash Holders</td>
</tr>
<tr>
<td>147</td>
<td>Sash Pulleys</td>
</tr>
<tr>
<td>148</td>
<td>Sash, Wood</td>
</tr>
<tr>
<td>149</td>
<td>Sash, Wood</td>
</tr>
<tr>
<td>150</td>
<td>Sawing, Metal</td>
</tr>
<tr>
<td>151</td>
<td>Sawing, Metal</td>
</tr>
<tr>
<td>152</td>
<td>Sawing, Metal</td>
</tr>
<tr>
<td>153</td>
<td>Sawing, Metal</td>
</tr>
<tr>
<td>154</td>
<td>Screws, Steel</td>
</tr>
<tr>
<td>155</td>
<td>Screws, Rectifiers</td>
</tr>
<tr>
<td>156</td>
<td>Screws, Wood</td>
</tr>
<tr>
<td>157</td>
<td>Screws, Window</td>
</tr>
<tr>
<td>158</td>
<td>Screws, Wood</td>
</tr>
<tr>
<td>159</td>
<td>Screws, Wood</td>
</tr>
<tr>
<td>160</td>
<td>Screen Stretchers</td>
</tr>
<tr>
<td>161</td>
<td>Screen Disposal</td>
</tr>
<tr>
<td>162</td>
<td>Sheets, Black and Galvanized</td>
</tr>
<tr>
<td>163</td>
<td>Shelving Stock</td>
</tr>
<tr>
<td>164</td>
<td>Shelving Stock</td>
</tr>
<tr>
<td>165</td>
<td>Shutter Workers</td>
</tr>
<tr>
<td>166</td>
<td>Sidewalk Lights</td>
</tr>
<tr>
<td>167</td>
<td>Skylights</td>
</tr>
<tr>
<td>168</td>
<td>Slats, Structural</td>
</tr>
<tr>
<td>169</td>
<td>Slates, Bituminized</td>
</tr>
<tr>
<td>170</td>
<td>Stair Treads</td>
</tr>
<tr>
<td>171</td>
<td>Stairways, Metal</td>
</tr>
<tr>
<td>172</td>
<td>Stairways, Movable</td>
</tr>
<tr>
<td>173</td>
<td>Storage Rooms</td>
</tr>
<tr>
<td>174</td>
<td>Stucco</td>
</tr>
<tr>
<td>175</td>
<td>Sumpers, Concrete</td>
</tr>
<tr>
<td>176</td>
<td>Tiles, Floor and Wall</td>
</tr>
<tr>
<td>177</td>
<td>Tiles, Structural</td>
</tr>
<tr>
<td>178</td>
<td>Tiles, Wood</td>
</tr>
<tr>
<td>179</td>
<td>Tool Boxes and Cases</td>
</tr>
<tr>
<td>180</td>
<td>Transits</td>
</tr>
<tr>
<td>181</td>
<td>Trucks, House-Moving</td>
</tr>
<tr>
<td>182</td>
<td>Trucks, Motor</td>
</tr>
<tr>
<td>183</td>
<td>Vacuum Cleaners</td>
</tr>
<tr>
<td>184</td>
<td>Varnishes</td>
</tr>
<tr>
<td>185</td>
<td>Ventilators, Roof</td>
</tr>
<tr>
<td>186</td>
<td>Ventilators, Window</td>
</tr>
<tr>
<td>187</td>
<td>Wall Board</td>
</tr>
<tr>
<td>188</td>
<td>Wall Coverings</td>
</tr>
<tr>
<td>189</td>
<td>Wall Paper</td>
</tr>
<tr>
<td>190</td>
<td>Wall Paper</td>
</tr>
<tr>
<td>191</td>
<td>Wall Ties</td>
</tr>
<tr>
<td>192</td>
<td>Water Heaters</td>
</tr>
<tr>
<td>193</td>
<td>Waterproofing</td>
</tr>
<tr>
<td>194</td>
<td>Water Softeners</td>
</tr>
<tr>
<td>195</td>
<td>Water Supply Systems</td>
</tr>
<tr>
<td>196</td>
<td>Water Supply Systems</td>
</tr>
<tr>
<td>197</td>
<td>Wheelbarrows</td>
</tr>
<tr>
<td>198</td>
<td>Window Castings, Steel</td>
</tr>
<tr>
<td>199</td>
<td>Window Castings, Wood</td>
</tr>
<tr>
<td>200</td>
<td>Wire Cloth</td>
</tr>
<tr>
<td>201</td>
<td>Wire Cloth</td>
</tr>
<tr>
<td>202</td>
<td>Wood Adhesives</td>
</tr>
<tr>
<td>203</td>
<td>Wood Adhesives</td>
</tr>
</tbody>
</table>

Use This Coupon to Get Complete Information

---

American Builder, 1827 Prairie Ave., Chicago

Please put me in touch with manufacturers of the articles designated by number in the squares to the right. I am in the market and wish complete information.

Name ________________________________

Address ________________________________

Occupation ________________________________
The Days of Hand Sawing for Progressive Contractors are Over

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

Builder's Complete

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

Take It Anywhere You Saw

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

Cross-Cuts, Rips, Miter

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

Investigate! This Means Much to You

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

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

Increasing the Investment Value of Old Frame and Stucco Houses

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

The way out for owners of frame and stucco houses is to veneer the old house with Face Brick. At one and the same time they eliminate needless future expense, make the old home more attractive and increase the value of their investment.

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

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

THE AMERICAN FACE BRICK ASSOCIATION
1763 Peoples Life Building · Chicago, Illinois
THE new Nelson Master Thatch Roof is designed according to specifications of some of America's leading Architects.

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

Beautiful, permanent, subdued tones of Nelson natural rock colors are used in finishing Master Thatch—pleasing to the eye and lending distinction to any building when properly selected. Hard and fast lines are completely eliminated. Thus a beautiful artistic effect is achieved together with a covering that is fire-resistant and is fabricated to outlast the building.

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

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

The B. F. Nelson Manufacturing Co.
Minneapolis, Minn.
The building shown in this advertisement is reproduced from an original design by Louis Boynton Bershak, Architect
Ralph Fowler Koch, Associate
411 West 15th Street, Minneapolis, Minnesota
The Endless Stream

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

Shevlin, Carpenter & Clarke Company
900 First National-Soo Line Bldg., Minneapolis, Minn.
BEAUTIFUL as an old tapestry, durable as the quarried rock from which it is made, a Nelson Master Slab Roof embodies both artistry and scientific construction.

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

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

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

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

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

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

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

Andersen Lumber Company
Bayport, Minn.

Andersen FRAMES
Laid Like Cement
Everlasbestos is the quality Composition Preferred by Builders and Owners

Laid like cement 3/8" to 1/2" thick.
Hardens in 24 hours.
Can be laid in one piece with cove base or wainscot.
Bonds with any foundation.
Good man can lay 200 sq. ft. per day.
Valuable Instruction Manual free with order.
Colors, Red, Buff, Gray.
Shipped in bags ready for use. Shipping weight 43 lbs. per sq. foot.

Laying Everlasbestos Brings Regular Profits

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

Just As Good Laid Over Old Floors
Everlasbestos is every bit as durable and good looking laid over old floors as installed in new buildings. There is no limit to your opportunities for permanent, ever-growing, most profitable business with Everlasbestos. Every Everlasbestos customer is a booster for you and your business, because this flooring is smooth, seamless, easily cleaned, sanitary, handsome and practically everlasting. It is tough, fibrous, quiet, resilient and easy to the tread. Three attractive colors—red, buff and gray.

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

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

EVERLASBESTOS FLOORING CO. ROCHESTER, N. Y.
Dept. B.

95 North Street.
Cashing in out in Kansas

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

**Things That Sell Homes**

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

**Accurate and Speedy**

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

**Convenient and Economical**

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

Send for Catalog 402D and Price List.

J. D. Wallace & Co. 136 So. California Avenue CHICAGO, U. S. A.
Work that you thoroughly ENJOY, besides a business that PAYS

This is the way our agents write us:

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

Whether you've had any experience in weatherstrip work or not, send for our proposition to you. Learn all about the Ceco line—about how we are helping others and how we will help you. Little or no investment required. All you do is change over to this pleasant occupation, familiarize yourself with Ceco Metal Weatherstrips and how to install them, and have your OWN business. It's easy with our help. Don't be satisfied to grind along. You owe it to your family or to YOURSELF to step ahead. Delay simply means "postponement or hindrance." Start TODAY—NOW!

Get the Ceco Proposition—FIND OUT SEND THE COUPON!

CECO WEATHERSTRIP COMPANY
Dept. 19, 1926 S. 52nd Ave., Chicago, Illinois
Without obligation send me the Ceco Weatherstrip proposition.
I am an experienced weatherstrip man.
I have never sold or installed metal weatherstrips.
My present occupation is.
NAME..............................
ADDRESS..........................
Use it at once! No lime. No slaking. No wasteful waiting. Use BRIXMENT mortar as soon as it's mixed. Smoother, easier and quicker to spread. Try it and know why more BRIXMENT is being sold today than ever.

for Better Masonry

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

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

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

The safe rule to follow is not to pay subscription money to a stranger, but to deal direct with the publishers of the American Builder. You can send bank check, post office money order or currency direct by mail to the American Builder, 1827 Prairie Avenue, Chicago, and be certain that your subscription will be properly entered. This is better than handing over good money to a stranger equipped with forged credentials and misleading or fraudulent receipts.

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

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

Clipping from the Holland Furnace Company, C. D. Karr, Advertising Mgr.

HOLLAND, MICH.
American Builder—July 15, 1925.
Your de luxe copy of the June American Builder has come and is very attractive indeed. It does contain a great deal of useful information, too.

CHICAGO, ILL.
American Builder—July 14, 1925.
I cannot help but congratulate you on this very beautiful and informative volume, and shall usually give it a place in our reference file.
The Beauty of Bishopric in Color and Texture Means Increased Business for the Builder, Because Every Job Sells Another

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

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

Briefly, Bishopric Stucco over Bishopric Base

**INSURES**

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

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

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

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

Bishopric is Sold by Dealers Everywhere

BISHOPRIC MANUFACTURING @

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Why the Building Activity?

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

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

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

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

Contractors License Law

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

Standard Bidders Questionnaire

A method of judging the ability of contractors to handle construction activities has now been made available and should receive the support of all who are interested in construction work. Laws governing public contracts usually provide that such contracts shall be awarded to the lowest responsible bidder but there is no generally recognized interpretation of the term "responsible" and it is commonly accepted as meaning any bidder who can furnish a surety bond. That furnishing a surety bond does not necessarily indicate responsibility is well known. The surety companies have not presumed to guarantee that the bidders whom they bond are responsible but merely that their contract obligations will, by some means, be fulfilled.

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

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

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

Record Cement Production

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

Big July Construction

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

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

July figures brought the year's total of construction started to date up to $3,189,173,800, an increase of nearly 20 per cent over the first seven months of 1924. At the end of June this year was only 15 per cent ahead of last year.
Mr. Henry S. Davis of the T. C. Davis Building Supply Co. recently wrote the Baltimore Autocar Direct Factory Branch as follows:

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

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

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

The Autocar Company, Ardmore, Pa.

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

*Albany *Buffalo *Detroit *Los Angeles *Orlando *San Diego
*Alton *Camden *Erie *Memphis *Miami *San Francisco
*Baltimore *Charlotte *Fall River *Nashville *New York *San Jose
*Baton Rouge *Chester *Fresno *Newark *New Haven *Schenectady
*Boston *Chicago *Harlingen *New Bedford *New Haven *Scranton
*Bridgeport *Cleveland *Indianapolis *New York *Norfolk *Shamokin
*Birmingham *Columbus *Jersey City *Oakland *Orlando *Springfield
*Bristol *Dallas *Lancaster *Rochester *St. Louis *Williamston
*Bronx *Denver *Lawrence *Richmond *Stockton *Worcester
*Brooklyn

* Indicates Direct Factory Branch

Autocar gas and electric trucks

EITHER OR BOTH - AS YOUR WORK REQUIRES
Building Against Earthquakes
Some Lessons Learned from the Santa Barbara Disaster

By HOWARD C. KEGLEY

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

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

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

Since the beginning of time it has been a generally accepted theory that experience is the teacher. Santa Barbara, the beautiful channel city of the cost of California, is just now conducting a summer school of experience in which contractors, builders, and architects are learning how not to construct buildings.

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

J. J. Backus, building inspector of the City of Los Angeles, who has spent much time in studying the effect of the recent earthquake upon Santa Barbara’s buildings, charges most of the damage to “poor construction.” Under this heading he lists the careless...
pouring of concrete, the use of too much lime and not enough cement in brick mortar, failure to use enough anchor rods and put them in properly, and the utilization of beach sand for mortar and concrete work.

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

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

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

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

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

Mr. Bergstrom's contention is that the bricks should actually be soaked immediately before being used, and that they should be frequently sprinkled while lying on the scaffold. Beyond this, the work should be kept wet for several days. He strongly urges the use of cement mortar instead of lime mortar, and insists that it should be kept wet enough to let it cure normally.

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

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

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

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

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

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

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

"Some of us have learned, from Santa Barbara's lesson, that we are not going to cut any more elevator or ventilator shafts through the main lines or thrusts of our
This Shows How Brickwork Sheared Away and Lack of Cross-Partitions and Brace-Rods Allowed the Building to Literally Pull to Pieces. The offset in the word "California" indicates the extent of the sway.

"We will arrange the masses of our buildings so they will more or less counter-balance each other, and where it is impossible to do that we will provide some place where the structure can crush and at the same time leave the columns and girders intact. Crushing in such a manner entails the minimum of damage and low repair costs.

"Builders in Southern California are quite well agreed that whatever the construction may be, if the building is properly designed and tied together in accordance with normal practice, it should withstand the strain of earthquakes such as have been experienced in the United States.

"One way to fortify a building against earthquakes is to build it so rigid that it will move as a unit when the ground moves," says Mr. Bergstrom. "In erecting tall buildings I believe that they should be made absolutely rigid up to five stories, and flexible from that point upward, so that in the sway they can crush at some point inside—perhaps at the partitions.

"Another way is to design the entire building so that it will sway. Build the partitions of hollow tile, brick or any other material which will permit them to fail if necessary. If they collapse they can easily be replaced. The main objective is to make the skeleton of the building stand the jolt."

As to tall buildings, Building Inspector Backus expresses the opinion that they should be made rigid all the way up. He says he looks with disfavor upon the use of hollow tile for exterior walls between concrete or steel frames, because it crushes too easily in an earthquake, but thinks that otherwise hollow tile is an acceptable material.

"I cling to the idea that all building should be as rigid as possible," says he. "Make the structure modern so far as it is possible to do it. The load on every building should be lightened, both as to building material and equipment, as it proceeds skyward.

"All buildings should be braced against side thrust by means of substantial dividing walls, in both directions. No brick work should be laid in any wall unless a good percentage of cement is added to the lime mortar."

Mr. Backus says that the Santa Barbara shake, which wrecked a business street many blocks long and did perhaps $8,000,000 to $12,000,000 damage, should convince people in all parts of the country that it will pay them to spend a little more money on design and construction, and get better buildings. He thinks that if 25 percent more money had actually been put into the buildings at Santa Barbara the repair bill would have been reduced to an enormous extent.

"It is as long as it is short," he declares. "You can build poorly, carry earthquake insurance, which is expensive as a rule, and lose your building, together with the income from it, in the event of a quake; or you can spend a little more and have a small repair bill in the event of a tremor."

Bergstrom tells of three buildings in Santa Barbara, which he designed in accordance with the Los Angeles building ordinance, and which came through the shake unscathed. He tells of two others, designed in the same manner, but which he was asked to re-design in accordance with some other building ordinance, which the contractors told the owners would not require as much steel as the Los Angeles specifications called for. These two buildings, Bergstrom (Continued to page 141.)
Prize Winning Basement Plans

Results of a Very Interesting Architectural Competition

Hitherto the basement of a house has been little more than a stoke hole, rendered useless for almost all other purposes because of space taken up by the heating plant and coal storage with its resultant smoke, soot and ash. Laundry and fruit or vegetable storage space form about the only exceptions to this wasteful rule.

The Peoples Gas Light and Coke Company of Chicago recently set out to try to salvage basement space and make it attractive and useful as living quarters by offering a prize to Chicago architects and draftsmen for the best designed modern basement in which beauty and utility would be the keynote of design. The importance of solving this problem is emphasized when it is remembered that the basement area of a bungalow is equal to the area of the living quarters. In a two-story house it is one-third of the available area, and though only used for eight months of the year by the heating apparatus, this condemns the entire basement, as far as "livable" conditions are concerned, for the entire year.

The reclamation of basement storage space into habitual parlors and rooms is made possible by the installation of a gas-fired central heating plant. The competition for the prize arrangement was confined to Chicago architects and draftsmen and the conditions provided that a central, gas-fired house heating plant, together with hot water service, refrigeration, laundry washing, drying and ironing, should all be taken care of in a practical manner, leaving the remainder of the basement space to be turned into an attractive room or rooms for recreation, rest or entertainment. The size of the lot specified upon which the building was to stand was 50 by 125 feet.

First prize was awarded to P. Donald Horgan. Four other prizes were presented to J. W. Turner, G. P. Lagergren, Margaret S. Jones and T. A. Butler, while honorable mention was given Alfred F. Schmiek. There were 364 entries. The competition was held under the auspices of the Chicago Chapter, American Institute of Architects, A. I. A. Earl H. Reed, Jr., A. I. A., G. A. Carnahan, American Gas Association, L. E. Lindsay, American Gas Association, with H. V. von Holst, A. I. A., acting as architectural adviser.

The prize winning plans were subsequently placed on exhibition in the main showroom of The Peoples Gas Light and Coke Company, in The Peoples Gas Building, Chicago, where they attracted a great deal of attention.—B. J. Mulaney.

Second Prize Basement Design by J. W. Turner. A billiard room with spacious laundry, heater room, and closets, are the distinctive features of this plan.

Honorable Mention Was Given to the Design Submitted by Alfred F. Schmiek, a Beautiful Playroom for the Children with a Bower of Flowers at One End and Flanked by an Attractive Staircase.
First Prize Basement Plan

Majestic New Film Headquarters

The architecture illustrated in this month's perspectives presents a wide variety of subjects and style, all handled in a notable manner. The Paramount Theatre and Office Building is impressive and costly and presents many novel features. The Roosevelt Memorial is particularly fine in its beauty and stateliness and the management of a Stock Yards Bank has honored itself by choosing a bank design which takes its inspiration from that fountain head of American liberty — Independence Hall.

Stock Yards National Bank Building, Chicago, Ill.
A. Epstein, Structural Engineer

Independence Hall in Philadelphia is known as one of the finest examples of Colonial architecture in the United States and this together with its historical value, is the reason for this design being adopted. It is hoped that the building will be of educational value to the people of Chicago.

One of the interesting features in connection with the design of this building is that while the original Independence Hall in Philadelphia is constructed of brick and wood, the Chicago building ordinance would not permit wood construction; consequently, the entire tower is designed in white terra cotta, cornice around the building in copper, window sills in marble, balustrade on roof in terra cotta and roof itself slate.

The entire floor construction is of concrete and the building is 100 per cent fireproof. The roof of the belty is made of terra cotta shingles, closely imitating wood shingles as they appear in the original building. Copper cornice is painted white and from the outside it is almost impossible to tell that cornice, window sills, tower and balustrade on the roof are not wood.

The new building will have a 72-foot frontage on Halsted Street, with a depth of 190 feet along Exchange Avenue and will be two stories and basement high. The cost will be in excess of $500,000. The exterior will be of pressed bronze and roof itself slate.

Paramount Theatre and Office Building, New York City
C. W. and Geo. L. Rapp, Architects, R. E. Hall & Co., Engineers

This structure, which will cost $7,500,000, will contain a theatre auditorium seating 4,000, a small private theatre, and thousands of offices. The total improvement will amount to $13,500,000. The lot has a 200-foot frontage on Broadway, between 43rd and 44th streets, and extends 207 feet westward. Two buildings now occupying this site, the Putnam Building and Westover Court, an apartment house, will be demolished in the late summer.

An immense clock, with a face three stories high, facing Broadway, will be one of the salient features of the new building. It will have chimes imported from Europe. The main lobby will be unusually handsome, being 102 feet long and 47 feet wide. It will rise to a height of five stories, and will be finished in marble and bronze. In detail it will somewhat resemble the foyer of the Paris opera.

A nursery for non-dramatically inclined youngsters, and a radio broadcasting plant are also among the features of the new structure. The small private theatre is to be used for rehearsals, and private showings of new films.

A "Motion Picture Hall of Fame" contains portraits and biographical material of the more notable figures in the development of the industry is also planned.

One feature entirely new to American theatres will be the promenade circling the upper part of the auditorium's interior. It will be reached by high speed elevators. Seats in the Paramount Theatre will be reserved. One whole section of the mezzanine floor will have the exclusiveness of the "Diamond Horseshoe" of the Metropolitan opera, and will be served by private elevators.

New York State Roosevelt Memorial
John Russell Pope, Architect

Adjoining the American Museum of Natural History, between 77th Street, Central Park West, 81st Street and Columbus Avenue, New York City, this beautiful and stately memorial will be erected. Mr. John Russell Pope has been appointed architect as a result of a prize competition won by him with a design, the entrance to which is shown. The jury of award consisted of the trustees of the New York State Roosevelt Memorial and two architects, one selected by the competitors and the other by the trustees.

Memorial Hall will be housed in a building which is to be directly back of the entrance arch illustrated. This building is six stories in height and the hall, which will extend to a height of four stories in the center section, will contain mounted trophies of the chase and other specimens collected on numerous hunting and exploration trips of the late Theodore Roosevelt.

Mr. Pope's solution of the architectural problem involved has been to give stately beauty to the conspicuous entrance arch while the Memorial Hall, in its interior treatment, conforms to the spirit of the American Museum of Natural History which it adjoins and to which "Theodore Roosevelt devoted the early and closing years of his life."
The Stock Yards National Bank, Chicago's replica of Independence Hall;
A. Epstein, Structural Engineer.
The Paramount Theatre and Office Building, Times Square, New York City;
C. W. and Geo. L. Rapp, of Chicago, Architects.
The New York State Roosevelt Memorial, winning design by John Russell Pope, Architect. This Memorial will be built in connection with the American Museum of Natural History, New York City.
AMERICAN BUILDER (Covers the Entire Building Field)

From Our Daily
FOREIGN MAIL

Conducted by Wm A Radford, Jr

Photograph of Cheque from Tsingtau, China, to Pay for 2½ Years’ Subscription to the World’s Greatest Building Paper

Note: For the benefit of our advertisers we will, without charge, translate any foreign language letters referred to us.

FROM MANCHURIA
(Example of Foreign English, exactly as written)

AMERICAN BUILDER:
Your comprehensive proposition is called to the admiration of facilities as we are in a position to handle materials you have written in the journal, you kindly gave us dated on the April 30th, and many thanks.

If you will kindly furnish us with the best quotation C.I.F. American port, or submit specifications on the attached papers we cut down, with which we see exceedingly induced by your advertisements, we shall make special efforts to initiate business with your esteemed firm.

We are interested in all merchandise which can be marketed in this territories, also we have been close connection with those American goods, Standard Varnish, Certain-need production, Farm Machine of International Harvester Company. Leather Belting of Granot & Night Co. Electric Apparatus of International General Electric Company, and already established a gratifying receptions among the Chinese men. We are particularly interested in goods the sale or purchase of which assures a large yearly turnover. We enjoy very close connections with manufacturers whom a reputation of integrity have been as well founded in your country, and have unexcelled facilities for producing business and satisfying the firms we represent. We solicit the privilege of your correspondence, being perfectly satisfied to allow continuations of business to be determined by our ability and by result shown in trial transactions.

Your prompt reply will be greatly appreciated, and we remain, yours faithfully, 

FROM INDIA

Am. Builder: We are in the market for cut iron and galvanized nails, also stop sinks, sewer pipe, clothes dryers and washing machines as checked on your inquiry sheet. (Signed) Moeahim ABDULQASER, No. 8, Begumpura Street. Bajawali Pole Box. Dealer.

AMERICAN BUILDER: We are deploring the fact that such a high grade publication is not printed in Spanish, although I have told them many times it would simplify matters considerably if they themselves would study and learn "U.S." Thanking you for your courtesy, I am Very truly yours,

(Signed) JOSE R. BENGEL. Mechanical Engineer.

FROM CHINA TO THE WORLD’S GREATEST BUILDING PAPER

Tsingtau, China.

AMERICAN BUILDER: We received the AMERICAN BUILDER of November, 1924, with many thanks. Enclosed please find cheque for $10.00 as subscription, to start it, 1925. (Signed) E. W. Battersby, Master.

It is interesting to note that this check is made out in favor of the World’s Greatest Building Paper, for which the American Builder evidently enjoys in the Orient the same as in the United States.-Envoy.

TRANSLATES OUR LETTER INTO PORTUGUESE

FROM AUSTRALIAN ARCHITECTS

Brisbane, Australia.

AMERICAN BUILDER: We have received a copy of the American Builder, for which we thank you very much. We find this a very fine publication and it has found a prominent position in our library, as we are sure much of the information contained therein will be of great benefit to us in our work.

We also thank you for your offer for getting any information from American manufacturers for us.

(Signed) T. R. Hall and C. G. PRENTICE, Architects and Real Property Valuators.

FROM BURMA

Rangoon, Burma.

AMERICAN BUILDER: We are in receipt of your letter of May 4th and also copy of your nice building paper. I went through the papers of this whole number and found it so interesting that I presented the sample to the library of our Engineers Club, where I am sure it is appreciated by the members directly interested in construction purposes.

I am also sending you a list of our club members who are interested in construction work. I think it would be advisable for you to send a letter to each writer in the Portuguese language and to assist you I have translated your letter to me into Portuguese. I suppose you could use it as a circular letter to the engineers on list enclosed.

I myself am interested in agricultural and industrial machinery, being a member of the Committee on Railways and Highways. Will you be kind enough to put me in touch with any maker of good material for railroad construction and equipment that you feel confident of? (Signed) SAMUEL PORTAIL, Jr.

FROM VENEZUELA

Caracas, Venezuela.

AMERICAN BUILDER: Receipt is hereby acknowledged of your June magazine which has been preserved for reference. The Consulate will be pleased to receive copies of the American Builder any time. (Signed) DAVID C. MCDONOUGH, American Consul.

FROM GERMANY

Berlin, Germany.

AMERICAN BUILDER: We have received your letter together with sample copy of the AMERICAN BUILDER, the valuable and extended contents of which we have read with great interest.

We thank you for your special offer permitting us to use the information contained in your publication which we will do as occasion permits. Kindly send us your regular subscription blank at the earliest possible date at $4.50 per year.

(Signed) Dr. Rech & KIENZEL, Doktor-Ingenieur.

AMERICAN BUILDER: We have received a copy of the AMERICAN BUILDER, for which we thank you very much. We find this a very fine publication and it has found a prominent position in our library, as we are sure much of the information contained therein will be of great benefit to us in our work.

We also thank you for your offer for getting any information from American manufacturers for us.

(Signed) T. R. Hatt and C. G. PRENTICE, Architects and Real Property Valuators.
Construction Uses of Short Lengths of Lumber

Report of Survey by Department of Commerce and Central Committee on Lumber Standards

By F. Y. DAWSON, Special Agent

As a part of the program of the American Lumber Standards a survey of the Construction Uses of Short Lengths of Lumber was made by the Department of Commerce and the Central Committee on Lumber Standards to determine the practicability of buying short lengths of softwood yard lumber for use in the construction of small and medium sized houses of lumber construction. A preliminary report was made at the May 1, 1925, General Lumber Conference in Washington.

This study shows that in twenty houses, taking 46,842 pieces of lumber:

- 32.70 per cent of the lumber is under 8 feet
- 10.90 per cent of the lumber is under 8-9 feet (both inc.)
- 56.40 per cent of the lumber is over 9 feet

That is, one-third of the lumber, which was delivered to the jobs in long lengths was cut into lengths less than eight feet during the process of construction while an additional eleven per cent was cut into eight to nine foot lengths.

Data and charts prepared by the National Lumber Manufacturers Association and presented at the May 1, 1925, Lumber Conference show that 5.3 per cent or about 1,350,000,000 feet of the total softwood yard lumber produced is under 8 feet and 6.6 per cent or approximately 1,680,000,000 feet is from 8 to 9 feet. The National Lumber Manufacturers Association further reported that lengths less than 8 feet can be purchased at an average reduction of about $6.00 per thousand for common lumber and about $12.50 for select lumber, these prices being f. o. b., mill.

Additional quantities of short lumber, mostly 8 feet and under aggregating about 4 per cent of our total softwood yard lumber production, might be saved by manufacturers if it were salable. Thus it is obvious that the purchase of short length lumber would result in national economy through closer lumber utilization as well as a saving in the price.

The possible exceptions to the use of short lumber, are joist and rafters. However, a saving of from 6 to 8 per cent can be made in these items if odd lengths are made standard.

Softwood flooring should be made in multiples of 16 inches, especially that under 8 feet, and end matching would be an advantage.

It was found that 89 per cent of the lumber delivered to the job in lengths of from 8 to 16 and in some cases up to 22 feet was cut into shorter lengths by the carpenters during the process of construction.

Experienced builders were found to have worked up their material very closely and what was left over was moved to the next job. Waste occurred with inexperienced builders or carpenters who built only one house and had no place to use their left over.

Four districts were selected in which this survey was conducted, namely: Washington, D. C., Philadelphia, Chicago and Kansas City. Houses in Washington and Kansas City Districts were within the city limits. Those in the Philadelphia district were at South Ardmore, Pa., and Haddonfield, N. J. In the Chicago district they were located at Hammond and Gary, Ind.

The program of work limited the survey to lumber houses, that is those using siding, shingles, stucco, or brick veneer over lumber. In the two Eastern districts it was found that this limitation confined the survey to practically one size house which was a six room and bath dwelling. When a more pretentious house is desired, brick, stone or tile is used. In the Mid-West district larger lumber houses are built. The largest was found in Kansas City.

Grouping of Material

The material of the houses was divided into ten main groups and one
miscellaneous group. Only one group was considered at a time when taking measurements. The groups were taken in about the order of erection as follows:

1. Joist including joist, sills and girders when built up.
2. Studding which are all exterior and interior studs, plates, heads and cripples.
3. Rafters including show rafters or barge boards.
4. Sheathing including that used on dormer windows and all other vertical walls.
5. Roofing including roof boards and shingle strips, except ceiling over eaves.
6. Sub-flooring including that used in bath rooms and all other vertical walls.
7. Siding including drop and bevel.
8. Flooring including all interior top floors where made of soft wood.
9. Sub-flooring including that used over eaves of houses and elsewhere.
10. Miscellaneous including all other softwood lumber not mentioned above.

No inside trim, window or door frames, porch columns, stair trim, or other millwork or hardwood floors were considered; they being otherwise covered. It was observed that only two jobs used mill-made columns and that two of the builders made their own window and door frames. All cellar door and window frames were made on the job with but one exception.

Table No. 1 shows:
(a) The percentage of board feet in lengths up to and including 7 feet 11 1/2 inches (under 8 feet).
(b) 8 to 9 feet (including both).
(c) 9 feet 3/4 inch and over (over 9 feet).
(d) Comparison of percentages in East and Middle West.

Joist
It is feasible to purchase short lengths for use in the construction of small and medium sized houses in every item with the possible exception of joists and rafters. In some short lengths can be handled to better advantage. Joists and rafters being load carrying members or beams with definite spans, the former governed by the size of the rooms and width of the building, the latter by the size and shape of the roof will not allow of the use of shorter pieces unless odd lengths are furnished. The ends of the joist are usually lapped on the gider or bearing plate as shown on Photo No. 1. It is claimed by some builders that this lapping adds strength to the structure but as these laps were not spiked together on any of the houses surveyed this claim is doubtful. One house had 12 per cent waste by lapping of joist. Most of the waste could have been avoided had odd lengths been available.

An example of odd-lengths use was cited by a Washington builder as having taken place in 1914 where there were a large number of houses being built on lots which were 17 feet wide, the houses being built in a row with party walls between and the length of the joist and rafters being about the width of the lot, or 17 feet. These joist and rafters had been cut from 18 foot lengths with a loss of nearly 6 per cent until an enterprising lumber dealer procured 17 foot lengths. By so doing he saved the builder and the ultimate owners many dollars, while at the same time he expanded his business greatly on these lengths.

Uses of Short Lumber

Photo 4—Short Sheathing and Studs Can Be Used Just as Well as Long Ones Between Windows.

TABLE 1

<table>
<thead>
<tr>
<th>% B. F.</th>
<th>% B. F.</th>
<th>% B. F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 9 Ft.</td>
<td>8 to 9 Ft.</td>
<td>Under 8 Ft.</td>
</tr>
<tr>
<td>Joist</td>
<td>84.41</td>
<td>4.25</td>
</tr>
<tr>
<td>Studds</td>
<td>26.92</td>
<td>26.22</td>
</tr>
<tr>
<td>Rafters</td>
<td>75.00</td>
<td>5.34</td>
</tr>
<tr>
<td>Sheathing</td>
<td>47.50</td>
<td>6.87</td>
</tr>
<tr>
<td>Roofing</td>
<td>61.74</td>
<td>9.32</td>
</tr>
<tr>
<td>Sub Floor</td>
<td>74.49</td>
<td>4.04</td>
</tr>
<tr>
<td>Ceiling</td>
<td>50.53</td>
<td>8.09</td>
</tr>
<tr>
<td>Rafting</td>
<td>39.28</td>
<td>6.17</td>
</tr>
<tr>
<td>Sub-flooring</td>
<td>1.57</td>
<td>22.98</td>
</tr>
<tr>
<td>Porch Floor</td>
<td>86.24</td>
<td>9.78</td>
</tr>
<tr>
<td>Flooring</td>
<td>44.88</td>
<td>6.51</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>57.70</td>
<td>14.41</td>
</tr>
<tr>
<td>TOTAL AVERAGE</td>
<td>35.40</td>
<td>10.90</td>
</tr>
</tbody>
</table>

Comparison of Percentages used in Eleven Houses in the East and Nine in the Middle West

<table>
<thead>
<tr>
<th>% Over 9 Ft.</th>
<th>% 8-9 Ft.</th>
<th>% Under 8 Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>Mid-West</td>
<td>East</td>
</tr>
<tr>
<td>85.37</td>
<td>85.15</td>
<td>84.08</td>
</tr>
<tr>
<td>36.49</td>
<td>21.80</td>
<td>21.35</td>
</tr>
<tr>
<td>78.73</td>
<td>67.68</td>
<td>5.10</td>
</tr>
<tr>
<td>54.61</td>
<td>40.52</td>
<td>5.38</td>
</tr>
<tr>
<td>59.08</td>
<td>63.46</td>
<td>11.37</td>
</tr>
<tr>
<td>74.39</td>
<td>74.41</td>
<td>3.32</td>
</tr>
<tr>
<td>52.87</td>
<td>44.45</td>
<td>5.47</td>
</tr>
<tr>
<td>45.11</td>
<td>35.41</td>
<td>4.84</td>
</tr>
<tr>
<td>0.00</td>
<td>3.57</td>
<td>20.00</td>
</tr>
<tr>
<td>67.75</td>
<td>75.09</td>
<td>1.94</td>
</tr>
<tr>
<td>64.99</td>
<td>55.25</td>
<td>11.74</td>
</tr>
</tbody>
</table>

TOTAL AVERAGE | 54.50 | 50.53 | 54.50 | 50.53 | 8.54 | 11.48 | 36.69 | 37.91

Photo 3—Here Is an Example of 7-Foot 11 1/2-Inch Studs and Short Length Sheathing.
In the case of rafters there being no chance of lapping as in joist the ends were cut off. One house observed required 16 foot 6 inch rafters which were cut from 18 foot lengths with a waste of 1.5 board feet per rafter or 8.3 per cent. A 17 foot length would have reduced this loss to 2.95 per cent, or a gain of 5.38 per cent. Roofs that are broken, such as hip, Jirkenhead and valley, require more short lengths than the plain gable roof. As the former generally have a better appearance than the latter it would be well to encourage the building of those types in preference to the latter.

Where gable roofs are built the use of dormer windows would lead to the use of more short lengths.

Studding

There was found to be considerable difference in the length of studding in the Eastern districts and the Mid-West. This was due to three causes:

(a) Ceilings were higher in the East.

(b) Roofs were plainer in the East requiring less gable studs.

(c) Balloon framing was extensively used in the East (See Photo No. 2), with two story studs while the platform type construction was used in the Mid-West using one story studs (See Photo No. 3).

On several of the balloon framed buildings all of the outline studs were set up full length, the window and door openings being cut in after sufficient sheathing had been nailed on to support the short pieces. (See Photo No. 4). The short pieces that were cut out were used in the openings where possible for heads and short side studs. (On one house 27 per cent of these full length studs were cut.)

In the other type of balloon framing all of the studs were cut accurately to length before assembling, thus making it possible to use short lengths over and under openings. The platform type (see Photo No. 3), used the greatest amount of shorts but it was observed that these pieces (usually 7 feet 11 inches—8 feet) were cut from 16-foot lengths as shown in Photo No. 5.

Two builders wished to know why standard length studs were not made the same as are standard laths, window and door frames and other parts. They said that as studs are already trimmed at both ends a step further should be made by trimming them to a standard length so that when delivered on the job it would be only necessary to nail them up. As window and door frames together with the spacing of studs are already standard, door and window heads, studs and cripples could be cut to standard lengths.

If standard length studs were used the height from one floor to the next would be standard thus allowing the use of standard stair framing.

These standard lengths would probably be 7 feet 9 inches, 8 feet 3 inches, 8 feet 6 inches, this being a sufficient range to cover houses as usually constructed. This would insure better construction as it is well known that a cut-off saw will trim more accurately than a man with a hand saw.

Sheathing

The place where a large number of short lengths were utilized was in sheathing, as a large percentage of the long lengths delivered on the job were cut to go between window and door openings as shown on Photo No. 1.

One house in Washington was sheathed and roofed with car roofers. These standard lengths would probably be 7 feet 9 inches, 8 feet 3 inches, 8 feet 6 inches, this being a sufficient range to cover houses as usually constructed. This would insure better construction as it is well known that a cut-off saw will trim more accurately than a man with a hand saw.
were 1 by 6 matched 5 feet 1½ inches long (see Photo No. 6), the studs being especially spaced to take this length. After this was on the builder was asked how he made out, he said, "Say, do you know, I saved money on that job. Those roofers were so bundled that one man could easily handle them and they went on just like laths. I'm ordering enough for three more houses I'm building." Another house in Kansas City was sheathed with Byrkit laths which were 1 by 6 to 4—8 feet long the majority being about 6 feet.

The waste due to laying sub-floor 45 degrees to the joist was estimated by different builders to vary from 5 to 20 per cent. No one seemed to know how much extra, to order over the square measure of the floor. The general rule was to "order plenty." A careful laydown of 8-foot sub-floor on approximately the plan of house No. 20 shows:

<table>
<thead>
<tr>
<th>Loss</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss where laid 90° to joist</td>
<td>3.62%</td>
</tr>
<tr>
<td>Loss where laid 72½° to joist</td>
<td>3.62%</td>
</tr>
<tr>
<td>Loss where laid 45° to joist (With square butts)</td>
<td>8.40%</td>
</tr>
<tr>
<td>Loss where laid 45° to joist (With diagonal butts)</td>
<td>14.50%</td>
</tr>
</tbody>
</table>

The reason for including 72½ degrees is that one builder in Gary laid sub-floors at this angle on about three hundred houses for the Gary Tube Works. The inspector on these houses stated that the top floors laid over sub-floors at this angle were more satisfactory than some that were laid over a 45 degree sub-floor. This method due to the slight angle used no more material than if laid at 90 degrees to the joist with the advantage of having the top floor cross the joist of the sub-floor as in the case of the 45 degree. The above estimates do not take into consideration losses due to surfacing edges.

Porch Flooring

Porch flooring shows the greatest percentage of short lengths used. There is only a small amount of this used and most of which was selected from flooring used in the interior. There was some objection to using butt joints in porch flooring due to the liability of their retaining moisture, thus causing decay. As most porches were about 8 feet wide it would seem inadvisable to purchase this in shorter lengths.

Ceiling

More short lengths were used in ceiling than in any other item, as a large number are used over projecting eaves of buildings. Photo No. 9 shows part of four hundred pieces 15 inches long which were cut from 18 feet lengths of Douglas Fir. The practice of cutting these short lengths was common with nearly every job surveyed, though the lengths cut from were usually from 8 to 16 feet. Photo No. 7 shows a workman nailing these short pieces to rafters. One builder used 8 foot car siding for ceiling. He said, "I like this because it is accurately cut to length and I can nail

Sub-Flooring

Another place where short lengths could be utilized was in sub-flooring, for though the percentage of short lengths shown in the table is not high it is due to the fact that sub-flooring and sheathing were usually from the same pile. The sub-floor being laid on a surface with few openings will accommodate long lengths and as it is usually laid before the sheathing, the left over ends were reserved to use as sheathing between windows. The possibilities for the use of short lengths in sub-flooring is shown on Photo No. 8 which shows some of the 30 pieces of 1 by 8 by 16 inches laid in one floor. There were also as many more pieces each 32 and 48 inches.
Use of Short Lumber

In the two houses stair carriages or horses were made by nailing triangular E blocks which were cut to the proper angle to give the required pitch on one edge of a 2 inch by 4 inch. These blocks were cut from ends of 2 inch by 6 inch with little waste as they came from alternate sides of the piece. When carriages are cut from solid dimensions the pieces or “points” are wasted.

The percentage of loss of solid over built up is as follows for one carriage:
(a) Cut from solid 2” by 10” by 18” = 30 board feet
(b) Using one 2” by 4” by 18” = 12 board feet

Using one 2” by 6” by 7’ 6” = 7½ board feet... 19.50 board feet
Total loss... 10.50 board feet = 35%

Belt courses and cornice boards were usually selected from sheathing and roofing material as it was found there was a sufficient number of pieces good enough to be used for this purpose. Stair platforms were constructed from ends of sheathing and roofing and in two cases from ends of flooring. Stair platforms were constructed from ends left from studding and sheathing.

Table No. 2 shows for each house the average length of each item tabulated, and for all the houses, total average length, and number of pieces per item.

Table No. 3 gives the (a) builder, (b) location, (c) type of house, (d) number of rooms, (e) size of foundation and price of house not including lot.
LIME is one of the most ancient of the known building materials and has a very interesting history. Indeed, its use is so old that evidently it was known long before recorded history. Evidences of the use of mortar are found, not only in the older countries of Europe, Asia and Africa, but also on the Western Hemisphere, where the remains of works of ancient artisans show its use. These ruins prove the enduring qualities of the material as well as the skill of the workmen.

One writer considering the possible discovery of lime declares it possible that some savages, having used stones composed of lime rock to confine their fire, noticed that the stones were changed by the action of the heat. He believes it possible that a passing shower slacked the lime to a paste and the discovery was made that the paste was smooth, easily worked and made a better material for filling up the cracks and crevices in the crude dwellings of the savages than did the clay they had been using.

The ancient pyramids of Egypt reveal one of the earliest uses of mortar. Vicat in his work on "Mortars and Concrete" states:

"The Egyptian monuments present without a doubt the most ancient and remarkable examples which we can cite of the use of lime in building. The mortar which binds the blocks of the pyramids, and more particularly those of the Cheops, is exactly similar to our mortars in Europe. That which we find between the joints of the decayed buildings at Ombos, at Edifi, and in the Island of Phila, and on other places give evidence by its color, of a reddish, very fine sand mixed with lime in the ordinary proportions."

Lime mortar used for binding bricks and other masonry units differs from the lime used for interior plastering only slightly, the main difference being in the plasticity of the mortar. Some of the finest interiors of ancient Rome and the interiors of religious structures, where the height of Renaissance construction was reached, were of plaster which endures to the present day.

As stated in previous articles in this series, plaster, to give that satisfactory and durable service which has proved it to be the most pleasing and utilitarian interior finish yet known, should be three coat work on a proper and permanent base.

This applies with equal strength to lime as to the other plastering materials in common use. It is worthy of repeating and remembering that no matter how high grade the materials and how careful the workmanship, only three-coat work on a permanent base will produce the best wall.

Lime for plaster now is most generally used in two forms: quick-lime which requires slacking, careful preparation and aging on the job, and hydrated lime. Ready mixed lime mortar is also now available in some cities from central mixing plants and is delivered on the job ready to be applied to the walls.

Lime, used in plastering, is a chemical combination of calcium and oxygen. Lump lime, or quick lime, is made by taking limestone, chemically known as calcium carbonate, and burning it in a kiln. The limestone crumbles and disintegrates, losing a gas in the process that leaves the product of the kiln in the form of an oxide of calcium or quick lime. However, in this state it is very susceptible to...
the influence of moisture and air and has a tendency to resume its original form, so it must be protected against moisture and contact with the air.

For lime plastering, the plasterer begins with this product of the kiln—quick-lime—and takes it through a series of operations by which it reverses the decomposing or breaking down process ending at the kiln, so that on the wall the setting element of the plaster proceeds to resume, as nearly as it can, its original state, namely limestone.

The first operation is quite simple and is called “slacking,” which is done merely by adding water to the quicklime. From this slacking process is produced lime putty which is the basis of all lime plasters. (The use of hydrated lime in producing lime putty will be described later.)

Lime putty produced from quick-lime must be of the correct stiffness and must be free from lumps which are lime that has not been disintegrated and thoroughly combined with the water. An additional precaution must be taken in that this putty must be aged so that the chemical process are completed before it is used on the walls. This aging varies with different limes and must be learned by experience with the lime used.

Ordinarily in slacking lime, enough water is added to produce a thick paste after the reaction of slacking is completed. Sufficient water should be used in order that it may come into contact with all parts of the lime. If too little water is used some parts of the mass become dry and are “burned” in the process. “Burned” lime works tough and non-plastic in the mortar. If an excess of water is used slacking is retarded and the paste is thin and watery. This is known as “drowned” paste.

A quick slacking lime requires a large amount of water and this must be added quickly and the lime must be turned over rapidly so that the water may get to all parts and there will be no “burning” from the temperatures generated by the chemical reaction. Slower slacking lime requires less water and in their use, care must be exercised to avoid “drowned paste.”

The amount of water to be used in slacking varies with the lime. The quick slacking limes, known as high calcium limes, usually take from 28 to 32 gallons to a barrel of lime, while the slower slacking limes, known as dolomitic limes, average about 24 gallons to a barrel. These figures, however, can be only accepted as approximate.

The necessity for allowing time for aging after slacking is due largely to the fact that all limes contain some over-burned particles or some which have combined chemically with silica or clay in the limestone. These particles slack very slowly.

A rule which comes from the ancient Romans will be interesting and possibly instructive to the workman. Vitruvis burned particles or some which have combined chemically and clean, it will show that the lime is weak and thirsty, but when it is rich and properly slacked, it will stick to the tool like glue, proving that it is completely tempered.”

Hydrated lime differs from quick-lime in that it has sufficient water added to satisfy the calcium oxide. This product arrives on the job in the shape of powder and from it lime putty is made by adding sufficient water so that standing over night it will produce a stiff paste. No heat is generated in this process and therefore there is no danger of burning. Also there is no danger of lumps or unslacked lime in the putty. From this point the treatment of the lime putty is the same for both products.

There now remains to be considered the manner in which this lime putty is to be mixed for application to the walls of different types. In the Standard Specifications for Lime Plaster, from which the following information is taken, it is specified that:

“The mortar shall be a mixture of lime, paste or putty, prepared from properly slacked quick-lime which has been allowed to age, either neat or sanded for at least three days, or hydrated lime with sand” in the proportions given for each type of wall.

In giving the proportions for the various types of work, those for the brown and scratch coats will be given now while the various types of finishing coats, which may be applied to any of the base coats, will be treated later.

For two-coat work on wood lath known as double-up work, since the brown coat is applied immediately after the scratch coat, grounds of five-eighths inch are specified. For the scratch coat is mixed: stiff lime putty one part by volume, plastering sand two parts by volume, hair or fibre one and one-half bushels per cubic yard of sand. The brown coat of mortar applied is composed of one part of stiff lime putty by volume to three parts of plastering sand.

The first coat of mortar is applied with sufficient pressure to insure a good key at the back of the lath then the plaster is brought out to grounds by double-up work. The rod and darby are used to bring a true even surface for the finishing coat. It should be observed in passing that two-coat work is never recommended on wood lath except on one-fourth inch. Where economy is desirable, two-coat work on certain types of ribbed metal lath is preferable as the plaster covers the lath only one-fourth inch. Where economy is desirable, two-coat work on certain types of ribbed metal lath is preferable as the plaster covers the lath only one-fourth inch. Where economy is desirable, two-coat work on certain types of ribbed metal lath is preferable as the plaster covers the lath only one-fourth inch.

One-coat work with plaster lath is not to be recommended as the surface is not as good as two-coat work in finishing coat. Therefore for one-coat work on wood lath except that the first coat of lime putty is applied, its specifications are the same as for two-coat work on wood lath, except that the hair or fibre is added in the proportion of one bushel per cubic yard of sand. The brown coat is the same as for the two-coat work on wood lath except that here one-half bushel of hair or fibre is used to each cubic yard of sand. The grounds for this work are seven-eighths inch.

The scratch coat is applied one-quarter inch thick, care being taken to insure a good key at the back of the lath. As soon as this coat has become firm, but not fully dry or hard, the entire surface should be scratched diagonally, deep enough to provide a good bond for the following coat but not deep enough to injure the keys. The

The The First, or Scratch, Coat of the Plaster Should Be Applied Firmly, to Insure a Good Key with the Lath.
second coat is applied when this coat is dried, and used to bring the plaster out to the grounds. This coat should be well worked and the surface, although brought to a true even plane for the finish should be left sufficiently rough to insure a good bond with the last coat, which is applied when the brown coat is dry. The same specifications are given for three-coat work on wood lath, excepting that less hair or fibre is needed in the scratch coat, and more in the brown coat.

Sometimes, it is found advisable to use gauged lime plaster. This is especially true of three-coat work on metal lath where the lath is furred out on metal furring. In such cases, it is preferred that the lime, putty, sand and hair be mixed thoroughly by machine if possible. When hydrated lime is used, the materials may be mixed by hand if desired. Just before the order is delivered to the plasterer, the proper amount of gauging should be added and well worked in. No more plaster should be gauged at one time than can be applied within one and one-half hours after it is added. The proportions for the scratch coat for this material are as follows:

The stiff lime putty eighty per cent, gauging cement twenty per cent, one part by volume, plastering sand two parts by volume, hair or fibre one bushel per cubic yard of sand. When the finish coat is applied, the mixture is gauged with water to give a mixture one part by volume. The plaster should be applied to seven-eighths inch ground. The first coat should be applied by one-quarter inch thickness with sufficient moisture to make a good bond. As soon as this coat has become firm, but not fully dry, the surface should be scratched as described previously for three-coat work. When the first coat is hard, the second coat is applied. This is applied to bring the surface out to the ground. It is important that this coat should be well worked. When the second coat is dry, it is ready for the finish coat. For two-coat, doubled-up work on brick, tile, gypsum block and like surfaces, the proportions are: stiff lime putty one part by volume and plastering sand two parts by volume and hair or fibre to be added at the ratio of one-half bushel per cubic yard of sand.

The plaster should be applied to seven-eighths inch ground. The first coat should be applied by one-quarter inch thickness with sufficient moisture to make a good bond. As soon as this coat has become firm, but not fully dry, the surface should be scratched as described previously for three-coat work. When the first coat is hard, the second coat is applied. This is applied to bring the surface out to the ground. It is important that this coat should be well worked. When the second coat is dry, it is ready for the finish coat. For two-coat, doubled-up work on brick, tile, gypsum block and like surfaces, the proportions are: stiff lime putty one part by volume and plastering sand two parts by volume and hair or fibre to be added at the ratio of one-half bushel per cubic yard of sand.

The plaster should be applied to seven-eighths inch ground. The first coat should be applied by one-quarter inch thickness with sufficient moisture to make a good bond. As soon as this coat has become firm, but not fully dry, the surface should be scratched as described previously for three-coat work. When the first coat is hard, the second coat is applied. This is applied to bring the surface out to the ground. It is important that this coat should be well worked. When the second coat is dry, it is ready for the finish coat.
The Fall-Blooming Flower Garden

This is Number Seven of a Series of Articles

By F. A. CUSHING SMITH, Landscape Architect

WITH the heat of summer come and gone, and with the cool fall days to greet us, we remember with joy the beauties of the June garden, and take new interest in finding new flowers for the fall garden. We need not despair of color and masses of bloom for the September and October days. You need but plan in advance in the planting of your perennials, to provide varieties which will plentifully blossom late in the year.

Among the annual plants which can be depended upon to enliven the fall border are the fine varieties of asters, with their feathery and tight blooms in reds, pinks, white and blue. Phlox if planted late enough can also be depended upon, and the quaint straw-flowers with their papery petals, if hung up to dry just before they reach full bloom, will combine brightly with the dried grasses and weeds which of late have formed the basis for many a cheery fall bouquet.

The perennials, the permanent back-bone of every garden which is to last, also offer much variety in color, habit, height of bloom. To simplify their use, particularly in the fall, the accompanying design for the simple fall blooming garden is suggested.

Outside the living room of our home, is a terrace, enclosed by a low brick wall, upon which we sit of a fall evening having tea. The garden is reached by two low wide steps, and a hedge about the garden gives us further privacy. A turf center down which we can stroll to the summer-house, is bordered at either side with a group of perennials, all of which are flowers which bloom in the autumn.

For those who are at home without a vacation during the summer, the garden borders suggested may be of interest, although it usually proves to be more satisfactory, if the arrangement is carefully studied to give us a continuous bloom throughout the season.

For the hedge enclosure we can well use the Amoor River privet, unless we do not wish a clipped hedge. The Van Houtte's spirea, or bridle-wreath, or perhaps rose of Sharon will also give us an informal, flower-laden hedge,
if they are not to be clipped. A seat at the side of the garden also makes a sojourn there a restful one. Here in quiet peace we can glimpse beneath the rose-covered arch the sun-flecked lawn area beyond, in which the fine old elm and oak bring strength and dignity to the scene.

The summer-house may take many forms, but should harmonize architecturally with the style of the residence. Built-in seats, and a folding table are inviting for tea or luncheon. The tall spicy blooms of the chrysanthemum in yellow and pink clusters, faced with the shorter and more compact white anemone, flank the garden steps at either side of the terrace entrance. Back of the seat at the left, where they will need to be carefully tied up, is a group of pink New England asters, while at either side of the seat, the soft colors of monk's-hood and the mist-flower blend into the greens of the hedge enclosure.

The pink boltonia or daisy, and the white boltonia will help to strongly emphasize the garden corners, and serve as an adequate setting for the summer-house. These plants are especially effective against the dark green of the privet. The white rose-mallow or perennial hibiscus, like the fall blooms of our old favorite, the rose of Sharon forms a pleasing color combination with the aster-like boltonia. At the foot of the rose-covered arch to the lawns are the blue salvia, with its erect and sturdy blue flowers, and we can use either the climax aster or Felt-ham's blue aster to balance the color on the opposite side of the grass walk.

A most attractive color combination is assured with the use of the helenium or sneeze-weed, with the blue aster, for the slender yellow spikes offer a contrast pleasing and striking.

About the garden, and back of the summer-house should be grouped shrubs which will have either attractive blooms in the fall or else twig or fruit characteristics which make them effective in our fall garden. August and September bring blooms in many varied colors to the rose of Sharon, one of the finest of the old-fashioned shrubs. Until then the shrub has been unnoticed and but a green background for the summer blooms. Some seasons the Japanese rose will bloom again in the fall, and at times even the weigelia with its red and pink bells will again burst forth in color.

Fruits may also be inviting at this season of the year. The viburnum family to which the common snow-ball belongs, gives us scarlet fruits on the high-bush cranberry, (Continued to page 182.)

Design for a Simple Tall Garden.
This is all cogitation as your thoughts bounce from the great style, but the roof should have enough formality of house with fairly high eaves will take colonial dormers in ing. So the dormer has become not dormant. A typical half mansard, half hip roof of the old country and are indication. These colonial dormers come from the “top story,” and it is not obtrusive. But run the roof as a gable, long side more of a light than otherwise. It doesn’t imply anything, them to a different use, and their attics were not for sleep-indicative of high walls, narrow streets, and attic rooms. You wonder, perhaps, why such a dormer is put where there is so little headroom. Ergo, it’s an attic. Then why put such a hole in the roof to provide a dormer. This is all cogitation as your thoughts bounce from the flat surface after you have really appraised the house.

When a house is considered the same holds in a slightly different way. One eye is physical and the other mental. You see the outside. Unconsciously you assume the inside. When, as in Fig. 1, there is no character, or reason, or even a suggestion of anything within, then your mental vision registers a blank, and depth is lost. It looks flat. You wonder, perhaps, why such a dormer is put where there is so little headroom. Ergo, it’s an attic. Then why put such a hole in the roof to provide a dormer. This is all cogitation as your thoughts bounce from the flat surface after you have really appraised the house.

Before taking up the large dormer as shown in Fig. 6, the smaller ones should be considered. Start with the bungalow. This type was not meant to be two storied and yet for very sound reasons the attic should be made habitable, that is, lighted and ventilated. The bungalow runs naturally to a low roof, often a hip roof, with a hip roofed dormer at the front. The dormer is small and is more of a light than otherwise. It doesn’t imply anything, and it is not obtrusive. But run the roof as a gable, long side forward, and insert a shed roof dormer, and the attic of the bungalow is given a room about the size of the dormer. A cramped appearance results unless the lines are very carefully thought out. When they are the roof is not of the dormer class.

The dormer in Fig. 1 is common pitched with the roof, narrow for its apparent height from the floor, and of no particular use as regards its size. The siding fits ill against the shingles and it looks misplaced. Fig. 4 shows a decked roof dormer in different circumstances. This is well up from the floor, wider, and lighter in structure. It adds to the roof rather than subtracts. The same thing might be said of the roof and dormers shown in Fig. 5.

Like most folks my own judgments are tinged by tradi- tion. These colonial dormers come from the “top story,” half mansard, half hip roof of the old country and are indicative of high walls, narrow streets, and attic rooms. But the colonials who, as a rule had plenty of ground, put them to a different use, and their attics were not for sleep- ing. So the dormer has become not dormant. A typical house with fairly high eaves will take colonial dormers in great style, but the roof should have enough formality of line to prevent a contrast with the dormers. It may be noticed that the heavy chimney topping the dormers in Fig. 6 has rather too homely an appearance for the roof.

The dormer then should fairly match the roof, and if its face rises from the house wall (as it should have in Fig. 1) it should match the house and roof. It is then a roof pro- jection. Such a projection is not always a dormer, but in its present day use the dormer classes with it. Take the shed roof dormer of Fig. 4. Then drop to the corner case- ments in the same sketch. The extended eaves provide a break and spread in the lines and cover a sort of oriel. Now go down to the bay in Fig. 7, which escapes the oriel only by its lack of corresponding floor space, but sets off the double hip roof and increases the breadth of the wall. You will notice that the comparatively narrow bay, lower roof, and upper roof all unite in emphasizing the main roof. Dormers, windows, and roof shapes are all used for the purpose of putting room location to advantage and taking advantage of windows. Dormers should be put to their very best use, but should be omitted if they are of really no use.

In Fig. 6 there is a long dormer. A miss is as good as a mile so it isn’t a gambrel. The main roof is retained and the house remaining gabled in outline. The house wall is low and the roof high pitched. The class is typical and the dormer is not too big to spoil the roof. If there is one to the rear, so much the better, for their bulk is seldom com- bined when looking at the house and the second floor rooms are well lighted.

So long as the dormer has lost its trade mark of the loft, it should be used with relation to the entire house and not merely as dead-light in the hull of the roof. Framing the dormer is of considerable importance. Weak framing is reasonable for leaky roofs and sagging roofs. The framing shown in Fig. 2 may be unnecessarily heavy but the dormer should be tied up in itself well enough to take the place of the cut rafters. In this same figure the sill could rest on a two by four set up to take the short foot rafters the same as a ridge piece.

The framing may be changed to suit the pitch of the roof, its weight, and probable snow load. A dormer of ordinary breadth will not weaken the roof, but with more than ordin- ary spread means should be taken to insert a well supported plate under the cut rafters as in Fig 6. Partitions in such cases are to be made use of and the dormer roof becomes a secondary roof or truss. The dormer of size must be tied into the roof as well as the roof is tied to the plates since weight subtracted from the main roof is more than made up in the dormer.

Usually the dormer studs are carried down and supported by floor joists. If single rafters are used as trimmers these studs can be set in far enough to allow a seat for the roof sheathing. The sheathing on the dormer wall can be diag- onal as shown in dotted line or level as shown. The first closes the triangle but has less spiking-hold on the studs. The dormer should not depend so much for its strength on its roof or wall sheathing.
Details of Home Building

FIG. 1. GABLE ROOFED DORMER FRAME

FIG. 2.

FIG. 3. DECKED DORMER FRAME

FIG. 4. DECKED DORMER and Casement Corner

FIG. 5. COLONIAL DORMERS

FIG. 6. LONG SHED ROOF DORMER & SECTION

FIG. 7. IRREGULAR HIP DORMER

V.F. Hoffman 2-5-30
Heavy timber detailing has become a specialty. Those who specialize in mill construction have sets of details designed especially to meet their needs. Those who only occasionally are called upon to design buildings of this class usually improvise details as the need develops. This series of plates is intended primarily for this latter class, though its use by specialists as well would help standardize procedure. Its use in the drafting room should save the time of draftsmen and designers and help toward a more widespread knowledge of good practice in timber detailing.

Proper detailing is the essential feature of most types of heavy timber mill construction. The general design may be sound in every respect, but unless the connections are properly proportioned and secured, lack of stability and sometimes actual failure occurs.

These details are based upon a careful field examination of recently erected buildings built in conformance with well established design principles. As a consequence, they reflect current practice in its highest and best form.

As originally practiced in the textile mills in New England, standard mill construction is no longer suitable for the congested areas of our modern industrial cities. Close column spacing, though not objectionable in textile mills, seriously handicaps some other forms of industrial enterprise.

In order to meet the demand for large areas of floor space unobstructed by columns two types of construction are used; the so-called semi-mill construction and laminated mill construction. Neither of these types comply with standard mill construction in every detail.

The details shown in this series, therefore, will cover all of these three distinct forms of heavy timber mill construction. Many more useful details could be added but those given are representative and clearly depict the fundamentals of the various types. If kept available for quick reference in the drafting room, a great deal of time may be saved and aggravating uncertainty eliminated.

Reference Data

The following general principles of proper detailing of heavy structures should be observed by the designer and draftsmen:

1. The method of framing girders is important. Sometimes double beams with an air space are substituted for the closely bolted girders shown in these details. The idea of the air space is to facilitate drying and thereby prevent the rotting of the timber. It more frequently does just the other thing, that is, makes a culture chamber for fungus and also encourages the progress of a fire where it is impossible to get at it and where it can quickly weaken the entire frame of the building. Where it is impossible to get beams sufficiently large in a single section to carry the girder loads, it is generally considered better practice to bolt them solidly together than to leave a small air space.

2. Post caps of structural steel are sometimes used. These caps when they support the entire load of the girders make the building no better than one with a structural steel frame. Whereas, when the columns are carried through the floor with iron pintels with the beam supported largely on the column below, the slow-burning qualities of the heavy timber are more fully utilized. But, as a matter of fact, many of these structural steel details are thoroughly tried out due to the fact that with complete automatic sprinkler protection the structure is rarely exposed to sufficient heat to test it seriously.

3. The corbeling of the brick work about the edges to make a tight joint between the wall and floor prevents the shrinkage of the plank floor leaving a wide crack next to the wall which can quickly carry a fire from floor to floor. Drafts in this position can cause the rapid burning off of ends of supporting timbers. This is a matter worth emphasizing to show that the tightness of this joint is of more importance than simply the support of the floor planks. It should be noted that clearance has been allowed next to the wall to provide for swelling of floor.

4. A detail of an interior floor drain is shown. Such drains are sometimes used instead of a scupper. They have certain advantages and are an acceptable alternative.

5. It should be noted that the supporting girders are not bolted to the wall plate. Such girders should be self-releasing and, as indicated, held in place by a rib in the bottom of the plate fitting into a groove cut into the girder.

6. Attention is called to the importance of providing suitable protection for belt and shaft openings in walls and floors. The installation of swing and sliding tin-clad fire doors and windows should be given careful consideration. Room enclosures for electric motors and dynamos should be provided. Steam pipe protection, protection of beams under bearings, location of hose pipe casings for cellar pipe, location of stock racks to keep sprinklers free, interior insulated shutters for severe exposures—all of these items have an important bearing on fire safety. Booklets covering these features may be obtained from the Inspection Department of the Associated Factory Mutual Fire Insurance Companies, Boston, Massachusetts, under the following titles: Rules for Installing Sprinkler Equipment; Specifications for Tin-clad Fire Doors and Shutters; Belt Fires (Experience showing the urgent need of, and suggestions for providing non-combustible sprinkled enclosures for main belts).

NOTE: Dimensions are given whenever they are of significance in the practical application of the detail.

Plate 2 of this series will appear in the October American Builder.
Mill Construction

STANDARD MILL CONSTRUCTION

MILL CONSTRUCTION DETAILS—PLATE No. 1

T HE entire building field—and home building in particular—is, to our way of thinking, the sweetest, cleanest, most satisfying of business activities. It benefits all parties to the transaction and is a constructive, creative force in every community, making for prosperity, wholesome enjoyment and good citizenship.

The family that is building or acquiring a new home becomes more thrifty, more contented and better neighbors.

The builders are kept busy in a productive way, which in turn gives steady employment to the building trades workers, moves the stocks of goods out of the dealers' yards and stores, and keeps the factory wheels turning.

This all spells prosperity; and it has its origin, its start in the building of homes and other structures.

But back of the actual construction of the new home always must come the forming of the desire for the home, because home building costs money and for most of us means real sacrifices, other things done without and consistent savings laid away over a period of years, before the home building enterprise can be safely undertaken.

In this work of building up the home owning and home building sentiment the entire building industry should cooperate and work together, and it is very gratifying to the American Builder to see the fine spirit of team-work which builders, dealers, real estate men, bankers and manufacturers are demonstrating in many communities.

We ourselves are contributing a very large factor to this work of creating home building desire by publishing every month in this department these sixteen pages in full colors. These designs are selected so well and are illustrated so beautifully that every taste is appealed to. There are homes here of every size and popular style; and these designs in the hands of the active men of the building field, both builders and dealers, are brought to the attention every month of thousands of prospective home builders. Some of these home builders are ready to go right ahead at once. Others are more remote prospects; they are in the beginners' class; and it may be two or three years before they get around to the point of breaking ground. But these beautiful home designs are having their effect all of the time, making home building attractive and keeping the idea alive.

In the same way we know that a great many of the manufacturers of building materials and building specialties have gone to large expense in the production of beautifully illustrated catalogs and circulars and display advertising which has a strong popular appeal and which promotes the idea of home building in a broad, constructive way, in addition to giving specific information about the particular material or commodity offered.

Check through the advertising pages of this magazine and take note of all the different concerns that are offering samples and books, catalogs and circular matter calculated to interest the home building public. Write to these manufacturers; you will be surprised and pleased at the help they stand ready to give you in your big job of selling, planning and constructing homes and other buildings.

We know of no other industry that offers the public so much free information. The manufacturers of the building field are certainly doing their full share. Booklets and illustrated circulars are sent direct to the general public and a large variety of catalogs and booklets have been prepared for dealers to use and to distribute. Every man directly engaged in building, whether a dealer, a contractor or a real estate builder has the opportunity to make his office a headquarters for reliable information and persuasive sales literature of interest to prospective home builders. Books of home designs are available and handbooks and catalogs can be secured. Many of the manufacturers advertising in the American Builder are glad to furnish neatly prepared samples which can be made into an interesting display.

We believe that every builder's and dealer's office should be a service station and a center of information where those thinking of building can easily turn for free and helpful information and advice. We do not think there can be too much information or too many boosting for such a good thing as home building, or too many well equipped with all the latest information.

The lumber dealer is in many places the most logical center for the distribution of home building ideas and information. The people naturally turn to their local lumberman when thinking of building; and his office and salesrooms are the natural meeting place for contractors and home builders.

We know of hundreds of lumber dealers in every state who have equipped themselves with plan books and other helpful material calculated to increase the public's interest in home building. Among these probably the best liked are the 12-sheet poster calendars in beautiful colors illustrating modern homes, and similar calendars illustrating farm buildings. Also there are monthly magazines of home designs in colors for distribution among those about to build. The best lumber dealers are distributing these calendars and home design magazines, and they are creating business which benefits the entire building industry.

Building contractors, carpenters, real estate men and investment builders will do well to co-operate wholeheartedly with the dealers who are spending their money to distribute this beautiful and persuasive home building literature. The home building and home owning idea is being sold to your community and business in time is sure to result. American Builder readers are armed with similar good home selling ammunition in every issue of this magazine—in our 16-page Homes in Colors section. We hope you are using these beautiful designs to the utmost.
The Lawton

A dignified Colonial home of six rooms with garage to match. Color sketch above shows well furnished dining room.
The Lakeside

A DELIGHTFUL English cottage of seven rooms—a very artistic design. Color sketch suggests convenient kitchen arrangement.
The Lewiston

A Straight gable Colonial home of six rooms, square in outline. Color sketch above shows bedroom with modern furnishings.
The living room in a New England Colonial home, furnished for comfort.

The marble mantel extending from floor to ceiling and almost filling the end of the room, is the feature of this living room in the Italian style.
A living room with old English beamed ceiling and interestingly furnished.

The wood paneling and the open bookshelves give an air of restful quiet to this living room library.
The Lexington

The Lafayette

A BRICK house in the French cottage style containing five rooms and bath very well arranged. Color sketch above suggests the interesting decorative and furnishing scheme for one of the bedrooms.
The Linwood
Sketch above and floor plan to right illustrate this delightful Colonial bungalow of five rooms.

The Lehigh
Sketch below and floor plans to left show this English type home of five rooms.
The Lincoln
Sketch above and floor plans to right show this attractive narrow lot home, 22 x 28 feet.

The Liberty
Sketch below and floor plan to left show this English cottage of four rooms, but with five-room efficiency.
The Lamar

HOME designs of the Spanish type continue to intrigue the architects and builders and to arouse the enthusiasm of the home-buying public. Constructed of stucco in warm colors and with antique tile roofs in yellow and red, these homes of Spanish lines give indeed a new look to the suburban landscape.

The Lamar is a five-room and bath bungalow, though the patio enclosed on three sides really becomes another room and will be, in most places, a very much used part of the home.

This house measures 30 x 60 feet. The living room and dining room have the prominent position at the front; the kitchen is conveniently placed in the middle, directly back of the dining room, which leaves all of the back of the house for the two bedrooms and bath. This arrangement assures privacy and quiet for the sleeping rooms.

The color sketch above shows an interesting treatment for the high ceiling of the living room with open rafters in the provincial style. The big fireplace with flanking bookcases fills one end of the room.
The Lawndale

A PRACTICAL home of the square, hip roof type made interesting by breaking the roof line for the upper windows. This house contains six rooms and bath. Color sketch above suggests appropriate furnishings for the living room.
Close-up photograph of several Spanish entrances showing a variety of good architectural suggestions for homes of this popular style. These range all the way from the severely plain to the elaborately ornamented.
Close-up photographs of windows in the modern Spanish style as built in California and elsewhere.

Large ornamented windows, either singly or in groups, characterize the Spanish.
The Langley

A very neat English cottage of stucco with brick trim around the entrance somewhat in the Tudor style. Floor plan to left shows a very convenient and satisfactory arrangement of the five rooms. This is a home arranged so perfectly that all housekeeping needs have been anticipated. Color sketch above illustrates the charming dining room.
The Latham

A DUTCH Colonial home of extremely graceful lines containing six rooms and bath besides the large sun porch and the vestibule hall. For a house only 24 x 30 feet, this contains an exceptional amount of space. Color sketch above shows the sun porch used as a radio room.
The Leake

A most attractively designed home of the Colonial style. It is the residence of Mr. and Mrs. John Leake, and the setting is very serene and picturesque. The property is surrounded by well-manicured lawns, and the house itself is elegantly furnished and decorated. The whole effect is one of comfort and grace, making it an ideal home for a family.
This Design in Full Colors on Page 1

Our Front Cover Home

A Half Timbered English Cottage, Pleasing to the Eye and Economical of Floor Space in the Grouping of Its Six Rooms

There is always something solid and homelike in the appearance of the English cottage type of house which has a lasting appeal. Of this sort is Our Front Cover Home this month and there is much to recommend it to the prospective home builder. An interesting roof line surmounts the stuccoed and half timbered walls which are given a decorative touch by the brickwork of the chimney, around the entrance and under the casement windows of the living room.

This brickwork, under the windows, creates the feeling that the house is sitting up on a foundation whereas, in fact, the floor line is almost at the grade level. The half roof above, as well as the extension of the main roof down over the entrance relieves the effect of height which would otherwise result from the long vertical lines of the timbering.

The entrance is approached by two low steps and leads into a reception hall off of which a coat closet is provided. This also serves as the stair hall and as a passage to the kitchen at the rear of the house. Doorways at either side give entrance to the living room and dining room and the former is also entered, at its rear, through a doorway opening onto a small porch. This living room extends on one side of the house for its entire depth and is a large room, 14½ by 21 feet, with a fireplace at one side. Casement windows occupy the entire front corner giving it all the advantages of a sun parlor without requiring a separate room area.

The dining room is also large, 12½ by 17½ feet and is made light and cheerful by large windows on two sides. A door to the rear leads through a pantry into the kitchen. This pantry, which is provided with built-in cupboards and an ice box which can be filled from outside, effectively separates dining room and kitchen. A rear entrance opens from the kitchen onto a small back porch and, at the end of the central hall there is a lavatory, conveniently located.
First and Second Floor Plans Show a Most Economical Utilization of Space and a Careful Consideration of Living Comfort, as Well as Consideration of the Practical Requirements of Economical Construction. On the opposite and following pages are further drawings.
Here May Be Seen the Basement Plan of Our Front Cover Home and Two Typical Wall Sections, Front and Rear. For the elevations turn to the next two pages.
Front and Left Side Elevations Showing Further Points in the Construction of Our Front Cover Home Including the Brickwork Which Sets Off the Front of the House.
The Rear Elevation of Our Front Cover Home Shows the Treatment of the Small Porches at the Rear Corners of This House with Their Doors Into Living Room and Kitchen.
Gypsum Concrete Demonstrated
Three Fireproof Homes Just Completed at Joliet, Ill., Show Low Cost and Adaptability of This Material

By H. A. SIMONS

EARLY this year, after six years of development, testing and building on trial scale, one of the largest producers of gypsum announced a system of residence construction called structolite concrete. It consists of a mixture of specially processed structural gypsum with sand and cinders or other coarse aggregate to produce a light-weight concrete of exceptionally high compression-strength. While it has been used successfully in factory-construction, it is intended chiefly to make absolutely fireproof, highly insulated, monolithic residence-construction possible at a price which, according to the manufacturers, is lower than that of any other masonry construction on the market.

During the present building season numerous houses and other structures have been built of the gypsum concrete. Ten homes were built at Cohoes, N. Y.; twelve in the Bronx, New York City; eleven at Yonkers, N. Y.; two at Milwaukee; one at Hinsdale, Ill.; and others at other towns. A model home now under construction at Sandusky, Ohio, has walls and partitions of structolite concrete. The new city hall at Brigantine Beach, N. J., and the bus-line garage there are of the same material. At Santa Monica, Cal., the new Ocean Park Egyptian Ballroom, said to be the largest ocean pier on either coast devoted entirely to amusement purposes, is of this material. It also has been used for numerous service stations and garages, public and private, and in some industrial buildings.

Three absolutely fireproof eight-room homes have just been completed at Joliet, Ill., and two others are being built there now. Although unusual labor-conditions were encountered and although other circumstances deviated slightly from the normal, the standard practice for the handling of the material, as recommended by the manufacturer, was followed and these houses may be considered typical of the methods of building with the gypsum concrete and of its cost in place.

The three houses were designed by Thornton and Rodecker, architects, of Indianapolis, for R. P. Blake, O. P. Beeson and Edward Klupmeyer, to be built in A. A. Parks' West Acres subdivision, a new restricted development. The general contractor was the Kaiser-Ducett Company. In general design, all three houses are of the English style.

Two of them are finished with stucco; the third—that of Mr. Blake—has a brick veneer over the first story with stucco above. The foundations of all three are of portland cement concrete; the walls and partitions, of structolite concrete; their first and second floors, of gypsum floor voids suspended on reinforced concrete joists. The roofs are of wood covered with asphalt shingles laid in random style. Metal casements and sash were used in some cases, though not all. Thus, with the exception of casements, trim and roof-frames, these three houses are built entirely of fireproof materials.

Since gypsum is a non-hydraulic cement, the foundations were carried 18 inches above grade-line and a strip of 40-pound water-proofing felt was laid on their top surfaces before the structural gypsum concrete was poured. Either this procedure or the application of a top-dressing of a water-proofing compound is recommended as a precaution against the infiltration of moisture through the foundation.

Mixing was done in an ordinary batch-type concrete mixer, but the proportions recommended by the manufacturer were followed. The water-to-cement ratio was .40. The mixing time was 120 minutes. The test results were very severe; the admixture of water was retarded severely, and the cement hydration required 2 minutes to complete, a condition which indicates the heating of the cement in the mixer. The final test shows that the concrete should be mixed for at least 3 minutes to achieve the correct proportions.

A House of Structural-Gypsum Concrete Built at Elgin, Ill., and Finished in a Combination of Brick Veneer and Stucco. The brick is tied to the walls by means of metal strips nailed to the wall and embedded in the mortar between the brick courses. The stucco is applied over a 2-inch, 14-gauge, welded steel, self-furring reinforcing fabric stapled directly to the gypsum concrete.
Exterior Walls of Structural-Gypsum Concrete Poured in Metal Forms. At this point the job is ready for the construction of the second floor. Note that the gypsum concrete construction begins after the foundation walls of Portland cement concrete have been carried 18 inches above grade line. Door-bucks and window frames are set right in the forms and the gypsum is poured around them.

These tests determined the following compression-strengths for various mixes:

- One-and-a-half parts of structolite and one of sand with three of gravel, 1,312 pounds per square inch;
- three of crushed slag, 1,297 pounds per square inch;
- three of crushed limestone, 1,281 pounds per square inch.

Steel forms were used. Several jobs have been built with wooden forms, but the use of metal forms is recommended because of the economies they make possible.

Only enough forms were bought by the contractor to run two complete courses around the house. One course was adjusted around all the foundation-walls and where the partitions were to be erected. After this course was poured, the second course of forms was adjusted and poured. Now, whereas ordinary concrete requires several days to harden so the forms can be removed, this material, if retarded, will set in from 15 to 30 minutes. To meet the usual job conditions, it generally is retarded to set in a little less than an hour. Such was the case here. Since the material acquires 60 per cent of its ultimate strength within an hour, the lower course of forms could be removed at that time and set above the second course. In this way, the same forms could be used hand-over-hand until the desired height of walls was reached; and this not only effected decided economy, but it also minimized the investment which the contractor tied up in forms.

On these jobs, all exterior walls were built 6 inches thick; interior partitions, 4 and 3 inches; and closet-walls, 2 inches.

Door-bucks and window-frames were set into the forms and the concrete was poured tight around them. Plumbing roughing was put in so that partition-forms could be adjusted around them, and all pipes and vents were imbedded in the sound-proofing insulating gypsum. Partitions and exterior walls were carried up together.

Because of the peculiar design of the houses, which were not specially planned for this type of construction, it was necessary for the contractor to obtain a few odd-sized metal forms. Spaces were left for brick fireplaces projecting on the exterior and for chimneys, although in some constructions, notably at Mt. Vernon, N. Y., these parts also were constructed of the gypsum concrete, the same metal forms being employed. The construction of the walls was completed when the outside surfaces were coated with a damp-proofing compound as an additional precaution against the seepage of moisture.

Meanwhile, the floors had been built. The houses were designed for ordinary wood floors with 10-inch joists. When the owners selected incombustible material for the walls, they decided to make the floor-construction fire-safe also. The engineers of the gypsum company recommend the combination with walls of structolite concrete of any of the poured-in-place or pre-cast gypsum floor- and roof-systems which have been developed and which have been used in public, industrial and commercial buildings for many years, to make the residence entirely fireproof. Messrs. Blake, Beeson and Klupmeyer adopted this recommendation with respect to the floors, though not as to the roofs. But changes in the exterior elevation would have been needed if floors less than 10 inches thick were selected. So it was decided to use gypsum floor tile 10 inches thick supported by beams of reinforced Portland cement concrete.

The first-floor slab was supported by the exterior walls and by two reinforced concrete beams so placed as to carry the partition-walls on either side of the central hall in the first story. These partitions, and the exterior walls, supported the second-floor slab.
Portland cement concrete beams were spaced 22½ inches on centers. Since the width of the gypsum floor void was 19 inches, the joists were 3½ inches wide. The maximum clear span of the principal joists was 13 feet. Their depth was 10 inches, and they were reinforced with 1-inch deformed bars so placed as to resist tensional stresses. No concrete was poured on top of the gypsum voids, but 2-inch by 2-inch wooden sleepers were placed 16 inches on centers at right angles to the joists and were fastened down by wires imbedded in the joists at the time of the pouring. To these sleepers was nailed the finished flooring.

Floor, walls, partitions and roofs having been erected, the houses were ready for interior and exterior finishing. On the inside, three coats of gypsum plaster were applied directly, without lath, to walls, partitions and ceilings. This was possible because gypsum on gypsum is an ideal chemical bond. The surfaces to be plastered were wet liberally to "kill suction" and an additional mechanical bond was provided by scratching the structolite concrete walls while they were "green." The use of the metal forms produced a surface so true and so free from irregularities that a minimum amount of plaster was required. Over heating-vents metal lath was nailed directly to the structolite concrete.

On the houses which were covered with stucco, a 2-inch by 2-inch, 14-gauge, welded steel, self-furring reinforcing fabric was stapled directly to the gypsum concrete. Stucco, in a combination of texture and color-tone typical of the English style of architecture, was applied directly over the reinforcement. On the lower part of the Blake house the exterior finish was brick veneer. Metal ties were nailed onto the gypsum concrete to be imbedded in the brick course and the brick applied as over any other frame.

The easy adaptability of the material to any architectural treatment was indicated by the fact that the plans, which the architects drew without knowledge that this material was to be used, were carried out exactly. Adaptability was shown again by the fact that stucco and brick veneer were used in different cases for the outside finish. This is borne out further by the fact that other modes of treatment have been used with equal success in other constructions. Numerous structolite concrete homes with shingle and clapboard siding have been built. In case of the former, furring strips are nailed to the concrete and the shingles are attached to these. With clapboards, the siding is attached to vertical furring strips nailed to the concrete. In one beautiful home at Milwaukee, an exterior facing of field stone was used, the stone being set inside the forms before the concrete was poured and later pointed up with portland cement.

Exact data as to the cost per square foot of erecting the gypsum walls have been obtained from the contractors on these jobs. The following figures are based on the cost of materials delivered in Joliet; as to some items, these figures may be higher or lower in other cities. They are based also on a high wage-scale—carpenter-labor at $1.30 an hour, and common labor at $0.80 and $0.85—which is considerably in excess of what may be figured for other localities, in the majority of which common labor costing from $0.45 to $0.65 an hour can be employed for most of the work.

Under these conditions, the cost of the steel forms to build 500 square feet of wall was found to be as follows: erection by carpenters, 10 hours' work at $1.30, $13.00; assistance by common labor, 5 hours' work at $0.80, $4.00; removal of forms by laborers, 5 hours' work at $0.80, $4.00. This gives a total of $21 for 500 square feet, or $0.042 per square foot. Rental of the forms cost $0.015 per square foot, making the total cost per square foot of form-work $0.057.

Material-costs were figured on a basis of one cubic yard, as follows: 700 pounds structolite at $15.40 a ton, $5.40; 0.28 cubic yards of sand at $3.00, $0.84; 0.85 cubic yards of cinders at $2.00, $1.90. That makes the total material-cost per cubic yard $7.94, or $0.024 per cubic foot.

Reducing this to terms of square feet of wall surface, the costs are as follows:

Applying the Brick Veneer for the Exterior Finish Over Walls of Structural Gypsum Concrete. The metal ties are nailed right onto the walls and are embedded in the mortar between the brick courses. Note how tight the concrete sets up against the window and door frames.
Gypsum Concrete

Here Is the Big First-Floor Living Room Ready to Be Floored and Plastered. Note the walls of structural-gypsum concrete which have been scratched to provide mechanical, as well as chemical bond, with the gypsum plaster. Wire ties to which the sleepers are to be attached may be seen projecting from the portland cement concrete floor joists. Note the smooth even surface of the ceiling which now is ready for plaster.

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Form rental</th>
<th>Labor on forms</th>
<th>Concrete material</th>
<th>Labor on concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; thick</td>
<td>$0.030</td>
<td>.084</td>
<td>.196</td>
<td>.100</td>
</tr>
<tr>
<td>6&quot; thick</td>
<td>$0.030</td>
<td>.084</td>
<td>.147</td>
<td>.075</td>
</tr>
<tr>
<td>4&quot; thick</td>
<td>$0.030</td>
<td>.084</td>
<td>.098</td>
<td>.050</td>
</tr>
<tr>
<td>3&quot; thick</td>
<td>$0.030</td>
<td>.084</td>
<td>.074</td>
<td>.0375</td>
</tr>
<tr>
<td>3&quot; thick</td>
<td>$0.030</td>
<td>.084</td>
<td>.074</td>
<td>.0375</td>
</tr>
</tbody>
</table>

*Two sides of wall figured.

The second figure applies to the exterior walls and the third and fourth figures, to the partitions in the Joliet houses. The cost per square foot of the completed wall-construction was as follows:

- Structolite wall: $0.336
- Damp-proofing: .02
- Plaster: .007
- Reinforcement for stucco: .034
- Labor for applying reinforcing: .011
- Stucco, applied: .022

Total: $0.688

It will be noted that, unlike the cases of other solid masonry constructions, no cost for labor or materials for furring, either on the inside or the outside of the wall has been included. Both these items are omitted because no furring was done, nor is it required with structolite concrete construction because tests have proved that the material is an excellent preventer of heat-loss as well as fireproof.

Its insulating and fireproofing qualities were established by fire and water tests conducted in December, 1923, at Columbia University. A panel 3 inches thick, 9 feet wide and 14 feet long was subjected to an average temperature of 1,700° F. for one hour. As soon as the fire test was completed, a 1¼-inch stream of water with a pressure of 30 pounds was turned onto the exposed side of the panel from a distance of 20 feet. These are the conditions which brick, concrete and similar constructions must meet to be approved as fireproof under the Building Code of the City of New York, and following its successful passage of all requirements structolite-concrete was given that approval.

During this test, while the temperature on one side of the panel was 1,700° F., that on the other side never exceeded 210°. This shows the insulating value of this material—its ability to keep heat in and cold out, and the consequent ease and inexpensiveness of heating a dwelling built of it. Further economies are effected in insurance costs, since this type of dwelling is entitled to the lowest possible insurance rates.

Structolite concrete weighs from 85 to 105 pounds per cubic foot while the weight of portland cement concrete is 150 pounds. This fact means considerable savings in designing and other parts of the structure.
Clay Modeling as Taught to Students of Architecture
Practically Every Piece of Ornamental Stone, Carving and Plaster Decoration Has Been First Modeled in Clay

The public little knows the amount of study and preparation required to produce the beautifully decorated columns, cornices, friezes and ceilings of our many fine buildings. Tracing a piece of fine decorative work to its beginning, we find an architectural draftsman who has had an art education toiling over his board to detail out in pencil the various decorative pieces and motifs.

Subject to the supervision of the designing architect, this man must create and put on paper the decorative effects which the public now sees and enjoys in such fine buildings as capitols, court houses, city halls, banks, libraries, office buildings, hotels, theaters and railway terminals.

From the architectural draftsman, the plans go to a modeler in clay. This man, usually, has had an art education similar in many respects to that of a sculptor. He is usually to be found in the shops of big ornamental plastering contractors and more often than not has had his training abroad. These men are expert in working out decorative treatment and ornamentation. For this reason, the plans are often sent to them with very sketchy pencil suggestions which they then work out in detail.

Architects qualified for the designing of important buildings frequently prepare themselves by a course of training in universities or technical schools where drawing, architecture and clay modeling are taught. The architect often uses clay modeling in his mass studies of buildings in order to perfect his proportions and outlines in all three dimensions. Therefore, a training in clay modeling is particularly valuable to him.

The more important of the schools teaching architecture and clay modeling are Harvard and Columbia universities and such technical schools as the Massachusetts Institute of Technology, Armour Institute and the Carnegie Institute of Technology.

In this connection it will be of interest to quote Dean Edgell, of Harvard University:

"You are correct that we have a department devoted to architectural modeling. The work is, of course, subordinate to the general course in architectural design and construction.

"There are three courses, meeting once a week and corresponding to the first three years of the student's school..."
Clay Modeling

is very small in career. The beginner starts with practice in modeling the simplest architectural ornament; for example, the egg and dart, copying an actual marble piece of Roman moulding. The attempt is made to familiarize the student with ornament of different periods, beginning in the preliminary course with classical ornament and continuing later with Mediaeval and Renaissance. At the same time, there is practice in modeling the human figure on account of its value in training the eye in proportion.

"Occasionally, students undertake special tasks like modeling archaeological restorations of parts of buildings. Sometimes the students are allowed to go ahead and attempt more ambitious work in sculpture, although this is not regarded as a regular part of the course and is not particularly encouraged."

The course of modeling in the Department of Architecture at the Massachusetts Institute of Technology is given in one three-hour exercise per week for the thirty weeks of the school year. In view of the fact that the students are studying to become architects, it is not the intention to train them in this course as sculptors or modelers, but rather to use the modeling primarily as a means of developing their sense of the third dimension. It serves also very effectively as a study in composition of light and shade. The exercises are given by means of problems, the subjects of which are distinctly architectural in character. The student brings to the first exercise a preliminary sketch, drawn in pencil. This receives a first criticism from the point of view of composition. The sketch is then developed in the model with help from the instructor on the technique of modeling.

In a former article, we presented an illustration of a mass study in clay of a cathedral design done by a former student, now an instructor in drawing at Harvard, Mr. K. J. Conant. The portico, illustrated herewith, was also done by a Harvard student, Mr. L. W. Ross. It

This Is a Really Fine Piece of Sculpture Done in Clay by a Student in the Department of Architecture at Harvard University.

Ornamental Plaster as Cast in a Chicago Shop for a Ceiling in the Union Arcade Building, Pittsburgh. A large number of such pieces were shipped to Pittsburgh and installed on the job.

Ornamental Plaster as Cast in a Chicago Shop for a Ceiling in the Union Arcade Building, Pittsburgh. A large number of such pieces were shipped to Pittsburgh and installed on the job.

Another Example of Architectural Clay Modeling by a Student at Harvard University, Done on a Small Scale, with Great Delicacy of Treatment.

broncho and rider done in clay is an excellent piece of work and might well represent our late President Theodore Roosevelt, in his "broncho-busting" days.

The ceiling shown is a typical example of an artistic decorative ceiling, made in the shop of McNulty Brothers, Chicago, and installed in the Union Arcade Pittsburgh, Pa.

Two examples are shown of the work of students in architecture at the Massachusetts Institute of Technology. The flagstaff base for a war memorial, while purposely rough, is well proportioned and there is sufficient detail to suggest what the figures will be—such as the winged victory figures at the base. The plaster capital which is shown in another illustration, is complete in detail and is appropriate for the type of building for which it was designed—the vestibule of an aquarium.

The making of plaster casts is done almost entirely in the shops of ornamental plastering contractors, principally in Chicago and New York. When the blue prints and sketches for the plaster ornamentation of a building come into the plaster shop, the modelers, dressed like sculptors in blue smocks, set to work to model the ornamentation in clay to the actual dimensions indicated on the prints. The architects, as a rule, do not furnish clay models, preferring to have this work done in the plaster shops which make a specialty of it.

The separate pieces of ornamental plaster are then assembled in place by plasterers on the job, so nicely matched that they appear to be continuous, without break or joint. In the case of an ornamental ceiling, there are usually a number of designs and a number of pieces of each. Steel loops are imbedded in each piece of ornamental plaster so that wire ties can be carried up and firmly anchored to the steel or concrete beams, for a suspended ceiling.
Principles of House Painting

It must be confessed that most people paint their houses for the sake of good looks. The matter of preserving the surface does not enter into the consideration as it should. An era of prosperity always causes the home owner to feel that the times warrant his going to the "expense" of painting. And, sad to relate, the reverse is usually the case when times are not quite so good.

The common desire to look one's best, or even the love of appearance for appearance sake, cannot, of course, be condemned, because many of our choicest neighborhoods owe their attractiveness to this alone. The trouble is simply this: folks who regard painting as a luxury pass up this "expense" at the very time that they cannot afford the cost of repair bills that inevitably follow neglect.

Not so with the builder or architect. The protective and aesthetic aspects of paint should be fully recognized by them, as the endurance and appearance of their structures depend, to a large extent, upon the kind and amount of paint upon them.

The builder is so often the mentor of the home owner that he is a wise man if he arms himself beforehand with accurate knowledge about paint. Not only does he win the goodwill of the owner, but he also has an opportunity to see that his buildings are not ruined by poor paint or inappropriate color.

The psychological value, the invigorating effect of clean, brightly painted property, is another factor we cannot afford to disregard, and this alone should be sufficient cause to warrant painting in times of temporary business depression. Next to persuading a man to paint his house when he thinks he ought to "save the money," the most difficult point used to be the price he should pay per gallon for the paint used. It has always been hard to get a man to reason out the cost on the basis of the square foot and the expense at so much per paint-service-year. But nowadays price is becoming less and less the prime consideration, and, as with automobiles, it is performance and service that count.

It is not our intention to champion any brand of paint, or to advocate any particular type of paint, but we do want to urge the necessity of using good paint.

A great deal has been written regarding the value of color in home painting and a great deal of improvement has resulted. Americans are great faddists, however. Some times one sees the doors and trim of a large house painted different from the walls, and the exterior of a house is entirely of one color, while the interior consists of a combination of colors. The effect is unnatural, and the result is not always good.

What Color Would You Prefer to Have This House Painted? If you follow the principles laid down in this article you will avoid bright colors for this house, as they are only advisable where the house stands against a subduing background of foliage.
times it seems we are all like sheep. How else can the vogue be explained wherein everyone, until quite recently, painted his house white, regardless of style, size, vintage or location? At present it looks very much as if all the white houses are being painted ivory, which will be an improvement if color is introduced effectively for trim and roof.

Color is the most effective sales agent we know. It intrigues our interest. It draws us toward, or repels us from a home. Color is never inactive. It is always working either for or against your interests. So let us not think that we can avoid the difficulties or possible dangers in choosing a color scheme by painting in all white regardless of the type of the house.

Generally speaking, the house prominently situated appears best in simple treatment. Neutral grays or drabs, with lighter gray or ivory for trim color, are very satisfactory. If there is much ornament or grill work, render this in the body color and avoid a "ginger-bready" appearance.

Where there are plenty of trees and foliage, light colors are advisable for both the large and small house. But where the building is unsheltered by trees the use of stone, warm drab or gray will avoid the bare look that a brighter color would create.

While it is possible to use the brighter, cleaner colors in neighborhood painting, good judgment must be exercised. Where one house is painted in a bright yellow, for instance, its next door neighbor should not be done in a bright green, a dark brown or any other strongly contrasting color. A cream gray body color with an ivory trim and green roof would improve the looks of both houses. Where the house is between two buildings painted in strong colors, a neutral tone is required, and if a tint of the strong colors can be used for trim or roof, a "color bridge" will be formed that will "bind" the three.

The idea of color cannot be disassociated from the surface to which it is applied. Just to the extent that any color is warm and expanding in effect, or cold and contracting, aggressive or receding, is that surface affected to which the color is applied. Light, warm colors, tints and shades of yellow, make surfaces appear larger. Dark colors tend to make the surface seem smaller. Light gray and green do not seem to change appearance to any extent. Bright, warm colors containing red or orange, make a surface seem nearer to the eye than the medium neutral or cold colors, such as dark gray or dark green, especially a blue green.

A practical application of this principle is used in painting the pillars of the porch. A yellow body color, for instance, with dark green trim, requires the pillars to be finished in the yellow rather than the green so that they will hold their place and appear nearer the eye and thus preserve the architectural and structural value of the building.

As a rule, light warm colors like ivory, cream, canary yellow, golden yellow or warm drab are suitable for the small house, as they will make any building appear larger. Light colors which are not warm, such as sea green, cream gray, pearl or silver gray, are especially pleasing for a building which is not surrounded with trees. These colors, too, will harmonize with practically any color on neighboring houses.

The dark, warm colors, of which certain tints of brown and maroon are good examples, produce best results on larger buildings, where it is necessary to employ colors which will not be affected by smoke or dust, and where the foliage is not too dense.

The darker, so-called cold colors, as light lead color, or sage and moss green, are suitable for large buildings not surrounded with foliage and the roofs of which are covered with slate or other dark gray material. Surroundings and conditions vary, however, and the large building may be painted in as light a color as cream and the small bungalow in as dark a tone as brown.

The trimming is important in the architectural plan of the building and is even more so in the painting plan, because with the manipulating of the trim color it is frequently possible to modify the appearance of the house to a considerable extent.

The tall, narrow house can be made to appear lower and broader by keeping the body in a light color such as ivory, using a dark contrasting color for trim such as a medium brown. A two-color treatment is also effective.

Decay in the Lumber Yard
How to Prevent Stored Up Lumber from Cracking and Checking

As every builder knows, unless rigid conservation is practiced until our lumber resources recover, there will be less and less building material as the years go on, and, by the same sign and token, fewer houses to build. No detail of conservation is too petty to observe. No practice is too difficult, for every "act of conservation" checks off

C OnTROVERSY over conservation of lumber is decidedly out of date. Everyone knows that the present generation is beginning to suffer from the results of its grander wastefulness. Our forests are not exhausted, but great care must be taken to prevent them from becoming so.

For the Colonial or Dutch Colonial House Ivory or Cream Is Always Appropriate, but It Must Be Remembered That Colors of This Type Make the House Appear Larger.
And it frequently has more concrete advantages to the contractor than the abstract "future good" which conservationists preach.

A large percentage of the tree is wasted in lumbering and cutting. The wood is then shipped to lumber yards where it is tiered up in large piles and exposed to the weather for storage and weathering purposes. Exposed wood, no matter where it is, is at the mercy of the weather. Moisture seeps in, frosts bite and the sun blisters, with the result that the ends of the cut lumber invariably crack and check. When the lumber reaches the hands of the users the ends must be sawed off to the extent of the cracking and checking. This results in a very considerable waste, which is charged up not to the lumber companies, but to the purchasers.

Some lumber storage yards paint the ends of the lumber with different colors. Now, paint is universally accepted as a protective agency against weathering and decay, but in this case it is not practical. Paint when used in this way does prevent cracking and checking, but unfortunately the staining properties of the pigment are carried into the lumber. It is necessary then, for the end to be cut off to the extent of the stain before putting the lumber into service.

The best way to preserve exposed wood in storage is to coat the ends with wood preservative—a special preparation which prevents cracking and checking and does not stain the lumber. It is made with a transparent white base with no staining properties and is ground to a semi-paste in a non-drying liquid. The preservative does not appreciably stain the wood and prevents the cracking and checking to a very considerable extent.

The amount of lumber wasted when some preservative is not used mounts up to appalling figures. If the contractor would figure up the number of good hard dollars lost with the cracked timber ends he would realize that conservation not only protects the stock of raw materials which will be utilized by builders in future structures, but also saves money for the contractor on jobs at hand.

**Importance of Arbors**

In nature we do not find the straight lines and angles nor all of the colors which characterize the architecture and finish of our houses. Often, indeed, there is nothing in common, no relationship, between the house and its green surroundings; it is a thing of square corners and mathematical proportions set among the graceful and ever changing lines and colors of trees, bushes, grasses and flowers.

Arbors and pergolas are important as links between architecture and the green world. As a gateway in a hedge, arching over a pathway leading from a garden to a child’s playhouse, from terrace to tennis court, from house to well-house or flanking a flower garden—not exceeding the entire distance between two points, you understand—the arbor and pergola, covered with vines and flowers, unite the house to its surroundings.

They are also good from the builder’s standpoint. “Extras,” such as arbors, pergolas and other outdoor effects, do much towards making the house desirable.

The single arbor repeated at close plantings across a broad pathway and forming a long, covered green walk, may easily become the most intimate and enchanting spot about a home.

This is an excellent time to plan an arbor, pergola or even a simpler piece of exterior woodwork, for many of the vines used as permanent cover should be planted in the fall of the year. Next summer, while growth is developing,
Save the Surface Department

Outdoor woodwork of cedar is taboo. Such pieces are ugly, and beautiful, stately cedars should not be sacrificed. Various forms of upright wood columns, set substantially, with cross pieces cut to such shapes as desired, will prove very satisfactory. The arbor frame should never be completely covered with foliage. It might be made of pine, which holds paint well, and is not too large for the small property.

It is very necessary that outdoor woodwork be painted and kept painted. Unless a paint film renders the surface waterproof the wood will rot, and by the time the vines and other growth are reaching their full beauty, the arbor will be a wreck.

From the artistic standpoint, also, paint is necessary. The crudity of unpainted lumber would destroy the effect entirely. White is the color most used, but gray or a tone resembling the silvery color of old weathered boards make excellent finishes.

Special Paints Adapted to Special Surfaces

ONE of the greatest causes of paint troubles is the use of a good paint or varnish on a surface to which it is not suited. Not only is it necessary, that a surface be in proper condition to receive paint, but it is equally important that a finish be applied that has been made especially for that particular surface.

To many people “paint is paint”; they can see no particular reason why any paint made for house painting cannot be used outside; why a varnish for interior woodwork will not stand up when used on a door sill. The builder, however, must realize the importance of using the proper paint in the proper place, otherwise an uninformed buyer who insists upon curious and dangerous economies in paint may succeed in ruining the entire building.

All surfaces have specific and peculiar requirements and unless these are borne in mind and the finish applied that is intended for such surfaces, there is bound to be trouble of some sort. For his own protection, as well as information, the builder should know which paints are designed for what surfaces, and how each type of paint possesses qualities peculiar to its function.

The paint manufacturer is making hundreds of different products, shades and colors. He knows, for instance, that a paint for use on porch floors and steps must be made to withstand severe conditions. That is the reason why one of the most important ingredients of a paint for use on porch floors is a durable, extremely tough varnish.

An enamel for exterior use must contain, as its liquid portion, an oil or varnish that will not be disintegrated by exterior exposure, but will withstand the wear and tear of the elements without losing its gloss. He knows that a floor varnish to be satisfactory must be extremely tough and elastic so as not to be marred by the tread of feet.

Among the hundreds of finishes made today there is one that will perfectly meet the exacting requirements of any paintable surface, provided the surface is in the right condition to receive it.

Frequently people try to economize by using up leftover paint from an interior job upon the exterior. There are hundreds of ways in which this paint may be used more attractively and certainly more wisely. When a house is built and ready for the finishing touch of paint, it is foolish to run the risk of spoiling the job by aiding and abetting the owner in a misuse of paint.

And it must be remembered, too, that no matter how good the paint or varnish may be, nor how well suited for the use in question, unless the surface is in proper condition, successful results are practically unattainable. The method of application also is just as important.

When these points are not realized and a product unsuited to the surface is applied, the color is unsatisfactory, the finish is not what was expected or it is deficient in wearing qualities.

We may wish to protect and preserve a surface; we may desire to beautify it or to render it waterproof and sanitary; we may want to accomplish all these ends. Paints render a wide variety of services. Because of this and the special requirements of various surfaces, it is most important that the proper paint or varnish be used. The determination of this is not difficult, for expert advice is readily available.

Sometimes the builder hears that the paint or varnish finish on a house which he has sold has not given satisfactory service. Most paint failures are due to one of three causes. The paint used was not intended for the surface to which it was applied. The surface was not thoroughly clean or dry when painted. The method of application was wrong or drying conditions were unfavourable. But there are other causes such as sea fog, salt air, intense southern sunlight, fume or smoke laden air and quantities of dust which hasten deterioration.

It is a wise contractor who watches carefully to see that the painting is properly done. After all, paint is the finishing touch. Much of the attractiveness of the house depends upon how the paint brings out its good points. Much of the builder’s reputation depends upon how well the various parts of the house stand up under wear and tear. Paint is one of the most obvious parts of a house. If it wears out quickly, cracks, and peals; in other words, if it has not been properly applied or the right variety of paint has not been used, doubts immediately arise in the owner’s mind as to the worth of the less visible portions of the house.
Sheet Metal Details
Sheet 11—Flashings Around Terra Cotta Cornices and Balconies

Editor's Note: This is the eleventh of a series of articles, presenting authentic details for flashing and metal work problems, presented on the opposite page, were prepared by the Copper and Brass Research Association, and may be applied in the use of all roofing metals. The first of this series was published in the November issue of the AMERICAN BUILDER. Readers will remember that the drawings are intended to show the method of installation for every trade involved and are suitable for use by the drafting room in designing details. The distortion of the drawings will be apparent at a glance, but this purpose has been done that the methods may be made more clear.

NOTES FOR DRAWINGS ON OPPOSITE PAGE

Fig. 59. One method of flashing a terra-cotta cornice is shown in Fig. 59. The cap flashing on the outside of the balustrade and the flashing above it extending through the wall are both built in as the masonry progresses. Before laying the upper flashing a key is formed by the mason to avoid the chance of a side slip in the balustrade after erection. This key may be formed either by setting two bricks on edge or by the use of concrete; its exact size and location is decided by the design.

The flashing should be formed closely over the projection in one piece and wide enough so that it can extend entirely through the wall and be turned down on the inside far enough to lap the base flashing at least four inches, and turned down outside about one-half inch over the terra-cotta to form a drip. The lower cap flashing, also built in with the metal, is turned up against the brick work back of the terra-cotta at least three inches and down outside on the face of the wall far enough to lap the cornice flashing at least four inches.

If the lap is to be soldered the distance may be reduced accordingly. The outer edge of the terra-cotta cornice should be so designed as to provide a fastening for the outer edge of the base flashing covering the top of the cornice. (A good description of the method of fastening is given in Fig. 63.)

Attention is called to the use of the 3/4-inch thick bronze bar set in the top rail of the balustrade. This bar is continuous on top of the balusters, and if possible should be returned at the ends of the balustrade into the main wall to avoid the chance of a side slip in the balustrade. The bar is placed on top of the balustrade dowels just before the terra-cotta rail is placed in position.

Fig. 60. A terra-cotta cornice surmounted by a brick-parapet wall faced with terra-cotta is shown in Fig. 60. In this type of construction it is important that the entire top and back of the wall be covered with metal. This will prevent the absorption of moisture by the masonry through the joints of the terra-cotta and brick work and permit cutting down the width of the terra-cotta cap. In designing the terra-cotta cap the upper part of the cap should be made with a roll, as indicated, from one to one and one-half inches in diameter. The metal is formed over this roll and extended over the top of the cap and down in the inside of the parapet wall where it is connected to the copper roof by a soldered lock seam. The metal at the back of the parapet should be formed with standing seams and the top with flat seams soldered. The two are joined by a lock seam hammered flat. This top of the terra-cotta cornice would also be covered with copper to protect the joints. The metal may be formed over the upper number of the cornice, as shown over this step. In either case it is secured in place by screws as described in detail in Fig. 63. After securing the outer edge of the metal, as above described, the metal is brought back over the top of the cornice and turned up on the masonry. There it is held in place by the copper flashing turned down over it. For cornices with over two feet of projection it will be found expedient to form a soldered lock seam half way across the projection and lengthwise of the cornice. The cap flashing begins at the back of the terra-cotta against the brick work and is turned up against the brick work three or more inches, then brought outside of the terra-cotta and turned down, lapping the base flashing four inches. If the lay is soldered this distance may be reduced accordingly.

Fig. 61. Another method of forming a gutter in a terra-cotta cornice surmounted by a brick parapet wall faced with terra-cotta is shown in Fig. 61. The flashing is continued through the wall beneath the terra-cotta cap to prevent seepage and continues down on the inside of the parapet and is formed with vertical standing seams (see Fig. 60) and connected to the main roof metal by a soldered lock seam. Attention is called to the key formed in the masonry below the terra-cotta cap which is made as described in detail in Fig. 59. The copper flashing, forming also the gutter-lining, is formed on its outer edge over a terra-cotta roll (as described in detail in Fig. 60) and extends back on the masonry, avoiding all sharp angles, to the brick wall where it is turned up on the wall high enough so that the top will be at least three inches above the highest part of the outside of the terra-cotta cornice. For gutters over two feet wide a soldered lock seam should be formed longitudinally in the middle of gutter. This seam is secured by cleats nailed to wood strips set in the concrete. (A method of connecting a gutter of this type to the drainage system is described in Fig. 59.) The cap flashing begins at the back of the terra-cotta facing of the parapet about three inches up on the wall, and extends out under the terra-cotta to the outside where it is turned down four inches over the gutter-lining. If this lap is soldered the distance may be reduced accordingly.

Fig. 62. A balcony formed by terra-cotta with a rail of the same material and a window or door opening to it and the method of flashing is shown in Fig. 62. The metal is laid from the outside of the cornice (secured either by screws as illustrated and described in detail in Fig. 63, or over a roll as described in Fig. 60), over a masonry key (described in Fig. 59), and across the floor of the balcony to the main walls, where it is turned up against the masonry and under the terra-cotta and wood sills and up to the back of the wood sill. The introduction of one or more soldered lock seams will be necessary in the floor of the balcony, depending upon the width, and some provision should be made for copper-lined scuppers at such places and of such size as the design of the rail may permit. The bottom of the scuppers should always be about two inches above the highest point of the balcony floor. The flashing of the balcony floor should rise on all sides from two to three inches above the bottom of these scuppers. Attention is called to the copper water-bar (described in detail in Fig. 11) and the bronze bar in the balustrade rail (described in Fig. 59).
Details for Sheet Metal Work

Sketches for Sheet Metal Working Methods, Explained on Opposite Page.
Earthquake Tests Construction

"Perhaps no disaster has been more thoroughly and carefully investigated by experts than has that at Santa Barbara," says the monthly digest of the Common Brick Manufacturers of America, "and from these investigations there comes unanimously this lesson. Good construction of practically every kind withstood the shock. Inferior construction, regardless of the material used, is unsuited to earthquake zones. In the very heart of the business section of Santa Barbara, where the greatest damage was done, there stand today solid wall brick structures that are wholly undamaged.

"Fourteen secretaries of the group associations affiliated with The Common Brick Manufacturers' Association of America met in conference at Cleveland on July 23 and 24 to study engineers' reports from both the Montana and Santa Barbara earthquakes. These group associations, covering nearly the entire country, will work in unison in promoting better brick work and actively pursue a relentless campaign against the 'jerry' builder, and all others who sacrifice safety and permanency to cost.

"The brick industry in the future will put special emphasis on these points: (1) Cross walls tied or bonded thoroughly to the main walls; (2) proper ties and anchors at floor and roof lines; (3) the use of strong mortar; (4) braces for all walls extending above the roof line; (5) the thorough wetting of brick prior to being placed in the wall."

New Vitreous Ware Plant

In the latter part of 1923 Thomas Maddock's Sons Co., Trenton, N. J., came to the realization that their present and prospective business was rapidly exceeding their manufacturing facilities.

A site of 125 acres was selected just east of Trenton on the main line of the Pennsylvania Railroad running from New York to Philadelphia. Early in 1924 work was started on the foundation and on April 1, 1925, the first complete unit of the new plant went into operation.

Five and One Half Million Feet

An estimate that 5,500,000 board feet of lumber used in constructing the motor speedway, grandstand and its approaches, at Laurel, Md., near Baltimore, would build nearly 700 cottages sufficient to house a population of a town of about 3,000 persons, has been made by an ingenious authority. This is based on a requirement of about 8,000 feet of lumber to a cottage.
WAX FLOORS the New ELECTRIC WAY

TAKE all the labor out of floor polishing. Get a beautiful burnished lustre impossible to obtain by hand. Finish floors many times faster—save time, labor and money.

Waxed floors have always been one of the best selling points a building or home could have. Wax gives the finest, most beautiful and serviceable floors. Now waxed floors are easiest.

JOHNSON’S WAX Electric floor Polisher

Simple A small electric polisher that operates as easily as the ordinary vacuum cleaner. Fast enough for the big job, yet handy enough to use on the smallest. Nothing to take care of. Nothing to get out of order. Runs quietly. Can be carried anywhere—simply plug in any electric connection.

Efficient Does the work with amazing speed. Puts on a hard long-lasting polish impossible to obtain any other way. Requires no effort.

Economical Saves hours of hard labor. Will pay for itself in time saved on the first few jobs.

Inexpensive Not a big cumbersome machine requiring large investment but a handy, every-day tool that every builder, floor finisher, painter, and building manager needs.

Ask For Our Special Offer to Builders and Contractors

S. C. JOHNSON & SON, Dept. AB9, RACINE, WIS. “The Wood Finishing Authorities”

Please send complete details of the Johnson Electric Floor Polisher and your special offer on it to contractors and building managers.

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

1-8 H. P. Universal Motor. (Works on either alternating or direct current.)
Weight 8 lbs.
New Red Seal Plan Will Assist Builders Sell Better Homes

By H. W. AYRE
Of the Staff of The Society for Electrical Development.

ATURE has been prodigal in her gifts to the human being. She has seen to it that the body is adequately supplied with nerves—nerves that see, nerves that hear, nerves that feel, nerves that taste—in addition to the million odd nerves that help keep the body functioning, properly furnished, and spic and span in every way.

The electrical wiring system of a home is in some degree the counterpart of Dame Nature's nervous system in the human body. Electrical wiring is the essential means for vitalizing the inanimate structure we call a house. It makes interiors cut off from natural daylight glow with subdued or heightened radiance from permanent and mobile lighting sources; it brings heat to take the chill from the air—to fry, bake, boil and broil food for daily consumption; it brings power to wash and iron clothes; to clean the home furnishings; to chill sanitary refrigerators, and to do numerous other tasks which enter into the highly technical profession we like to call by its homely name: "Housekeeping."

Yet the fact remains that many homes are practically light-less, heat-less and power-less because they are insufficiently supplied with electrical wiring—the unseen, forgotten transmission carriers of the ever useful electrical current.

Not that the public is always aware that this condition exists. Perhaps they have not had the opportunity of comparing it with homes adequately wired for convenience and comfort—such as have been demonstrated in model Electric Homes, exhibitions of which have been made in hundreds of communities in all sections of the United States.

When electricity was first introduced to mankind it was solely as an illuminant—to chase the gloom and ugliness of age-old methods of lighting from the home. In those early days a house "wired for electricity" meant that it had a single drop cord and bare light in each of the principal rooms. The time has come, however, when a single outlet per room is insufficient, even

The Red Seal Plan to Assure Adequate Wiring for the Convenient Use of Electric Service treated of in this article is one of the most progressive steps towards supplying the public with a service which means a maximum in comfort, convenience and economy. Already the properly constituted electrical bodies in Syracuse, Rochester, Buffalo, Pittsburgh, Louisville, Ky., Detroit, etc., have been granted licenses by The Society for Electrical Development to operate the Red Seal Plan in their respective communities.

A Red Seal Card on Any House Means That It Has Been Adequately Wired for Electric Comfort and Convenience in Accordance with a Carefully Worked Out Plan and Accurate and Complete Specifications as Provided in the Movement Sponsored by the Society for Electrical Development.
**How to cash in on a good name**

Suppose you were the buyer instead of the builder.

And suppose that you were told that the house was painted and varnished completely with Sherwin-Williams goods. Wouldn't it make a good impression on you?

The name "Sherwin-Williams" and the "cover-the-earth" trade-mark are known everywhere. Tie your houses and your reputation as a builder to the Sherwin-Williams reputation as the largest paint and varnish makers in the world.

Sherwin-Williams invite you to use the Architects’ Painting Guide which shows at a glance their authorized recommendation for each surface.

For details of specifications see: The Sherwin-Williams Book of Painting and Varnishing Specifications (sent upon request) or Sweet's Architectural Catalogue.

We invite correspondence—write to the Department of Architectural Service.

The Sherwin-Williams Co.
407 Canal Road
Cleveland

---

**ARCHITECTS’ PAINTING GUIDE**

**FOR PAINTING, VARNISHING, STAINING AND ENAMELING**

**IMPORTANT**: Each of the products specified below bears our name and trade mark

<table>
<thead>
<tr>
<th>SURFACE</th>
<th>TO PAINT</th>
<th>TO ENAMEL</th>
<th>TO STAIN</th>
<th>TO VARNISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRICK WALLS (ext)</td>
<td>S-W Concrete Wall Finish</td>
<td>Old Dutch Enamel, Gloss</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>CONCRETE WALLS</td>
<td>S-W Concrete Wall Finish</td>
<td>Old Dutch Enamel, Gloss</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>CEMENT FLOORS</td>
<td>S-W Concrete Floor Paint</td>
<td>S-W Concrete Floor Paint</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>EXTERIOR WOOD SURFACES</td>
<td>S-W (Sherwin-Williams Pre-</td>
<td>Old Dutch Enamel, Gloss</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>EXTERIOR METAL SURFACES</td>
<td>painted Paint)</td>
<td>Old Dutch Enamel, Gloss</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>FACTORY WALLS (interior)</td>
<td>S-W Ep-Shel Mill White</td>
<td>Old Dutch Enamel or Enamelled</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>FLOORS (Interior Wood)</td>
<td>S-W Inside Floor Paint</td>
<td>Oil Stain or Floorlac Var-</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>GALVANIZED IRON SURFACES</td>
<td>S-W Galvanized Iron Primer</td>
<td>S-W Galvanized Iron Primer and Old Dutch Enamel</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>INTERIOR WALLS AND CEILINGS</td>
<td>Flat-Tone Wall Finish</td>
<td>Old Dutch Enamel or Enamelled</td>
<td>S-W Preserve Shingle Black</td>
<td>S-W Acid or Oil Varnish</td>
</tr>
<tr>
<td>GLASS AND DECKS</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>RADIATORS AND PIPES</td>
<td>Flat-Tone Paint</td>
<td>S-W Cold Paint</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>ROOFS—Metal</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>ROOFS—Wood Shingles</td>
<td>S-W Preservative Shingle Black</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>STACKS AND HOT SURFACES</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>STRUCTURAL STAIRS</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>TO DAMP-PROOF FOUNDATIONS</td>
<td>S-W Preservative Shingle</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>TO DAMP-PROOF INTERIOR WALLS ABOVE GRADE</td>
<td>S-W Plaster Bond</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
<tr>
<td>WOOD PRESERVATIVE</td>
<td>S-W Preservative Shingle Black</td>
<td>S-W Mastic (If Gal-</td>
<td>S-W Epoxy Floor Paint</td>
<td>S-W Oil Varnish</td>
</tr>
</tbody>
</table>

---

**RESIDENCE at Joplin, Missouri: Architect, Truman E. Martin. Finished completely inside and out with S-W Materials.**
tor the most humble household. Not only are several outlets per room required for lighting, but additional outlets are needed for the various appliances which give comfort, cheer or reduce labor to mankind.

The Home Which Electricity Built

The building of the modern home represents more than the mere disposal of so many cubic feet of clay, plaster and lumber, such as our pioneer ancestors considered adequate. It represents more than the conception of an attractive interior, embodying the artistry of masters in the plastic and mural arts.

The modern electrical home is essentially a vital, a responsive creation, which provides those comfort units—those time-saving, labor-saving, sanitary-and-health-favoring factors which humanity, over an indefinite period of time, has considered necessary for its well being and happiness.

The modern home, adequately wired, is truly the home which electricity has built.

The modern home is properly wired when it is being built. That is the ideal time to think of additional outlets for every room—every part of the house, from cellar to garret.

Extra Outlets to accommodate the laundry workers, the electric washer and ironer. And plenty of light outlets near the tubs, the furnace, the work bench, preserve shelves and coal bins.

Extra Outlets to accommodate the kitchen servants, the food mixer, the toaster, the plate warmer, the dish washer and other appliances. Not forgetting plenty of light overhead from the kitchen lighting unit, the local sink and range lights.

Extra Outlets in the dining room and living rooms to accommodate the floor and table lamps, the electric cleaner, the table cooking appliances.

Extra Outlets in the bedrooms, to accommodate the boudoir and floor lamps, the wall brackets, the electric cleaner, the vibrator, hair dryer and curler.

Extra Outlets in the bath room for mirror lights, radiant heater and the numerous electrical health-givers which medical men so highly recommend.

Extra Outlets for all the other unnamed parts of the home, wherever one of the helpful electrical labor and time-saving appliances can bring greater comfort and pleasure.

The Red Seal Home is the Home of Today—of Tomorrow

And now we come to the latest development in modern home building—The Red Seal Home.

The Red Seal Home is the home which has been adequately wired for electric comfort and convenience in accordance with a carefully worked out plan and accurate and complete specifications.

The Red Seal Home is the home which is offered by the entire electrical industry to the public, with the Society for Electrical Development as the national sponsoring body behind the movement.

Ample publicity means will be provided so that the layman may identify a home so wired. These will be in the form of large, distinctive, announcement cards carrying the copyrighted Red Seal design. Such cards will be attached to the front of the building in two forms: one before, and one after, the wiring has been done, so that everyone will know that the electrical features of the home are on adequate, liberal lines. There will also be copies of the Red Seal emblem in decalcomanique form for transferring to the metal service box as a permanent endorsement of the electrical facilities of the home.

The procedure by which Red Seal privileges are granted to local interests is very simple, yet is so arranged that the public receives ample assurance that its interests are protected against unscrupulous concerns and individuals which might try to operate the plan solely to their own ends.

In the first place, the Society for Electrical Development, the national sponsoring organization, has full copyright to the plan, and will exercise jurisdiction over all licenses granted to local leagues or other properly constituted electrical bodies handling the matter. These organizations thus licensed are authorized to grant builders and wiring contractors necessary credentials, as already outlined, which inspection has proved that the Red Seal standard has been strictly adhered to.

A Keen Public Demand Exists for Adequate Wiring

That there has been a keen, unsatisfied demand for adequate wiring has been proved beyond a doubt by facts gathered over a number of years, from actual demonstrations and surveys in all parts of the country.

The outstanding and most unbiased form of public contact in this connection has been through the medium of Electric Home Exhibitions. Such exhibitions are in the form of non-commercial, educational activities, usually fostered and managed by an electrical league or other co-operative body representing all branches of the electrical industry. By making suitable arrangements, a model home is erected, adequately wired, completely furnished and equipped with modern lighting fixtures, portable lamps, electric cooking devices, labor and time-saving appliances, etc.

A comprehensive form of publicity is employed to invite the public to visit the model Electric Home, and to see by actual demonstration the full comfort, charm and conveniences of a home which is not only architecturally pleasing, but wired for electric service in the full meaning of the term.

In practically every case where such exhibitions have been

(Continued to page 190.)
The Ideal Rolok-Bak Wall Has the Same Pleasing Appearance as Any Brick Construction

New Rolok-Bak Brick Wall

Lowest Cost and Strongest Hollow Wall Construction

Why use any but the best when you can build the Ideal Rolok-Bak wall at less cost than for any hollow back-up?

People WANT brick construction. Homes made with these standard units of burned clay are easier to sell.

6c per sq. ft. for back-up

An 8-in. wall requires only 4 brick on edge. With brick at $15 per M, that means only 6c per sq. ft. Bricklayers AVERAGE 650 brick on edge per day in an 8-in. wall containing the usual number of windows.

When you build the Ideal Brick Rolok-Bak Wall, you handle only ONE material, get a perfect bond for every brick, and have a wall superior to any veneered hollow back-up.

Send 25c for “Brick—How to Build and Estimate.” It gives all details.

The Common Brick Manufacturers' Association of America
2131 Guarantee Title Building, Cleveland
Unobstructed Floor Space

The Growing Use of Roof Trusses Is a Great Advantage to Many Types of Business Buildings

By H. G. TREGILLUS, Structural Engineer

The matter of floor space is of vital importance to both owner and architect and in order to meet the requirements of the owner the architect frequently has the difficult problem on his hands, then again the owner who wishes to sell his building is frequently in difficulty because a certain partition, column or some vital structural unit of the building is so situated as to interfere with the requirements of the proposed purchaser.

The obvious solution is to eliminate all such obstructions as far as may be practicable. This naturally leads to the consideration of trusses, girders and arches. The present discussion will be confined to roof trusses.

In the Chicago district the value of the trussed roof has now become pretty well recognized and the number of one story buildings utilizing this construction is surprisingly large and their uses are unexpectedly varied.

One would expect to find trusses spanning garages, dance halls, armories, etc., but it is somewhat surprising to find a row of narrow store buildings so constructed. This however is now done and the advantage is apparent.

A one story building with perhaps 150 foot frontage and the depth of 150 feet may be economically built with three spans of 50 feet the intermediate supports being brick walls, metal or wood columns, the front wall being carried on lintels with about two supporting columns in each 50 foot space.

This room 150 feet by 150 feet or the three rooms 50 feet by 150 feet each as the case may be, can now be divided into a row of narrow store buildings so constructed.
An American Universal Floor Surfacing Machine actually does the work of six men and does it better. Just stop to think what it would add to your income over a period of a year if you took six men off your pay roll who are now earning good wages on their hands and knees scraping floors.

It may be hard to realize that the "American Universal" machine has actually cut the cost of floor scraping eighty per cent, but hundreds of users are proving it by actual tests every day. Builders and contractors who are now using American Universals are not only surfacing floors for about one-fifth the cost of hand scraping, but are turning out better work.

One unskilled man with an American Universal machine not only during the busy season but in off months when business is slack. A number of them keep from five to ten American Universals busy every day in the year on jobs for other contractors and their own work.

Write Us for Free Details
and full particulars regarding the wonderful, money-saving, profit-building possibilities "American Universal" machines offer to the live contractor and builder. Have us send you descriptive literature and letters from dozens of enthusiastic users.

The American Floor Surfacing Machine Co.
515 So. St. Clair Street, Toledo, Ohio

CUT OUT AND MAIL THIS COUPON TODAY

The American Floor Surfacing Machine Co.,
515 South St. Clair Street, Toledo, Ohio

Please send me without any obligation on my part full information about the "American Universal" Floor Surfacing Machine.

☐ I am a building contractor.
☐ I am interested in becoming a floor surfacing contractor.

Name: ..................................................
Street: ..............................................
City: ..................................................
State: ..............................................
Unobstructed Floor Space

Interior of Hockey Rink at Duluth. Width of building, 145 feet. Twelve steel trusses spaced 21 feet on centers. Roof of 1-inch sheathing on wood joists. Lower chords of trusses are not braced.

The writer has been called on time and again to arrange posts or columns manufacturing buildings to custom in one story light tically two main floors. The lower story was obstructed by columns which support the floor above. The upper story was spanned by trusses with the metal ceiling beneath them, thus giving the owner a practically impossible without roof truss construction.

Such alterations obviously would be impossible if the ordinary construction for small store buildings had been followed. The customary brick partitions would have hampered the alterations and even though the alterations might have been possible they would be almost certain to entail the cutting of openings and the inserting of lintels.

With the truss construction, however, partitions of two by four studding are easily torn out or constructed. The writer knows of several cases of this sort where alterations have been very profitable for the owner but which would be practically impossible without roof truss construction.

In one small town in Wisconsin a department store build- ing was erected in which the street level on one side was one story lower than the one on the other side, giving practically two main floors. The lower story was obstructed by columns but the upper story was spanned by trusses with the metal ceiling beneath them, thus giving the owner a room some 75 by 100 feet without obstruction. This has proved most satisfactory. He is able to arrange his show cases and aisles wherever it best suits him without having to avoid any supporting columns while in the floor below the location of the aisles is definitely established and cannot be changed on account of the columns which support the floor above.

It has generally been the custom in one story light manufacturing buildings to arrange posts or columns some 20 feet apart each way. The writer has been called on time and again to put on the attendance has been so great that long lines of interested home builders have waited in the streets, sometimes for hours, for the privilege of entering the magic portals of the electric home to view its comfort and labor-saving marvels. During the period such homes have been put on, millions of people have had the pleasure of learning first-hand the great, unused possibilities of electric service. And the interest evinced has not been confined to the building interests, the architects, the builder, the realtor, the people in that city, architects, owners, and builders have never had the matter of trusses brought to their attention in the right way at the right time and it is hoped that the above remarks may help solve some problems which are causing perplexity on the drawing board, in the office, or in the factory.

Red Seal Plan
(Continued from page 186.)

The only reason that can be given for this state of affairs is that the people in that city, architects, owners, and builders have never had the matter of trusses brought to their attention in the right way at the right time and it is hoped that the above remarks may help solve some problems which are causing perplexity on the drawing board, in the office, or in the factory.

The Red Seal Plan to Assure Adequate Wiring has not been developed overnight. It is not the fancy dream of men who know little of the wants of the public and who are attempting to pass an unwanted luxury to them. The Red Seal Plan is the electrical industry's answer to a crying need of the day for a suitable, desirable standard of electrical wiring which will not only make the home of today and of tomorrow more charming and comfort-giving than it has been in the past, but will prove an economic factor in reducing labor and keeping a home considered modern today, fully up-to-date in the years to come.
HARDER THAN THE BRICK IT HOLDS

Above all, the one requisite in mortar is high bonding quality. If it hasn’t that it can’t perform its mission.

The following extract of a letter from Graham, Anderson, Probst & White, Chicago Architects, illustrates a practical test of Carney on a job.

“In making connections between the north and south section of the Wrigley Building, it was necessary to cut into the brickwork of the south section, which had been laid up in Carney two years ago. We found it impossible to get out the brick without cutting them to pieces, due to the bond.”

Everywhere Carney is used, you’ll find the same condition—a bond harder than the brick it holds.

Things You’ll Want to Know About Carney

Mixing errors never occur with Carney—if too much sand is added, the plasticity is affected, making troweling difficult. The quality of the finished wall is thereby insured.

Carney works perfectly with 4 parts sand—saves material.

Carney is easy to mix—add water and sand only. Reduces labor costs.

Carney is the perfected cement for brick and tile mortar.

THE CARNEY COMPANY

Cement Makers Since 1883
MANKATO, MINNESOTA

Mills at Mankato, Carney, Minn.

DISTRICT SALES OFFICES: Leader-News Building, Cleveland; Chamber of Commerce Building, Chicago; Omaha National Bank Bldg., Omaha; Syndicate Trust Building, St. Louis; Book Building, Detroit; Builders’ Exchange, Minneapolis.

Specifications: 1 part Carney to 4 parts sand.
$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is going to edit this Department and will pay $2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

Cement Hoist and Distributor

In cement construction, where labor enters so largely into the cost, anything that will save time and labor means dollars in the contractor's pocket. A Denver man, contracting concrete construction, found his work greatly facilitated by the portable tower, and cement distributing trough, shown in the accompanying photograph, which was originated by him.

The hoisting tower is constructed in sections, of light angle iron, and mounted upon the rear end of a small truck. The latter, when blocked up behind, furnishes the power for hoisting by a drum mounted on the bed, and connected by a chain gear to a sprocket fitted to the rear hub. When ready to move, the power is lowered onto the body of the truck, the chain is removed, and the truck is ready to proceed to another job.

The telescoping trough for distribution of cement is mounted by a pivot to the top of a tripod, and may be quickly swung to any point of the wall desired. The usual metal pipe conveys the concrete from the elevator to the boxed-in apex of the trough, where a cement sack serves for a connection to prevent waste of cement. These devices will prove a boon to the small contractor who is moving frequently from job to job.—Jos. C. COYLE, Denver, Colo.

Studding "Jimminie"

While erecting a building of lumber which had been piled out of doors for some time, difficulty was met when it came to using the material which was badly twisted and warped from the effects of the sun. The straight pieces were used for the sill and plate, and this left the twisted ones for the studding.

A device was made as shown in the sketch, to twist the studding back to the proper position before spiking at the top through the plate. A piece of oak 2 by 6 inches was notched as shown, so that it would fit snugly over the studding. A ½-inch bolt was placed through the stick just back of the notch to prevent splitting. The device is used as shown at the top of the sketch, the outer end being moved as indicated by the arrow. The oak stick should be about 6 or 8 feet long.—Harold Jackson, Kankakee, Ill.

Two Practical Ideas

In doing cabinet work, or any fine work of the sort where it is desirable to hide nails or screw holes, the most effective method is to raise the wood with a fine ½ or ⅜-inch chisel. After the nail or screw has been driven the piece of wood which was removed can be glued back in place by clamping. If carefully done even an expert will be unable to find the place when finished.

Another idea is useful in making doors where no clamps are available and mortise and tenon construction is used. Insert two wedges in the end of the tenon and let them protrude about ⅜ inch. Cut the tenon ⅜ inch shorter than the mortise. When driven up with a hammer the wedges tighten and prevent the joints from opening up.—Wm. H. Harris, Englewood, Colo.
Our responsibility  
—your protection

That is what the Disston name on a saw or tool amounts to.

The Disston name is our responsibility because the Disston reputation rests squarely upon the quality of every saw and tool which bears that name.

The Disston name is your protection. You are sure of getting standards of quality and workmanship that have been tested by three generations of carpenters.

You can go into a hardware store in any corner of the earth and buy with confidence the saw or tool marked "Disston".

Henry Disston & Sons, Inc.  
Makers of "The Saw Most Carpenters Use"  
Philadelphia, U. S. A.
To Stretch Screen Wire

Here is a simple method of stretching screen wire on screen frames. Place two frames on the bench with the tops even together. Tack the wire at the bottom end of one of them and then roll it the length of both frames, without attempting to draw it tight, and tack at the bottom end of second frame, being careful to get it straight.

Next raise one of the frames and slip a thin strip of wood between the tops of the two frames. Press the raised frame back flat on the bench. The wire will now be stretched tight and can be tacked all around. Finally put on the moulding and trim the wire.—William B. Stapp, Norton, Kan.

Weight Plan for Narrow Mullions

It is sometimes necessary to use mullions which are too narrow to admit the usual four weights for adjacent windows. By means of the arrangement shown in the accompanying sketch both windows may be operated with only two weights. The top weight holds the two lower sash and the lower weight holds the two upper sash.

The cord is passed through a pulley at the top of the weight. For the upper sash it passes through holes at one side of the window frame and one end is fastened to each sash. For the lower sash the cord is passed through holes just above these where the space between the sash is a pulley at the top of the frame and one end is fastened to each sash. For the lower sash the cord is passed through holes at one side of the window frame and one end is fastened to each sash. For the lower sash the cord is passed through holes above these where the space between the sash is narrow to admit the usual weight. For the upper sash the cord is passed through holes at one side of the window frame and one end is fastened to each sash.

Figuring Lumber Footages

There are a dozen different ways to figure the board footage in a given piece of lumber. Most of these methods are involved and require a great deal of figuring. An easy method to arrive at the footage in stock, especially in odd sizes, is to take the inches to the foot, multiply by the length and divide the total by twelve.

For example:

1 pe 1\% inch by 2 inch by 10 feet = 1\% inch by 2 inch = 3 inches to the foot............ 3 \times 10 = 30 inches
1 pc 1 inch by 8 inch by 20 feet = 1 inch by 8 inches = 8 inches to the foot............. 8 \times 20 = 160 inches
1 pc 1\% inch by 2 inch by 5 feet = 1\% inch by 2 inch = 3 inches to the foot............ 3 \times 5 = 15 inches
1 pc 1\% inch by 2 inch by 12 feet = 2 inches to the foot = 3 inches to the foot............ 2 \times 3 = 6 inches
1 pc 1\% inch by 2 inch by 10 feet = 3 inches to the foot = 3 inches to the foot............ 3 \times 10 = 30 inches

Total = 204 inches

This rule holds good in all cases and comes in handy when figuring 4/4, 5/4, and 6/4 material. It is especially useful in figuring such work as cornices, three or four member trim and the like where all the inches in the combined members can be added and then multiplied by the total length.—C. L. Smith, Jackson, Miss.
You Can Become a Building Expert

Plan Reading. Every man who has got very far ahead in any building trade can read blue prints. No man can expect to be a first rate foreman or superintendent until he knows what every line on a plan means and how to lay out and direct work from the architect's plans. By the Chicago Tech. Method you quickly learn to read any plan as easily as you read these words.

Estimating. Of course a man who wants to be a contractor or to hold a big job in a contracting organization must know how to figure costs of labor, material, and everything else that goes into any kind of building. The Chicago Tech. Course covers every detail of this important branch—shows you just how it is done from actual blue print plans.

Superintending. How to hire and direct men, how to keep track of every detail of construction as it goes on, how to get the work done in the least time at the lowest cost is also fully covered in the Chicago Tech. Builders' Course.

Also special courses in Architectural Drafting for builders, taught by practical men. These explained in Special Catalog "D" sent on request.

CHICAGO TECHNICAL SCHOOL FOR BUILDERS
Dept. 936, Chicago Tech. Building, 118 E. 26th St., Chicago, Ill.

Mail the coupon for Blue Print Plans and 24-page Book:

"How to Read Blue Prints"

Blue Prints are interesting to every man in the building trades. And more! They are the key to every builder's success. For until you can read and understand blue prints you will probably have to be satisfied with only a scale wage. The man who can read blue prints can become foreman, superintendent, or have a business of his own. To help every man who really wants to make money and get ahead in building, Chicago Technical School for Builders offers absolutely free these Blue Print Plans and a 24-page book "How to Read Blue Prints."

What this book is

This book is written by an expert...a practical builder who knows the game from top to bottom. It tells how different materials are shown on blue prints, how "sections" and "elevations" are shown on plans, how to lay out a building from a plan, how to take off quantities...and all the other interesting and important facts regarding blue prints. The book is easy to read as your newspaper...written in plain, everyday English that everyone can understand. "How to Read Blue Prints" will be mighty helpful to you. Aside from the real help it gives you it will show you how clear and plain and easy the Chicago Technical Builders Course is...how quickly you can learn in your spare time...at home...to become a building expert.

Learn at Home to make more money

For 20 years the Chicago Tech. School for Builders has been training men to advance and make more money in building. Hundreds of successful men, superintendents and contractors, owe their success to their Chicago Tech. training. We train you by mail...in your spare time...at home.

Send the Coupon...Now

With the free Blue Print Plans and our book "How to Read Blue Prints" we will send you another book...also sent absolutely free. It tells all about the Chicago Tech. Builders course...directed by practical building experts...tells what others say this course has done for them...shows pictures and gives all the facts about our method of training men...quickly...for the jobs that pay most money. This may be your golden opportunity. It costs you nothing to find out all about it. So send the coupon in now...for the free plans and books.

Mail the Coupon—NOW

CHICAGO TECHNICAL SCHOOL FOR BUILDERS
Dept. 936, Chicago Tech. Building, 118 E. 26th St., Chicago, Ill.

Please send me your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below.

[Write or print name plainly]

Name...........

Address...........

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

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
INSTRUCTIONS IN
ROOF FRAMING
This Department Appears Every Month in American Builder

Dormer Framing
By JOHN T. NEUFELD

The dormer roof illustrated in figure 32 presents some of the difficult roof framing problems connected with dormer framing.

When framing this dormer we must first set the two main rafters lettered A. The main roof has an 8 inch rise per foot run—\(\frac{1}{3}\) pitch. The length of these main rafters can be found by multiplying the length of the rafter for one foot run (as given in tables) by the number of feet in the run. The length per foot run is 14.42 inches for a \(\frac{1}{3}\) pitch. The run of the rafter is 14 feet. The total length is \(14 \times 14.42 = 201.88\) inches = 16 feet 9\%\ inches.

Another rafter “B” is nailed to the rafter A for stiffening the roof. After these rafters have been framed the dormer walls are framed. If we wish to use the square for marking the cut at the lower end of the studs for the side of the dormer we may use the same numbers as for the plumb and seat cut of the common rafter, 8 and 12 in this case, marking on the arm on which the 8 is taken.

The front of this dormer is 4 feet 0 inch above the main roof at the face of the dormer. This makes the length of the plate of the dormer 6 feet 0 inch to the point D. This is found as follows: The rise of the roof is 8 inches per foot. The total height of the dormer or the rise of the main roof up to the level of the dormer is 4 feet 0 inch. To make the rise the run must be \(48 + 8 = 6\) feet because it rises 8 inches per foot run.

The next step is to put in the valley rafter E. This rafter covers a 6-foot run in either direction. To find its length we proceed as for hip rafters. The length of hip per foot run of common rafter (given on tables) is 18.76 inches. This is the length corresponding to 1 foot of run of the common rafter. This total length would be six times this = \(6 \times 18.76 = 112.56 = 9\) feet 4\%\ inches. From this we must deduct one-half the thickness of the ridge on one side and one-half the thickness of the rafter on the other side. This valley rafter as it meets the ridge and common rafter has two side cuts and a plumb cut at the top.

The plumb cut at the top and the seat cut are laid out by using the rise per foot run on the tongue and 17 inches on the blade. (The run of hip is 17 inches per foot run of common rafter.)

The side cut is the same as the side cut of a hip rafter taking the number representing the length per foot run on the blade of the square and 17 inches on the tongue; laying this on the upper edge of the rafter and marking along the tongue. This side cut was illustrated in our last lesson.

The valley rafter G known as the short valley is figured by the run of the dormer rafter. The dormer is 8 feet wide, therefore, the run of the common rafter is 4 feet. The length of valley per foot run is the same as for the long valley = 18.76 inches. The length of the short valley is 18.76 inches \(\times 4 = 75.04\) inches = 6 feet 3\%\ inches.

The seat cut is the same as for the other valley. At the top is a plumb cut using the numbers 17 and 8. The cut across the top is a square cut regardless of the pitch of the roof.

The next rafters to put up are the common rafters H for the dormer. This dormer has the same pitch as the main roof. The length per foot run for a \(\frac{1}{3}\) pitch roof, for the common rafter is 14.42 inches. The run is 4 feet 0 inch and the length is \(4 \times 14.42 = 57.68 = 4\) feet 9\%\ inches. The numbers to use for the cuts are 12 and 8 as the rise per foot is 8 inches.

The rafters K and N are Jack rafters. These are similar in many respects to the common rafters only that they do not extend the full length, as the common rafters do, as the rafters are spaced 2 feet 0 inch on centers (in this case), therefore the first Jack rafter is 2 feet 0 inch from the corners and the run for this rafter is 2 feet 0 inch. The length would be two times the length per foot run = \(2 \times 14.42 = 28.84 = 2\) feet 4\%\ inches. The rafter K is the...
"Re-roof and pay in the 'Genasco Way'"

This is the message we are broadcasting to millions of home owners through our national advertising of Genasco Latite Shingles.

Re-roofing the "Genasco Way"—right over old roofs—means avoiding the cost, dirt and risk of tearing off the old shingles.

Paying the "Genasco Way"—in easy monthly installments—means that your customers get the work done on credit, and you, the builder, contractor or roofer, get cash on completion of the job.

Let us send you details at once. There's no obligation.

The Barber Asphalt Company
PHILADELPHIA


New York Chicago Pittsburgh St. Louis Kansas City San Francisco

Genasco Latite Shingles

same length as the rafter N only that the latter has a tail end.

In measuring these it is best to measure along the longest side as the length obtained is to the center of the hip. Measuring along the longest side will take care of this as it makes it practically the same as shown by the detail at the lower right hand corner.

The cut at the upper end of the Jack rafter has a double bevel. It is spoken of as both a plumb or vertical cut and also a side cut. To mark for the vertical cut we use the same numbers as for the common rafter, 12 and 8. For the side cut the rule is to use the numbers representing the length per foot run on one arm of the square and the run of 12 inches on the other arm, therefore the side cut would be 9½ or 14.42, say 14½ and 12.

The rafter J is the same as the common rafter H except that the toe has to be cut off. The rafter K is known as a valley jack. It is 2 feet 0 inch from the rafter J. The run of this rafter is 2 feet 0 inch less than the run of the common rafter. The length is 2 × 14.42 = 24.84 inches = 2 feet 0 inches. The top cut of this rafter is the same as the top cut of the common rafter but the cut at the lower end is different. Here it frames against the valley rafter. To mark for this cut we use the numbers 12 and 8 on the square and mark on the side of the rafter for a plumb cut as shown in Fig. 33. As this end also has a side cut we must mark for this on the upper edge of the rafter. A square placed with the blade along the rafter and the tongue along the ridge would give the numbers to use for this side cut if the square was large enough. However, we may place a square along the rafters as shown in the illustration, so that the tongue meets the edge of the valley at the 12 inch point.

The length on the square then will be the same as the length per foot run =14.42 or 14½. From this we obtain the rule. To lay out the side cut of a jack rafter use 12 on one arm of the square and the length per foot run on the other arm. In this case we use 14½ or say 14½ and 12 to lay out the angle for the side cut to fit against the valley. The hip rafter M has the same length per foot run as the valley 18.76 inches. The length is 4 × 18.76 inches = 75.04 inches = 6 feet 3½ inches. The top and plumb cuts for this rafter are laid out by taking the numbers 17 and 8 on the square. This part is explained more in detail in the last lesson. The side cut for the hip is obtained by taking the length per foot run on the blade and the run of 17 inches on the tongue, thus 18½ and 17 would give the side cut for the hip.

**Framing an Eyebrow Window**

The following framing of an eyebrow window can be used where it is desired to make the inside ceiling of the same shape as the outside, or the roof. See figure 33.

Cut a rectangular piece in your roof and place headers B and C as though you were framing for a stairway. Headers B and C are made of 2 by 6s, if the rafters are 2 by 4s. For wide windows, these headers should be doubled. The next thing is to cut the curved rafter A which gives the shape of the front of the eyebrow window. The architect’s details will usually give the radii to use for cutting the piece A.

In this case, we have assumed the width 6 feet 0 inch and the radius for the various curves as 2 feet 0 inch. Piece A can be cut out of short pieces of inch boards and spiked together. This piece should be nailed vertically over header B.

The next step is to lay out rafters, 1, 2, 3, and 4. These are made of inch boards and should be placed close together. In this case, they are placed on 8-inch centers. It is best to lay these out on paper before starting to lay them out on the job.

The radius of the upper rafter, in this case, has been taken as 8 feet. This, of course, would depend upon the shape that the eyebrow is shown in the architect’s drawing. In the lower right-hand corner, the upper edge of each rafter is shown and the curve that it makes with the main rafter. In the upper right-hand corner, each rafter is shown separate, as it would be cut and spiked together.

One end of each of these 1-inch rafters is spiked to piece A and the other end, to header C. The headers B and C when made of 2 by 6 boards, can be chipped off at the bottom, so that the ceiling line is unbroken. For sheathing, several thicknesses of thin boards can be sprung to shape on the ground before putting them on the roof. For the ceiling, metal lath can be used. The sheathing boards are run in the same direction as they run on the main part of the roof.

**Problems**

After studying the framing of the dormer of figure 33, it will be well to assume a different pitch for both the main roof and the dormer and to figure the lengths of the different rafters.

1. Assume that both the main roof and also the dormer have a 10 inch rise per foot run or ½ pitch. Find the height of the front of the dormer.

Use this table.

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Length per foot run</th>
</tr>
</thead>
<tbody>
<tr>
<td>½</td>
<td>13.42 inches</td>
</tr>
<tr>
<td>⅔</td>
<td>14.42 inches</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>⅔</td>
<td>15.00 inches</td>
</tr>
<tr>
<td>¾</td>
<td>15.62 inches</td>
</tr>
<tr>
<td>¾</td>
<td>16.97 inches</td>
</tr>
</tbody>
</table>

2. Find the length of the hip rafter M.
3. Find the length of the valley G.
4. Find the length of the valley E.
5. Find the length of the Jack N.
6. Give the numbers for the side cut of the Jack rafters.
7. Give the numbers for the side cut of the valley-G.
8. Give the numbers for the side cut of the valley E.

(Continued to page 220.)
Hundreds of inquiries are coming in
The public wants the Triple Insulated Home

INQUIRIES from hundreds of home-seekers who have seen the advertisements of the Triple Insulated Home are tangible evidence of the keen interest which it has aroused. These inquiries are live prospects which we turn over to local builders to take care of.

The public wants the Triple Insulated Home because of the beauty, permanence and fire-safety of its asbestos roof, the comfort and economy of its Houseline building felt, and the fuel saving of its Asbestocel heating system insulation.

The Triple Insulated Home can be built by any builder. It can be of almost any type of construction that the builder prefers. However built, it will be a more comfortable, beautiful, economical, and a safer house.

It carries the prestige of a better product, the prestige of Johns-Manville reputation, and the prestige of a nationally advertised, trade-marked commodity. It is much easier to sell.

Write for complete details of our epoch-making selling plan.
Editor's Note: The American Builder does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address American Builder Information Exchange, 1827 Prairie Ave., Chicago.

Improved Model Convertible Level

Some changes have been made in a well known convertible level which improve it materially from the standpoint of the user, while the price remains unchanged. The diameter of the horizontal circle which reads to five minutes, has been increased to four and a half inches, which enables quick reading to the vernier.

The clamp and tangent screws have been placed together directly under the eye-piece end of the telescope, which makes them much easier of access to the user and accomplishes a worth-while saving of time. The leveling cups are of the ball and socket type, positively preventing their being lost.

The new model is equipped with a 12-inch telescope. It has 22 diameters which enable one to read the figures on an ordinary leveling rod at a distance of 800 feet. A new and complete instruction book is also furnished with the level. It is prepared in an interesting and simple manner, enabling the novice to gain a thoroughly practical working knowledge of the instrument in an hour's time.

This level is sold under an easy rental purchase plan, giving the user almost a year in which to pay for the instrument while using it.

Economical Small Woodworker

It is sound economy to have a small machine for small work. It saves time and effort to have a small machine at the workman's elbow, making it unnecessary for him to walk back and forth to the large machine where he is using more power and time than is required. A bench jointer, made in 4 and 6-inch sizes, is designed to fulfill the need of woodworkers who require a rugged, powerful machine that does clean accurate work quickly, which is rugged enough for permanent installation and yet light enough to be readily portable, to be taken right out on the job.

The tables are long and smooth and both front and back tables raise and lower smoothly and easily by means of small hand wheels. The adjustment of the front table of the 4-inch machine allows for a depth cut of 3/4 inch and rabbeting 3/8 inch, on the 6-inch machine the depth is 1 inch and the rabbett 5/8 inch. Special shaped knives can be used as provision has been made to quickly widen the throat by removing steel lips. Safety is provided by a guard which automatically covers the knives.

The 4-inch machine is driven by a 1/4 h.p. motor while a 3/4 h.p. motor is used for the 6-inch machine. All machines are equipped with 40 degree, propulsion-induction type, continuous duty motors. Power can be obtained from any lamp socket, and the machines are equipped with 10 feet of heavily insulated cable and connector. The fence can be adjusted to any angle from square (90 degrees) to 45 degrees. The floor space required is 28 by 30 inches.

Association Office Moved

The Northwestern Lumbermen's Association announces the removal of its offices June 1 from the McKnight Building to 301-6 Hennepin Avenue, Minneapolis, Minn.
A Well-Lighted Basement

The prospective buyer of the house you build is sure to be favorably impressed when he finds you offer him among other good features, a well-lighted, well-ventilated basement. You're adding a big selling point when you can show him YPS Copper Steel Basement Windows in the foundation. The house is worth more to him—but the YPS Basement Windows haven't cost you an extra penny.

Cheaper Than Wood

YPS Copper Steel Basement Windows—if you consider the cost of wood frames, wood sash, hardware, carpenter's time in fitting and painter's time in priming—can be installed for less money than the old-fashioned wood sash. And there are nine other reasons why home buyers and contractors alike prefer YPS Copper Steel Basement Windows. One of these is the special cam-action burglar-proof lock.

To make it easy for you to find out ALL about YPS Copper Steel Basement Windows, there's a handy coupon below for you to fill out—and mail.

THE YOUNGSTOWN PRESSED STEEL COMPANY
159 University Road Warren, Ohio
New York Boston Philadelphia Detroit Chicago Los Angeles San Francisco

YPs Copper Steel Basement Windows

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
**An Electric Dishwasher Sink**

*Almost* overnight the old-fashioned kitchen sink has been revolutionized in its usefulness by the introduction of a new model dishwasher sink which has recently been placed on the market. Architects and builders everywhere have been quick to grasp the appeal of this piece of household equipment and are specifying it in increasing quantities for the better class homes and apartments. Its appeal is particularly strong because of the growing tendency toward the design of labor and space-saving equipment and speculative builders see in this unit a strong appeal for creating a more ready sale or lease of homes and apartments. This entire sink unit occupies a space only 42 by 22 inches. At one side the dishwashing compartment, which is the same in design as the separate dishwasher made by this well-known company, is built into the sink and can be covered to form a drain board. The racks and trays used in the washer are covered with white enamel surfaced, rubber finish. The unit is connected directly with the plumbing and electricity which operates the dishwasher. The whole appliance is finished in a beautiful porcelain enamel and is installed in the same manner as the ordinary kitchen sink.

**A New Colored Tile**

A HIGH grade floor tile adaptable for hotel lobbies, halls, lounge rooms, rest rooms, hospitals, banks, theatres, restaurants, high class apartments, private residences, consists of finely crushed rock, a mineral binder and permanent mineral colors. This aggregate is consolidated under hydraulic pressure and the tile are subsequently subjected to a treatment which imparts great hardness and durability.

These tiles are of uniform texture, hardness and color throughout the body of the tile. They are free from glaze and other superficial effects. Notwithstanding the most severe wear, the color remains constant. Due to the great pressure applied in their manufacture, they are of very close texture and low absorption. They cut true, bond well and clean readily. These tiles are manufactured in a great variety of colors and shades. Only permanent mineral colors are used, but there is practically no limitation to the coloring effects available in reds, browns, greens, yellows, blues, blacks and grays. They are furnished in select grades only. No seconds or culls are offered. They have exceptionally artistic and decorative merit and will appeal especially to those who wish to carry out carefully considered color schemes in tile flooring.

---

**Special Features of Aluminum Rule**

Several special features incorporated in the design and construction of a well-known aluminum rule will be of interest to users of such instruments. The features here referred to apply to two rules in particular. One instrument consists of twelve 6-inch sections graduated in 16ths and marked on both sides. Each section is ¾ inch in width. The other, the vest pocket rule, is made up of a series of 4-inch folds or sections marked in 16ths, inches and feet on both sides, with ½-inch width. Both have the two end sections graduated in 32nds.

This Folding Aluminum Rule Has Been Designed with a Number of Features Which Recommend It and Is Made of a Special Spring Metal.

The special construction features of these rules can be listed as follows: incorporation of a special spring aluminum metal, which is non-brittle, non-breakable and impervious to rust and corrosion; special spring brass joints, so designed and assembled that they always remain snug and hold the rule true and rigid when opened full length; short overall length of the rule when folded for facilitating carrying; extremely light weight; incorporation of black, stamped-in figures and graduations to insure visibility.

**Drafting Table Machine**

Old methods of drafting are rapidly being changed in numerous modern offices of large concerns and in many smaller offices by adoption of a drafting machine that is intended to save much right hand motion required of a draftsman. Advantages of this recent invention are that the user saves from 25 to 50 per cent of the time ordinarily required to make a drawing because his mind and hands are freed from unnecessary mechanical drudgery and other details that prevent concentration on work.

The device is a machine attached to the drafting table and is compact and self-contained, cannot fall and does not rub against the board when being moved. It relieves the operator from the constant reaching for and using of T-square, triangle, scales, erasers, protractors and other instruments used in drafting. Thus the operator is mentally more alert and his work is more efficient. It entirely eliminates holding the drawing edge in actual alignment, moving it from the line, picking up a scale, turning the scale, picking up the eraser and using it, picking up the drawing edge again, and many other operations necessary in ordinary methods of drafting.—R. G. Thackwell.
Facts about Sani Onyx

Physical Characteristics—Sani Onyx is a dense, uniform, vitreous material, wear resisting, non-porous, and non-absorbent; that is acid, alkali, stain and weather-proof. It combines every advantage of quarried marble, tile, slate and granite with other desirable features all its own.

Five Colors Supplied—Sani Onyx is supplied in white, ivory, black, blue and gray. Coloring is uniform throughout the entire thickness of the material. Surface wear does not result in any change of tint.

Plain or Tile Patterns—To provide still greater range in decoration, Sani Onyx is supplied in both plain and tile pattern sheets. Tile pattern is in six-inch squares.

Permanent Decoration—By special process, stock or special designs may be etched into the surface of Sani Onyx, giving two and three tone effects. In addition, ceramic coloring can be fused into the surface so that the decoration becomes an integral part of the material. Both methods are equally lasting.

Sani Onyx combines lasting beauty with the utmost in utility and maintenance economy in every type of building. When used for walls, ceilings, and wainscoting in bathrooms, toilets, hallways and kitchens, it enhances the value to owner and user and makes good buildings better and easier to maintain.

Backed by Real Service

It has been a pleasure to work with many of America's leading builders and architects in planning for greater service, permanence, beauty and economy. The services of the Marietta Engineering Department are at your disposal, free, in planning for greater value to your client. This service includes actual blue print recommendations for specific projects. Utilize this cooperation on your present work to the profit of your client and yourself.

MARIETTA MANUFACTURING CO.
Main Office and Works—80 Brookside, Indianapolis, Ind.
Distributors and Construction Houses throughout the United States and Canada

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
In Place of Window Weights

This sash holder takes the place of window weights and pulleys. This new device consists of a pair of rollers attached to an adjustable tension spring. It is set in the side of the window sash, and can be adjusted to hold the window at any level to which it is raised.

It greatly simplifies the installation of windows, as no space need be allowed for weights, and the window frames can be set against a solid brick wall if desired. Due to the fact that the tension is adjustable, this can be used with any size or weight of window. The window lifts easily up and down, and yet stays at any desired level.

Motor Driven Centrifugal Pump

There was recently placed on the market a new motor-driven centrifugal pump which by its design effects a great-fuel saving. In its operation as applied to a heating system it tends to create a vacuum, returns the condensation from the return lines, coils or radiators that are on a line with, or below the level of the water in the boiler, thus eliminating any sluggishness in the heating system. At the same time it introduces live steam into the returns, throwing off heat into rooms instead of cold condensation. The vacuum that this pump creates permits the water to be boiled in the boiler at a lower temperature than otherwise possible, and thus effects a great fuel saving.

Another feature of this machine is the capacity of the pump which is between 4,000 to 7,000 feet, depending upon the size of the pump.

The design of the pump is simple, consisting of merely a bronze centrifugal pump with a bronze impeller. This impeller consists of a wheel revolving inside the pump case. As it revolves it touches only the water and does not touch or rub against any metal part, reducing the possibility of wear. With this construction thirty-two parts are eliminated, doing away with gears, pulleys, buckets, belt and pump valves.

This electrically driven pump has a wide variety of applications. It may be used advantageously in condensation, water supply, refrigeration, circulation and heating systems. It is driven by a 1/4-horsepower motor direct connected through a flexible coupling and will pump water from wells, cisterns or streams to farms, homes or commercial buildings without the use of any tank.

Another distinctive feature of this device is that either opening in the pump may be used as the outlet or inlet by merely reversing the motor. In addition, it is impossible to overload the pump since the capacity remains nearly constant regardless of the load.

Coated Waterproof Paper

The manufacturers of a waterproof building paper base their claims for superiority on the coating of the paper on both sides. The oils in uncoated paper will eventually dry out destroying the waterproof qualities but it is claimed that the coating of this paper seals in the interior oils, repels water and protects the paper against rain, wind, snow, dust and alkali in stucco, indefinitely extending its life and service. It contains no tar or other acids to corrode tin roofing or nails. The difference in cost between this and uncoated papers is small. It is sold in rolls of 500 square feet 36 inches wide.

A New Kind of Expansion Shield

In this age of concrete builders are always on the lookout for easy ways of fastening things to concrete. The practice has been to drill holes, insert screws or lag-screw shields, take a screw driver or monkey wrench and turn the screw home. One company has brought out a new expansion shield that is very simple to use. They claim that it saves fully 50 per cent of the time required in making the average installations.

This new shield permits a workman to use the work as a template, does away with the necessity of spotting for holes and removing the work until the hole is drilled. Holes for this new shield are the same size as the holes in the fixture itself. This is a supreme advantage in installing heavy machinery.

The shield is flanged top and bottom. Above the bottom flange is a soft metal wrap. When the shield is dropped in the hole and the nail driven home, the forced expansion bonds the soft metal wrap into the rough side of the hole and the bottom flange clinches the side with a vise-like grip far below the surface. The nail merely expands the metal. The top flange holds the lead.

In electrical work these shields are particularly useful in fastening conduit straps, anchoring switches and switch boxes, erecting panel boards, switch boards. They are made in seven sizes, from 3/16 inch by 3/8 inch to ½ inch by 2¼ inch.

Permanent Shade Cloth in Colors

A new permanent shade cloth, which was announced in July and which is tough, flexible, crackproof and can be washed with soap and water, is offered in a large variety of colors to meet every requirement of shade installation. The light colors, which are translucent, include snow, sunset, after glow, dawn, pearl, shadow, mist, and dusk. The dark colors are nearly opaque and include beaver, leaf, laurel, meadow, forest, midnight, and raven. The double tone colors are also practically opaque and are combinations of a dark color on one side and a light color on the other side. This combinations are laurel and snow, laurel and sunset, laurel and after-glow, meadow and snow, forest and snow.
"Isn't it bright and airy—almost as light as the rooms upstairs? It's one of the reasons why we bought the house."

A bright, airy Fenestra basement is one of the big advantages that home-buyers are looking for today. They want the whole basement flooded with light. They want a bright, airy laundry, a furnace room where they can see, and they want a playroom in the basement for the children.

Why not give your prospective home buyers what they want? Why not when Fenestra Basement Windows cost no more than wood windows? Why not when they will help you sell the houses you build?

But there are other reasons that interest the builder. Fenestra Basement Windows are easy to install in brick, hollow tile, concrete block, poured concrete or field stone. They come complete—sash and frame with hinges and lock attached. Dealers everywhere carry them in stock ready to deliver with your other foundation material.

You'll find similar advantages in Fenestra Case ment Windows and in Fenestra Garage Windows. We've prepared interesting literature covering all Fenestra products—you can get it by calling on the Fenestra Dealer in your town or by writing us.

DETOIT STEEL PRODUCTS CO., B-2260 E. Grand Boulevard, Detroit, Mich.
Factories in Detroit, Michigan, Oakland, California, and Toronto, Ont., Canada
For Canada: Canadian Metal Window & Steel Products, Ltd., 169 River St., Toronto, Ont.

Fenestra
for homes and apartments
schools and institutions
commercial buildings
all industrial structures

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Keeping the Trucks on the Road

It should then be the aim of every truck operator to keep his trucks in operation 100 per cent of the working time day. This may seem an impossibly, but there are many operators today who are doing very nearly this.

Essential to the accomplishment of such a record are inspections and records with the provision for repairs, when needed, to be made outside of regular working hours. The practice of big fleet owners can well be copied, with certain changes to adapt it to the conditions under which the smaller owner operates.

First consideration is given to the selection of drivers, by these operators. Very full information is obtained about every applicant for a job to determine whether he possesses the necessary knowledge for driving and the care of his truck and also whether he is a man who will feel the responsibility of his job and take pride in keeping his truck always at its best. Men who drive too fast, take chances, neglect oiling and generally abuse a truck, should never be employed. For the small operator who can not

A Truck and Trailer Outfit, for Handling Lumber. Which Is Designed for Rapid and Economical Service. Rollers in the beds of these units make it possible to remove the entire load at once, requiring but a few minutes' time.
Public Confidence Is The True Test Of Merit

Thousands of GMC users express their faith in GMC by the surest sign—repeat orders. They know that GMC never sits back and rests in self-satisfaction every time it does a good job. GMC keeps right on working hard to do a still better job of furnishing high-grade performance with economy. These haulage buyers use GMC's continuous advance in the furthering of their own progress. Why don't you investigate GMC's performance records?

GENERAL MOTORS TRUCK COMPANY  
Division of General Motors Corporation  
Pontiac, Michigan

General Motors Trucks
Here Are Two Units Which Are Used in a Yard Handling Bulk Material and Also Concrete Blocks. The dump feature of the bodies makes for quick handling of the bulk material and the square box sides are suitable for the blocks.

afford to employ a special mechanic for inspection and repair work, it is an economy to employ drivers who have considerable mechanical knowledge and are capable of inspecting their own trucks and making minor repairs when needed.

After the trucks have been properly manned, the next thing is to see that they are always properly driven, and for this purpose a set of simple rules should be instilled into every driver. The owner who is not personally familiar with the handling of trucks can easily obtain such rules from the company from which he purchases trucks and copies should be furnished to the drivers and conspicuously posted in the garage.

At the end of each day's work every truck should be given an inspection to see that there are no minor repairs or adjustments needed and a report of this inspection as well as of the mileage, gas consumption and general performance of the truck, for the day, should be made on a blank provided for this purpose. If these inspections are intelligently made and the reports properly filled out, it will be an easy matter to determine whether or not the truck is giving its best performance from a mechanical point of view.

The reports will also show whether the truck is being employed economically or whether there is too much idle time spent in loading, unloading or waiting for loads. If it is found that the reports show too much idle time it is up to the man who is in charge of the work to devise a means of eliminating this and keeping the trucks on the road.

The inspection will show whether or not any minor repairs or adjustments are needed. When needed such work should be done between quitting time and time for the next day's work to start. For this work a mechanic should be employed who will be a night man, if the owner operates enough trucks to enable him to employ a full time mechanic. After the trucks have come in from the job this mechanic will make inspections and then take care of oiling and greasing and make whatever repairs are needed during the time when the trucks regularly stand idle. In this way they will be in first class shape to start the next day's work without the loss of any working time.

Where it is not possible to employ a mechanic, and the operator must depend upon a service station for maintenance, it is well to employ drivers who are capable of making their own inspections and adjustments. Arrangements should then be made with the service station to take care of all repairs at night after the working day is finished. This will, in the long run, prove an economy.

Such maintenance as this will serve to keep trucks operating at their best most of the time, but even under such good care they will require a periodical overhauling. No piece of machinery, no matter how perfect or costly, can be operated day after day for a long period of time without showing considerable wear and requiring the replacement of parts where the wear is greatest.

The overhaul job should be planned for regular periods. Once a year will probably be sufficient and the overhauling should be so scheduled that only one truck will be laid up at a time, and so that all of this work will fall during the slowest portion of the year. In this way it can be accomplished with the least interference with work, and if it can come in winter, which is quite possible in the building industry, it can be handled by the service station during its slack period, probably at cheaper rates.

With regular maintenance any good truck will operate in a satisfactory manner and stay on the road its full day after day, giving splendid service. But every so often an emergency will arise, in the form of an accident or unforeseen break-down which puts the truck out of commission.

(Continued to page 212.)
Friendly Counsel

Graham Brothers truck production for the first six months of 1925 equalled their entire production for 1924.

Words of commendation from good business men in every part of the world are responsible.

Thoroughly sold by their own experience with these trucks, they in turn are selling their friends.

1 Ton Chassis, $1095; 1½ Ton, $1280; f. o. b. Detroit

GRAHAM BROTHERS
Detroit - Evansville - Stockton
A DIVISION OF DODGE BROTHERS, INC.
GRAHAM BROTHERS (CANADA) LIMITED - TORONTO, ONTARIO

Graham Brothers Trucks
SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Homes of Distinction at Moderate Cost

A FEW years ago a New Yorker of vision, who had purchased a farm within sight of Hackettstown, N. J., referred to the Musconetcong Valley as an "undiscovered country. Situated near the head of this valley, amid mountains and hills of unsurpassed beauty, Hackettstown has long been recognized as one of the most delightful towns of northern New Jersey. Its finely paved, maple lined residential streets and neat business district excited the admiration of visitors. However, 56 miles from New York City, just outside the recognized commuting zone, Hackettstown has not until recently felt the surge of the real estate promoter and the peculiar situation existed of a town being decidedly under boomed.

The town boasted a business and social club with commodious rooms and a membership of 100 and a waiting list attesting the solidarity of the town's citizenship. A nine hole golf course and country club, flanked on one side by Schooley's Mountain and on the other by the crystal Musconetcong River, attract the summer residents of nearby lake and mountain resorts. The state fish hatchery and park, with its wonderful springs and inland studded lakes and ponds, the nearby game farms, the trout streams that abound in the vicinity are among the best in the state and some of them within the town limits, all have invited visitors from far and near and their access has been made easy by concrete roads radiating in every direction. And yet, though there was not a vacant store nor a vacant residence in the town, rentals were too low to invite speculative building and the growth was slow.

A healthy local building and loan association had, it is true, built many houses in its 18 years of existence, but none to spare nor to be used to attract new residents to the town. It was out of this situation that the Hackettstown Investment & Development Company took its inspiration. The company was organized to supply homes for those who were knocking for admittance and the work which it has done has been noteworthy.

Typical of the Attractive Interiors of the Belwood Terrace Homes in Hackettstown Is This Homey Living Room with Its Comfortable Brick Fireplace.

Here Is a Fine Example of the Sort of Houses Which the Hackettstown Investment and Development Company Is Building in Its Belwood Terrace Addition and Selling at Prices Which Place Them Within the Reach of Families of Moderate Means.
Fordson Tractor Cuts Hauling Costs 70%

By using a Fordson tractor with hoist for loading, unloading as well as hauling bricks operation costs were reduced from $2 per M. to 60c. This occurred in New Orleans with The Standard Brick Co.

This outfit proved so satisfactory on a trial that a second unit was ordered and a third planned for the near future.

Your business may be such that you are paying excess charges for power work which could well be reduced by the use of a Fordson tractor with special equipment. Hundreds of other concerns have learned this from their nearest Authorized Ford Dealer and are now enjoying the advantages of lowered costs and resulting higher profits. Call on him for a solution to your problem. There is no obligation attached to this service.

Fordson Tractor—$495—f. o. b. Detroit

Ford CARS TRUCKS TRACTORS
In One of Its Developments the Hackettstown Investment and Development Company is Building Five-Room Bungalows, Which It Sells, Fully Equipped with Water, Light, Heat, Sidewalk and Inside Walks, for $4,800.

For a time houses were erected on lots acquired here and there throughout the town, but recently the company decided to concentrate on two sections, the most important being the Belwood Terrace addition, a fifteen acre tract having the advantages not only of residential attractiveness, but also being within a few blocks of the business center.

Already seven houses have been completed, six of which were sold before completion. The accompanying photographs and plans illustrate the general character of the development. The lower floor plan is virtually the same in all of the houses, but modifications of roofs, porches and other details lend individuality to each building and no two are alike in outside appearance.

The lots are all 50 by 150 feet and a sidewalk extends the entire length of the development, about a quarter of a mile. Each house is turned over to the buyer complete with water, light, heat, sidewalk and inside walks. These properties are sold for prices ranging from $5,800 to $6,500 and on another development fully equipped five room bungalows are built for $4,800.

The local building and loan association lends its assistance by financing those who are unable to buy for cash. This development has also encouraged others to engage in building operations until the building activities are extending to all quarters, for it is said that in Hackettstown north, south, east and west sides all possess home sites of marked beauty.

The rising tide of homeseekers from the largest center of population in the world is beginning to flow into the Musconetcong Valley and Hackettstown is in the happy position of being a rapidly expanding community without a boom. Incidentally local bank deposits are eight times what they were when these activities first began.

Mr. William Swanger, of the American Saw Mill Machinery Company, is vice-president of the Hackettstown Investment & Development Company and, together with the other officers, has been an active force in this substantial home building development. Much credit is also due to Petty & Williamson, builders, both Hackettstown boys and real craftsmen, who have ably assisted in making good the company's slogan—"Homes of Distinction at Moderate Cost."

Keeping the Trucks on the Road

(Continued from page 208.)

until repairs have been made. At such times there is an unavoidable loss of time, but it is still possible to look forward to such circumstances and arrange to cut the loss of time to a minimum, by the proper provision of repair parts and repair facilities.

It is because of this fact that it is always wise in buying trucks to select a truck which has ample service facilities ready at hand and for which parts can be obtained without sending to a distant source of supply.

As an example of what is meant we can take the experience of a certain man with his new passenger car. He had recently bought a rather high priced car turned out by a reputable manufacturer and it gave him excellent service. He was highly pleased with his new machine and planned a trip through the East. While on this tour he was the victim of an unfortunate accident in which an axle was broken. At the town nearby no axle was available and he immediately got in touch with the nearby cities, but without any better luck. Finally he was forced to wire to the factory for an axle, and before it had arrived and was installed so that he was able to go on his way, several days were lost. Needless to say he disposed of the car at the end of his trip and invested in a car for which he could always be sure to obtain replacement parts without delay.

In line with this matter of quick replacements it is well to mention the system of unit construction which has been adopted by some of the truck manufacturers. By this system the truck is constructed in units which can be easily and quickly removed and replaced by rental units while repairs are going on. This system extends even to the engine. With this system something may go wrong with the engine. The truck is driven into the service station. Here there are several spare engines, in good condition at all times. The engine is removed, a spare engine installed and the truck goes about its work with little delay. When the original engine has been repaired the truck is again sent to the service station, but outside of working hours this time, the spare engine is removed and the original engine replaced.

The system is much like the system of rental batteries which is used by battery charging stations, and many truck operators have found it a great money saver, enabling them to keep their trucks on the job with the least possible loss of time.

Standard Contracts Are Ready

ANNOUNCEMENT is made by the Joint Conference of Standard Construction Contracts that the Standard Contract for Engineering Construction is now available for distribution and copies may be obtained from the Associated General Contractors of America.

The fourth edition of the Standard Document of the American Institute of Architects is also just off the press and copies may be secured from the headquarters of the Institute in Washington, D. C.

These contracts are the result of years of careful effort, on the part of a number of organizations, to evolve a contract form that would be fair to all parties.
The same qualities that make Horse Head Zinc an excellent material for conductor pipes, eaves-troughs, and gutters make it equally desirable for standing seam roofs. It is rust-proof, easily laid, free from repairs, inexpensive, good-looking, ever-lasting.

Standing Seam Horse Head Zinc Roofing is shipped in casks complete with nails, Zinc for clips, and full instructions. Each cask contains enough Zinc to cover one roofing square (one hundred square feet) with full allowances for seams and laps.

The New Jersey Zinc Company
Established 1848
Products Distributed by
The New Jersey Zinc Sales Company
160 Front Street, New York City
CHICAGO • PITTSBURGH • CLEVELAND • SAN FRANCISCO
What's New?

15-Pound Portable Electric Saw

It will rip and cross-cut thousands of feet of lumber a day and then the tale is not half told of its virtue. In fact it is a glutton for work, claims the manufacturer of a new 15-pound portable electric saw which is said never to be tired and never stops except to move to another job or to rest the worker. It carries its well-known manufacturer's genuine guarantee of merit.

You will find this husky one-hand saw cuts production cost and saves time and money. It operates from any light socket at 3,600 r.p.m. There is an 8-foot tough rubber lead cord with a special split plug. Motor brushes and commutators are exposed by removal of a single screw. A quick make-and-break trigger switch is located in the handle. A dust shield is provided and removable without a tool.

All you have to do in operating the saw is to hold it on the line and it will keep eating its way through wood or bone, wall board, plaster board, ply-metal, fiber, linoleum, hard rubber, light gauge soft metal, bakelite, cork, and many other materials. The saw blade is 6-inch or 7-inch as required.—L. E. RAVENSCROFT.

Portable Crane for Light Trucks

By virtue of its mobility, the motor truck crane is able to serve a large number of people whose business does not warrant the installation of stationary hoisting devices. Of the several types of portable cranes on the market, the majority are built for use on trucks of five tons capacity or over. To meet the constantly growing demand for a lighter truck-crane combination, one of the truck manufacturers has developed a crane, mounted on trucks of 1½, 2 and 2½-ton capacity.

New Tool for Sheet Metal Work

A DRAWING tool for sheet metal workers, tinters, coppersmiths and other mechanics that will make a true circle anywhere has recently been placed on the market by the inventor. It is so constructed that it will draw a hole for a pipe at any angle and position without being obliged to lay the pipe out. It is operated on the same principle as a compass or divider and has a sliding motion which permits it to draw a circle on any surface, round, flat or uneven, and at any angle required. No matter what the surface underneath, the tool will make a true circle.

If a hole is to be made on a pitched roof, it cannot be perfectly round, unless made with this tool, it is said, as dividers cannot do this job. Dividers do not outline a hole in a round pipe, but this invention will. The inventor compares it to dividers which would be required to make a true circle from the north pole over hills and valleys, declaring that in principle his device executes the same service.—R. G. THACKWELL.

Great Mobility Makes This Crane, Mounted on a Truck, a Most Serviceable Piece of Equipment, and It Requires Little Alteration of the Truck for Mounting.

This crane, primarily designed for the purpose of unloading 1,000-gallon fuel oil tanks from gondola cars, is adaptable to many other uses, such as handling gasoline drums, barrels, stone slabs, etc., weighing upward to 2,500 pounds.

The equipment consists of a mast, braced and anchored to the chassis frame; a special drum-winch and two booms, the longer of which is shown in the accompanying illustration. The long boom measures 13 feet 3½ inches and has a 16-foot clearance from the ground, while the short boom, measuring 8 feet 11¾ inches, has a 10-foot clearance.

Power is applied to the winch from a power take-off through a one-speed forward and reverse gear and a chain drive to the winch-worm sprocket. The controls, consisting of motor-clutch and gear shift, are located directly behind the cab, on the left side of the mast, and attached to the back side of the cab is an auxiliary gas control which permits the operator to regulate the engine speed without leaving his position at the control levers.

To insure rigidity of the chassis while the crane is being operated, two jack screws support the mast from the ground. These screws are attached to the cross-members under the mast by means of a swivel arrangement, so that when not in use, the free ends may be fastened to brackets on the sides of the frame.

The entire assembly may be mounted on any standard truck made by this company with but little alteration to the body and none to the cab.
The handsome lobby of the Bedell Store in Chicago Wm. Balhatchett, Plastering Contractor.

Protect All Plastered Corners with Steelcrete Corner Bead

Steelcrete Wing Type Bead

ON PLASTERED walls all outside corners, where the wear is greatest and the knocks most frequent, should be protected by adequate Corner Beads. There is a suitable Steelcrete Corner Bead for each of your plastering needs. Ask your dealer in building supplies.

The Hidden Strength that brings Better Plastering

LET every structure you build, large or small, have the protection, the safety, the permanence, provided only by Metal Lath.

There is no compromise with security when you use Steelcrete Metal Lath. There is a suitable Steelcrete Lath for every construction requirement—to provide safety, durability, ultimate economy. Steelcrete Metal Lath is sold by leading dealers in building supplies.

STEELCRETE
CONCRETE REINFORCEMENT

Expanded Metal Reinforcing Mesh is the one type of concrete reinforcement which is obtainable through building supply dealers. Agents everywhere.

Used for porch floors, retaining walls, concrete driveways, garages, swimming pools, etc.

Send plans for our estimate and suggestions

The Consolidated Expanded Metal Companies
BRADDOCK, PA.
Steel Joists for Economical Permanent Construction

You are constantly on the lookout for better building materials—materials that make your construction easier and quicker, that save you money, time and labor. Truscon Steel Joists will therefore appeal to you particularly. Truscon builds up these Joists for you—to the length specified—they come to you complete, do not have to be cut or fitted. The labor of placing the Joists is all you pay. Learn from Truscon how you can make your construction more profitable with Steel Joists. Inquiry implies no obligation.

Write for catalog and information.

TRUSCON STEEL COMPANY, Youngstown, Ohio

Warehouses and Sales Offices in Principal Cities

TRUSCON STEEL JOISTS

Steel Joist construction proceeds rapidly with a minimum amount of field labor.

Truscon Steel Joists give you a rigid, fire-proof and sound-proof construction. With cement floors they are actually cheaper to build with than wood joists with hardwood flooring.

Truscon Steel Joists with cement floors in a completely modern and firesafe construction.
Free—Waterproofing Specifications

This handy-reference, file-tabbed specification book—8½x11 inches—covers practically every condition requiring the use of waterproofing, dampproofing or oilproofing materials. The descriptive index on the first page enables you to determine instantly the product you need for the job, and refers you to the page containing detailed specifications for its use on the particular type of work in question. You need this book for your files and it's yours for the asking.

Write for it today

THE TRUSCON LABORATORIES
304 Truscon Bldg. Detroit, Mich.
What a world of difference
a beautiful entrance makes!

It is a significant fact that many of the finest homes all over the country depend upon Hartmann-Sanders designing and craftsmanship for entrances of beauty. These famous entrances are so artistic in proportions—so distinctive in beauty—so substantial in quality—and so faithful in their conformance to sound architectural practice—that no architect or contractor hesitates to stand sponsor for them.

Used in remodeling, Hartmann-Sanders Entrances literally make all the difference in the world in the appearance of the building. Besides, they enhance value far beyond their comparatively small cost. Back of Hartmann-Sanders Entrances are 26 years of experience and America's largest facilities for economical production. They are also designed to your own or architect's specifications. Manufactured complete, ready to erect. Every entrance stabilized by famous Koll Lock-Joint Columns.

Write for new catalog No. Y51 containing many entrance suggestions. Address Hartmann-Sanders Co., 2171 Elston Ave., Chicago, Ill., Eastern Office and Showroom, 6 E. 39th St., New York City.
There are seven good reasons why the Eternit Shingle proposition will bring you a volume of business you never thought possible.

1—Eternit Rigid Asbestos Shingles make the beautiful, weather-proof, fire-proof roof that every home-owner wants. From a quality standpoint, you can go the limit in recommending these shingles. They will make good.

2—High though the quality is, the price of Eternit Shingles has been hammered down until you can compete with substitute roofings and make a generous profit.

3—Our financing plan lets you sell Eternit roofs on easy time-payments. With it you can land business that would otherwise get away or that you would have to carry on your books.

4—Because of our exclusive dealer policy you cash in on all the business developed in your territory.

5—Both through our field force and the home office, we keep in close touch with you. We show you how to develop business in your territory—and help you do it.

6—Full-page advertising in colors in magazines of national circulation is consistently keeping Eternit Shingles before your customers.

7—Planned production and enormous reserve stocks assure prompt service that lets you fill any demand promptly.

The best evidence of the effectiveness of the seven-point proposition is the success it is bringing Eternit dealers in other territories. Your territory offers the same opportunities. Write today for full details of the profits that are waiting for you as the Eternit Shingle Man.

Ask about Eternit Asbestos Building Lumber —the same materials made up in sheet form.

AMERICAN INSULATION CO.
Roberts Avenue and Stokley Street, Philadelphia, Pa., or Hibernia Bank Building, New Orleans, La.
Less for Plastering on Cinder Block

THAT cinder block is an economical material to use as a plaster base is brought out by following letter from a plastering company to a well-known Kansas City contractor:

Kansas City, Mo., July 29, 1925.

Fogel Construction Co.,

Kansas City, Mo.

Gentlemen: Re: Plastering Paseo High School.

If cinder block are used in place of clay tile for partitions in the Paseo High School, I will deduct $1,000.00 from our contract price for the plastering.

There are about 65,000 square feet of partitions in this job.

Hoping this will meet with your approval, we are,

Yours very truly,

H. G. Beard, Plastering Co.,

De Vilbiss Mfg. Co.

A DETROIT sales and service branch has recently been opened by the De Vilbiss Manufacturing Company, of Toledo, Ohio. Occupying, at 4614 Woodward Avenue, a portion of the ground floor and basement of the Garfield Building, gives the De Vilbiss company a commodious and convenient downtown place of business in the Michigan metropolis.

Correcting a Mistake

UNDER the title "Distinctive Cinder Block Home" there appeared an article, in the May, 1924, issue of AMERICAN BUILDER, describing the beautiful residence of Mr. Grove Locher, near Lancaster, Pa. Through a lack of complete information in the office of the company which supplied the cinder blocks, the supervising architect was credited with this house. The error has since been discovered. The original plan was the creation of Mr. H. E. Yessler, architect, of New York City, and is an excellent example of the fine work for which he is known.

De Vilbiss Mfg. Co.

The first of the colored pages in the July American Builder, color plate, J-I illustrated a Fourth of July scene—a beautiful swimming pool and garden with the American Flag reflected in the water. The descriptive caption stated that this swimming pool was in connection with a Washington home. This was an error.

This beautiful garden and pool are located in Omaha, Nebraska, in connection with the home of Mr. Clyde W. Drew of the firm of Briggs & Drew, Drainage Contractors, photograph by Louis R. Bostwick of Omaha.

The editor is very glad to make this correction giving credit where credit belongs for a very beautiful photograph and a most unusual home, garden feature.

Answers to Problems on Page 198

1. The length of the front of the dormer is 10 X 6 = 60 inches = 5 feet 0 inch.
2. The length of the hip M is 4 X 19.69 inches = 78.76 = 6 feet 6¼ inches.
3. The length of the valley G is the same as the hip M. It is 6 feet 6¼ inches.
4. The length of the valley E is 6 X 19.69 = 118.14 inches = 9 feet 10½ inches.
5. The length of the jack N is 2 X 15.62 = 31.24 inches = 2 feet 7¼ inches.
6. The numbers for the side cut of the Jack rafters are 15½ and 12 marking along the arm on which the 12 is taken.
7. The valley G has no side cut at the upper end.
8. The numbers for the side cut of the valley E are 19½ and 17.

Answers to Problems on Page 198

These HEAT WAVES show how the heat RISES and ESCAPES through the roof and walls of your house

That's what makes the snow melt so fast on your roof. Do you like to buy coal to melt snow? This is sheer waste, and you can stop it by insulating the roof and walls of your house with CABOT'S QUILT

You can lay Quilt under your shingles, siding, tiles or boarding, or between your studs or rafters or under your attic floor. It will save enough coal to pay for itself in two or three Winters, and keep on saving heat and doctor's bills and making you comfortable as long as the house stands.

Send for Free Sample of Quilt and full information

SAMUEL CABOT, Inc.
141 Milk Street Boston, Mass.
342 Madison Avenue, New York
4000 Bloomingdale Ave., Chicago
Los Angeles Portland
Virginia White, Double-White, etc.
Cabot's Creosote Stains, Stucco Stains, Old Merchandising and Exporting

MCGILL MANUFACTURING CO.
Electrical specialties of Quality
Established 1894
VALPARAISO - INDIANA

Write today for Descriptive Folder

Have you been helped by complete wiring of a Hurst Bridge? Send for a catalogue.

Have you been helped by complete wiring of a Hurst Bridge? Send for a catalogue.

Have you been helped by complete wiring of a Hurst Bridge? Send for a catalogue.
One tenth of one percent makes all the difference

No longer do people think that an electrical installation is merely a matter of price. G-E advertising has taught them that it is a matter for careful planning. Therefore, when you build a wiring system into the walls of a house, it is important that you put in quality.

Using General Electric wiring materials throughout may cost a little more, but it cannot add one tenth of one percent to the cost of a house. Yet that one tenth of one percent makes all the difference in comfort, in safety, and in ultimate economy. The few extra dollars of initial outlay often mean many dollars made in selling a house faster. People now know the "G-E Wiring System", just as they know the best in furnaces and in plumbing. It is a very effective selling point for a house.
Dealers Visit Steel Plant

MEMBERS of the Altoona (Pennsylvania) Builders Supply Dealers' Association made a very interesting motor trip to Warren, Ohio, June 29th, to visit the Youngstown Pressed Steel Company’s factory. Most of the time was spent in going through the plant, although entertainment was included.

Chain Belt Opens Minneapolis Office

THE Chain Belt Company of Milwaukee has announced the opening of a sales office in Minneapolis, Fred S. Van Bergen to be in charge. The office is located at 614 Builders Exchange Building. This office will handle all of the Chain Belt Company's chain and engineering lines, marketed under the trade name, "Rex," including all types of transmission and conveying chains, sprocket wheels, elevator buckets, transmission machinery, and elevating and conveying machinery.

The Chain Belt Company will also be the Minneapolis distributor for the products of the W. A. Jones Foundry & Machine Company, Chicago, the variable speed transmissions of the Reeves Pulley Company, Columbus, Ind., and belting manufactured by the Victor Balata & Textile Belting Company of Chicago.

The territory covered by the Minneapolis Office includes the states of Minnesota, North Dakota, South Dakota and parts of Iowa and Wisconsin. Mr. Van Bergen, in charge of the office, was formerly general manager of the Power Equipment Company, Minneapolis.

Rex Concrete Mixers and Pavers will continue to be stocked and distributed by the Wm. H. Ziegler Company of Minneapolis, which has been the exclusive mixer representatives of the Chain Belt Company for the last three or four years.

Brass Company Appoints Agent

THE Bridgeport Brass Company, Bridgeport, Conn., has appointed the E. F. Keating Company, 452 Water Street, New York City, to handle the sale of Plumrite brass pipe in the metropolitan district. The Keating company has a large sales force covering New York City, Long Island, northern New Jersey and all of New York State. It has a plant at Hartford for the fabrication of piping and tubing of iron, steel, brass and copper. This new company is known as the E. F. Keating Pipe Bending & Supply Company. As this company manufactures and sells coils, bends, heaters and pipe pressure power plant piping, hot water service heaters and many other things along this line, the Bridgeport Brass Company feels that it is fortunate in securing it as agent.

ALLMETAL WEATHERSTRIP

THERE IS A GOOD REASON why any contractor, carpenter or mechanic should be interested in this work.

HOME OWNERS AND HOME BUYERS WANT IT therefore, you are assured of plenty of work and an opportunity to establish a profitable business of your own.

AGENTS WANTED NOW to represent us in their locality.

Our service is prompt as all orders are filled and shipped within 24 hrs. after being received.

GENTLEMEN:—

Without obligation, please send me samples and literature:

NAME

ADDRESS

CITY STATE
Instinct tells him what Science tells you

Perhaps the man who uses a scrap of wood as a cushion between his feet and a concrete floor would simply tell you that it gives him "the miseries" to stand on that hard, cold floor.

Science would tell you more. It would present figures gathered by great business firms, showing that men who stand on concrete do less work in a day—take off more time on account of sickness, and change jobs oftener.

Science can also tell you more about the advantage of laying a Maple floor over concrete. Maple polishes, where stone pulverizes, from wear. Tough-fibred, tight-grained Maple becomes smoother and smoother under the traffic of feet and trucks, while stone-like floors give off a fine dust which may feel like flour to your fingers, but in the bearings of machines it cuts like diamonds.

Floor with Maple in your factories and industrial buildings, and you protect both your men and your machines. Floor with Maple in stores, offices, public buildings, schools—and all the places where people stand, or work, or walk. For longer service, a smoother surface, and greater human comfort, experience proves that maple is the floor to use.

In the Tribune Tower, Maple has been chosen as the flooring for the press rooms. Anyone who knows the rush and turmoil with which each new day's issue of a great newspaper is published, knows that the floor which must withstand this usage meets a hard test of service and contributes to human efficiency, keyed to the highest pitch.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1053 Stock Exchange Building, Chicago

Guaranteed Floorings

The letters MFMA on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve every particle of these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you buy.

Floor with Maple
Beech or Birch
News of the Field

Approve Lumber Standards

At a recent meeting of the West Coast Lumbermen's Association it was arranged to put the practice of American Lumber Standards into effect. A resolution was unanimously adopted approving these standards with four minor exceptions, the sizes of finish, drop siding and rustic and designs and sizes of mouldings, the provisions for which increase waste in west coast manufacturing practice. This resolution also provided for a committee to promote the general observance of the American lumber standards in the west coast lumber industry and to secure written pledges from individual manufacturers to guarantee general observance not later than November 1, 1925.

Appoint Sales Promotion Manager

JOHN J. GUERIN, one of the best-posted men in the stove industry, who has been associated with the Michigan Stove Company for twenty-three years, has been made sales promotion manager for this organization.

Mr. Guerin's new duties will be to work more intimately in sales development with the ever-increasing number of Garland dealers throughout the country. He has had thorough training in both stove manufacturing and merchandising, and is giving up the position of chief of the purchasing department of this company to assume his new duties.

Grout Joins Bridgeport Brass Co.

W. GROUT, formerly vice-president and sales manager of the Keating Valve Company, Springfield, Mass., for the past three years, has joined the sales organization of the Bridgeport Brass Company, Bridgeport.

Introduces New Interior Paint

The Sherwin-Williams Company has put on the market a new interior paint known as semi-lustre which possesses the hard-drying and washable qualities of an enamel, yet brushes out and works like an oil paint. It dries with a half-enamel gloss. Its manufacturers believe it meets the increasing demand for a paint of this character for interior plastered walls and woodwork where a flat wall finish is not desired. It is being made up in ten colors in addition to white.

Tri-State Association Organized

COMPLETION of the organization of the Tri-State Sawmill Managers' Association, comprising managers and superintendents of sawmills in northern Louisiana and Texas and Southern Arkansas, was effected at the regular monthly meeting of the association recently held in Shreveport, La. E. M. Decker, of Farmerville, La., presided at the session, which was attended by about a score of members and visitors.

Obtains Big Contract

T he American Sawmill Machinery Co., Hackettstown, N. J., has been awarded the contract for a number of woodworking machines for the University of North Carolina at Chapel Hill, N. C., consisting of power feed rip, planer and matcher, tenoning machine, hollow chisel mortiser, jointer, shaper, boring machine and lathe, including motor equipment for each machine.

You Paint to Make Money—Painting the DevIlbiss Way Will Increase Your Earnings

Doing at least two painting jobs in the present working time of one; doubling your profits, or better; improving your service; taking prompter and better care of your customers—these are some of the greater money-making advantages of painting with the DevIlbiss Spray-painting System.

In addition, painting the DevIlbiss way gives to your work the stamp of progressiveness and makes for a more satisfied crew of painters.

The speed of DevIlbiss spray-painting averages 4 to 5 times faster than hand-brushing. The spray-applied coating completely covers the surface, and is even and uniform regardless of character of surface painted and kind of paint used. The best possible results are produced with the DevIlbiss spray gun at the lowest practicable air pressure and without drips and spatters.

Here is opportunity for making a worthwhile increase in your earnings. Additional operation and equipment details of the DevIlbiss System will be promptly mailed to you. Address—THE DeVILBISS MFG. CO. 238 Phillips Ave.  TOLEDO, OHIO
They Turn Time Into Profits

When you do a re-roofing job with Ruberoid Re-roofers, you finish it in record-breaking time, because—

1—You lay them over the old wood shingles and save the time and trouble of removing the old roof.
2—Ruberoid Re-roofers are the fastest laying shingles on the market.
3—You use only 36 shingles and drive only 112 nails to cover 100 square feet.
4—The shingles are self-aligning. They interlock easily
—no metal attachment to slow up the work.

The finished roof is one of the highest quality—Ruberoid quality—the kind that has lasted twenty, twenty-five, and thirty years and is still giving excellent service. It's a roof you will be proud of and one that will boost your business.

Double locking tabs prevent Ruberoid Re-roofers from curling or lifting with the wind. They are surfaced with sage-green, tile-red, and steel-blue genuine slate.

If you want to know more about these profitable Re-roofers, drop us a line. We will send you samples and instructions for laying. The coupon is for your convenience.

RU-BER-OID
SHINGLES AND ROOFING
Books, Bulletins and Catalogs for You

The literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

The Buffalo Gas Radiator Corporation, North Tonawanda, N. Y., has issued a small pamphlet completely illustrating and describing its gas fuel steam radiators with automatic operation.

The Upson Company, Lockport, N. Y., has published a booklet summarizing the opinions of lumber associations and retail lumbermen on the recently inaugurated Upson partial payment plan.

The Lincoln Electric Company, Cleveland, Ohio, offers a new catalog of Lincoln "Stable-Arc" welders with a partial listing of the industries in which they are used.

"The Handwriting on the Wall" is a bulletin issued by The Celotex Company, 645 N. Ill., describing Celotex as the modern wall insulation.

"Frigidaire 16-page booklet issued by the Delco-Light Company, Dayton, Ohio, describing the cooling coils which can be installed in any ice box now used in a home.

The Bovee Furnace Works, Waterloo, Iowa, has issued a new catalog of the furnaces and fittings which it manufactures.

The Warner Elevator Mfg. Co., Cincinnati, Ohio, has issued a new bulletin, F-18, describing its new electric dumb waiter.

The Hydrex Asphalt Products Corporation, 120 Liberty Street, New York City, offers three technical bulletins it has issued under the A. I. A. system and which covers the company's line of steel lockers, cabinets and partitions in an attractive manner.

Changes in Personnel

An announcement has been received from the Consolidated Expanded Metal Companies, Braddock, Pa., that H. E. Hollingsworth has been named to succeed to the position of New York branch manager, formerly held by Thos. R. Herbst, Jr., who has assumed the duties of vice-president and director of sales at the home office.

Untarnishable

All Bakelite moulded in 6 colors

A Finer Electric Bracket and a Better Service Outlet in one.

TORK LIGHTS are not only a new economy but the finest finishing touch for any wired home.

Ebony-Flame Orange-Pottery Green-Old Mahogany-Fine Bronze-Ambergold

TORK COMPANY, 8 West 40th St., New York

Buy the Best HARDWARE
For Hard-wear
For more than 48 years Bommer Spring Hinges have maintained their leadership and proven their superiority over all others.

They have kept pace with the times, because they have been kept up with the times whenever improvement was possible.

BOMMER SPRING HINGES ARE THE BEST

They are in universal demand—easiest to apply and the most satisfactory spring hinges made.

Your Dealer handles them.

Send for New Catalog 47. It is a big help in ordering.

Bommer Spring Hinge Company
MANUFACTURERS
BROOKLYN, N. Y.
Boiling it Down

The Van Guilder System means—

STRENGTH—proven by the earthquake test.

SIMPlicity—Experienced laborers unnecessary.

ECONOMY—The only successful method of laying up a concrete wall without forms.

MERIT—The continuous air space unbroken by any masonry means a building that is warmer in the winter, cooler in the summer, and damp-proof, thereby eliminating the only objection to a concrete wall.

Mr. Builder, your clients want the best value that they can get for their money. Give them this earthquake tested wall at a cost less than any other system of construction.

Write for your copy of our new pamphlet "What Lesson Did the Santa Barbara Earthquake Teach You?" Benefit by experiences in one of the greatest disasters this country has ever had.

VAN GUILDER SYSTEM CONCRETE BUILDING, Inc.
15 East 40th Street
NEW YORK

Zinclad Nails Make
PERMANENT ROOFS

The home owner has a right to expect a perfect roof. That's why you should use Zinclad Nails on the roof. We manufacture Zinclad Nails for Asphalt Shingles, Asbestos Shingles, Cement Shingles, Metal Shingles, Slate Roofing, Tile Roofing, Felt Roofing, Canvas Roofing and Zinc Roofing. Zinclad Nails are sold by leading dealers everywhere.

Our booklet "The Point" tells why Zinclad Nails prolong the life of the roof. We will send you the booklet and sample Zinclad Nails FREE in return for coupon below.

Send coupon today for Booklet and sample nails.

W. H. MAZE COMPANY
Peru, Illinois

SEND THIS COUPON

W. H. MAZE CO.,
Peru, Illinois

Gentlemen: Please send me your Booklet "The Point" along with sample Zinclad Nails.

Name

Street

City................. State
LEADERSHIP

Production of Rapidly Selling Block and Tile easily and quickly attained with the Ideal Vertical Stripper

Quality tells. So does service. And with this really wonderful machine you can furnish both, and corral the lion's share of Block and Tile business of your community.

The Vertical Stripper has low, convenient offbearing height and is the most flexible stripper—making two logical reasons why this machine should be building up your business.

Get your share of the big fall business; start the ball rolling by writing for details.

Steel Designs Win!

Our Steel Designs for Factories, Garages and Store Buildings have clinched the contract for many a progressive Builder.

Let us help you on the road to real success. Designs, Estimates Free

INTERNATIONAL STEEL & IRON CO.
Address Dept. 18

INTERNATIONAL STEEL & IRON CO.
EVANSVILLE, INDIANA
GREGORY HEAT

Revolutionizes Oil Burning for HOME HEATING

Uses about 1 Gallon of Water to 1 Gallon of Oil

Generates and Burns Carbureted Water—Gas

The average temperature of a coal fire ranges from 1100 degrees F to 1300 degrees F. Tests made with GREGORY HEAT by independent engineers over a period of hours record an average of 2269 degrees in the flame, while the average flue temperatures showed only 580 degrees F.

GREGORY HEAT using the same amount of oil as fuel combined with water and producing carbureted water gas registered 250 degrees more heat than when oil alone was used.

Gregory Heat has no motors or machinery of any kind. Its action is chemical; feeds water, oil and air in a natural way; allows no odors to escape; is thermostatically controlled; entirely automatic and positive in its action; has a capacity up to 2000 feet of hot water radiation.

Builders will find GREGORY HEAT comforts greatly appreciated by home buyers.

Sold for cash or on easy payments.

$320 $380
Up to eight Up to fifteen rooms rooms
F. O. B. Chicago. Price covers installation in any type of heating plant—old or new. Tanks extra.

Gregory Oil Burners, Inc.
2626 Prairie Ave., Chicago
Telephone Victory 5741

It has made wood bridging obsolete

GF Duplex Steel Bridging has definitely taken the place of wood. It is lighter—more rigid—made in one piece—cannot warp or split—occupies less space.

With all these advantages it costs less money installed than wood. It can be put up in one-eighth the time. A twist of the wrist and the driving of four nails and the job is done.

Builders everywhere have welcomed this great improvement. If you are not using GF Duplex Steel Bridging, write at once for sample and literature illustrating its use.

THE GENERAL FIREPROOFING BUILDING PRODUCTS
Youngstown, Ohio

Branches: New York • Chicago • Philadelphia • Boston • Cleveland • Los Angeles • St. Louis • Omaha • Kansas City • Minneapolis • Milwaukee • San Francisco • Syracuse • Atlanta • Mexico City

Export Department: 438 Broadway, New York City
Cable Address: "Firegen-New York"

Dealers Everywhere
Foley Files a Saw Perfectly in 5 Minutes

The Foley Automatic Saw Filer makes hand filing a thing of the past. Here's what S. J. Bottomley of Norwich, Conn., says about this wonderful machine: "I have filed saws for 40 years but the Foley Filer has me beat, both as to better work and speed. I am very highly pleased with my Foley Saw Tools as they sure do the work fine."

What Foley Users Say

"You certainly told me the facts about your saw tools which do the work much better than can be done by hand, and also 10 times faster."

J. N. Marshall
102 Beaver Ave., Niles, Ohio.

"I have filed 1600 saws with your Foley Saw Filer and am busy from morning to night, owing to the reputation for doing the best work that I have made with your tools."

L. C. Miller
19 Grand St., Jamaica, L. I.

One pull of the FOLEY ROTARY SAW SET the length of the saw and the teeth are set perfectly. Takes but minute. Puts set in or takes it out.

Saves Money—Saws—Eyes

You simply clamp a saw in the machine, turn the crank or let the motor turn it, and in 5 minutes you have a perfectly sharpened saw. The Foley Saw Filer works automatically with a speed and accuracy that cannot possibly be duplicated by hand. Teeth do not vary 1/1000th of an inch. Handles hand, band, back, meat or circular saws—even retooths saws that have been abused by poor filing. It's a money maker, a time saver, and eliminates eye strain.

Foley One-Minute Saw Set

Model F-3
Hand Driven
Foley Hand Drive Outfit: ideal for small contractors, builders and professional fillers. For hand, band, back and meat saws. Circular saw attachment extra.

FOLEY SAW TOOL COMPANY
913 East Lake Street
Minneapolis, Minn.

Rockford Hardware

YOU gain in four ways when you use Rockford Sash Pulleys. 1. They're correctly designed—run true and operate with perfect smoothness. 2. They're durably made—will give long-lasting good service. 3. They're superior in finish, and thoroughly coated with rust-resisting material. 4. Advantageous delivery from our centrally located factory.

Write for Catalog

National Lock Co.,
Rockford, Ill.

Branch Sales Offices:

Chicago, Ill.
Cincinnati, O.
Detroit, Mich.
Evansville, Ind.
Grand Rapids, Mich.
High Point, N. C.
Indianapolis, Ind.
Ipswich, N. Y.
Los Angeles, Cal.
Milwaukee, Wis.
Seattle, Wash.
Sheboygan, Wis.
St. Louis, Mo.
Practical Men Prefer Bostwick

The closer a man is to the job, the more he appreciates the special merits of Bostwick "Truss-Loop" Metal Lath. The building contractor who has actually worked with his own hands, the contracting plasterer familiar with every type of under surface, the architect or engineer with a bent for structural detail—all unite in their preference for Bostwick.

Bostwick "Truss-Loop"
The Home Builder's Friend

While second to none in applicability to large steel construction, Bostwick has won exclusive place as the lath to use in fine frame houses. Home builders know that they can make effective use of every foot of Bostwick "Truss-Loop" Lath, because it requires practically no overlap. They know it is easy to handle and easy to nail to joist and stud.

They know it saves a quarter of the plaster in comparison with many other types of lath and that plastering can be done faster and better over its firm, true backing.

They know that it keys the plaster perfectly over supports—just as well as between supports, that it is self-furring in most situations and has a rigidity of its own; that fine homes up to 35 years old exhibit perfect plaster where Bostwick Lath was used.

Send for "Bostwick Economy," a catalog of construction and other booklets describing Bostwick merits.

THE Bostwick STEEL LATH Co.
NILES, OHIO

AMERICAN BUILDER (Covers the Entire Building Field)
The PAUL Soft Water GENERATOR

MARKS a new era in the science of water softening. Less elaborate, less complicated. No moving parts, noting to wear out. Simple to regenerate. Does not require special service lines and can be put on a regular water service line or used with a Paul or other private water system. Ratings are conservative, satisfaction assured.

PAUL WATER SYSTEMS for Deep or Shallow Wells

Paul dealers and others interested in the profitable Paul line will find the addition of the Paul Soft Water Generator to the already complete line of favorably known Paul Water Systems for farm and home offers a winning combination that makes sales and profits sure. Now you can sell Water Softeners in the country as well as in the city. You can offer the complete water supply and softening unit or you can sell the Generator separately. The line is priced right.

Write for more information about the complete Paul line.

Fort Wayne Engineering and Manufacturing Co.
Main Office and Factory
1713 N. Harrison St.
Fort Wayne, Ind.

The new PARKS Cabinet Shop Special No. 7
$250.
as illustrated with motor

Contractors wanted it! Parks built it!

BUILDERS have been searching for a combination woodworker that would enable them “to take the shop to the job,” not simply a circular saw, but a machine that would make practically any cut. But heretofore, every attempt to produce handy “portability” and lightness has meant either loss of durability, capacity or service. Then Parks went at the job, with 40 years of leadership in designing low-cost, compact, efficient combination woodworkers as a safe beginning. In the Parks Cabinet Shop Special No. 7 neither capacity, durability, strength, nor service has been sacrificed.

It is a real machine, without freakish “stunt” designing. Yet this Parks goes through a residence door, weighs only 750 lbs., complete, operates from light socket, does every useful woodworking operation and costs only $250 complete with motor!

No wonder Parks is working overtime to make deliveries! Get your order in without delay. Write us for name of your nearest dealer and complete descriptive bulletin No. 7.

The Parks Ball Bearing Machine Co.
Fergus Street and C. H. & D. R. R.
Cincinnati, O.

Canadian Factory: 200 Notre Dame East, Montreal, Canada

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
BOVEE FURNACES

Save 40% in Fuel
Sold at Manufacturers' Prices

Manufactured in all sizes, having 20-inch to 36-inch fire pots. Combustion chamber more than double the size of the average furnace. Make more friends and more business by installing BOVEE FURNACES in all of the homes you build.

We furnish any style of fittings with all sizes of BOVEE COMPOUND RADIATOR FURNACES. Special manufacturers' prices, quoted on receipt of specifications or description of what is desired, or floor plans of building to be heated.

Purchased with regular piping to each room, with regular pipeless fittings and register or with central heating fittings and registers as desired.

Note the large ash pit with independent shaking grates. A Clean Heating Surface from top of ash pit to smoke collar. A direct heating surface always clean from soot.

BOVEE FURNACE WORKS
50 West 8th Street, WATERLOO, IOWA

Level a Plumb Better—Quicker—Own Your Own

Aloe Convertible Level and Transit Combined

FREE TRIAL

$5.00 Brings it to you

Increases Your Income
This instrument will add immeasurably to your efficiency and put you in the big builder class—will do more to increase your business, income and prestige than any investment you ever made. The Aloe Convertible Level is the world’s best—a combination of both level and transit and quickly converted to the use of either. Absolutely accurate—satisfies the requirements of the most exacting—yet so simple that anyone can use it.

You Learn To Use It in an Hour

Complete Instructions
No technical knowledge necessary. No previous experience needed. With our simple and complete instruction book, included free with every level, you can immediately put the instrument to work. It is a level and transit combined—takes sights either above or below the horizontal. You can use it for leveling foundations, walls, piers, streets, walks or curbs—to run straight lines for ditches or drains—boundary lines for fences or trees—surveying lots and fields—plumbing walls, shafts, trestles, posts and pilars.

A. S. ALOE CO., 621 Olive St., St. Louis, Mo.

MAIL COUPON TODAY

A. S. ALOE 621 Olive St., St. Louis, Mo.
Without obligation, send me your FREE book, "Be A Bigger Builder". Also full particulars about the Aloe Convertible Level and details of your easy payment plan.

Name
Address
Carpenters, Builders and Weatherstrip Agents

Today, while you think about it, write for complete details of our attractive proposition. Don't pass this up. Hook up with a quality product and permanent business.

Burrowes Metal Weather Strips

Burrowes Weather Strip Co.
2163 N. California Ave., Chicago

Some Reasons for Anchor Preference

Time Tested Quality
A Quarter Century of Experience
A Continuous Record of Honest Dealings
Equipment That Is Really Practical
A Substantial and Reliable Company
Sales and Service by Representatives of Unquestionable Standing

These are some of the things that have put ANCHOR equipment into almost every Products Plant in Cleveland, Detroit, Columbus, Pittsburgh, Philadelphia, and practically every city and village where Concrete Products can be made. This unanimous choice is irrefutable proof of ANCHOR supremacy, and merits your consideration before you place an order.

Write for Catalog giving complete information

Start With a Single—Unit Add as You Grow

ANCHOR
Anchor Concrete Machinery Company
Adrain, Michigan
Dependable Oil Heat Without a Price Penalty

The man who builds or buys a home wants dependable oil heat, without a price penalty. The Oliver supplies it!

The new, improved Oliver can be installed at a cost, to him, of less than half the price of the lower priced power burners, with an attractive profit for you.


For those buildings you now have under construction, or contemplation, let our Heating and Plan Department draw up specifications, without charge. No obligations. Get details of Special Builder's Plan and prices.

Write!

OLIVER OIL BURNER CORPORATION
1470 Oliver Building, St. Louis, Mo.
Oldest and Largest Manufacturers of Oil-Gas Burners in the World

KITCHEN MAID
STANDARD KITCHEN UNITS

Make Money supplying style and convenience

Giving people what they want is the surest way to win their business, in building homes or apartment, just the same as in anything else. They want the convenience of Kitchen Maid standard units—they praise the kitchens in which you use these units. Above is the Pulmanook, which economizes floor space—folds away when not in use. Below is a list of other Kitchen Maid standard units—sturdily built with the finest cabinet-craftsmanship; they may be set in or built in, singly or grouped—and cost no more than old fashioned cupboards. Get the new catalog—dimensional drawings—and special builder's price list, by sending the coupon.

WASMUTH-ENDICOTT CO.
1756 Snowden Street, Andrews, Indiana
In Canada, Waterloo, Ontario

Please send me information regarding the units checked:
- PULMANOOK, consisting of table and 4 seats folding into wall, for above the kitchen corner.
- COMBINATION IX, consisting of cabinet, broom closet, dish closet and linen cupboards to set against wall.
- IN-A-WALL IRONING BOARD, folding into wall when not in use.
- BROOM CLOSET, to set in any kitchen corner, to be built into wall.
- DRYER CLOSETS, LINEN CUPBOARDS, to be set in, to be built in.
- IN-A-WALL TELEPHONE SEAT
- KITCHEN MAID KITCHEN CABINET

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

"Let the Kitchen Maid be your Kitchen Aid!"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
It's better to have the insurance built in—than to try and collect

Clay Products Association
Chamber of Commerce Bldg.
Chicago

FIRE CLAY
Flue Lining
AB 9-F-RTG.

What the Fain "Fold-Away" Dining Rooms Mean to the Builder

A greater number of apartments to the same given area—lowered building costs—increased rentals.

An important factor in the modern apartment—used with great success the country over.

Our architectural staff will draw plans for your building, showing its uses and space-saving, room-adding features.

Write for folder describing complete line of Fain efficiency equipment.

Fain Manufacturing Co.
National Bank of Commerce Bldg.
Norfolk Virginia
Try This Low Priced Flat White

TROPICAL Master Painters’ Flat White is a very unusual paint for the price.

It is made in extremely large batches and shipped only in five gallon steel drums, half-barrels and barrels, which reduces the cost of manufacture and shipping and this saving is passed on to you. For this reason Master Painters’ Flat White is a better quality paint for walls and ceilings than you can usually buy for so reasonable a price.

Master Painters’ Flat White is a smooth, pure white paint which spreads easily and produces a soft, velvety finish. It’s a pleasure to use it. On many repainting jobs one coat of this paint is enough. This means less work and more profit to you.

Master Painters’ Flat White is made in white only, as most Master Painters prefer to tint the paint themselves, when colors are needed.

Send the coupon below for complete facts and prices on Master Painters’ Flat White. We ship direct to Building Contractors and other large users.

The Tropical Paint & Oil Co.
1232-1274 W. 70th Street
Cleveland, Ohio

We supply complete fireplaces in all-brick or in Colonial wood mantle design. Also everything for the fireplace: ash traps, ash pit doors, andirons, fire sets, fenders, grates, hoods, screens, etc.

Write for catalog; also blueprints showing common mistakes in fireplaces.

Colonial Fireplace Co.
Also manufacturers of the new “Glo-Hot” electric grate that really HEATS
4604 W. Roosevelt Road, Chicago, Ill.

THE TROPICAL PAINT & OIL CO.
1232-1274 W. 70th St., Cleveland, Ohio

Yes, I’d like to have a circular and prices on Master Painters’ Flat White. I am also interested in items checked below.

☐ Tocotone, Flat Wall finish ☐ One 19 Floor Varnish
☐ Tocotone, Gloss Wall Enamel ☐ Floorkote, For Cement Floors
☐ Tocotone, Flat Wall Enamel ☐ Erie Wood Floor Paint

Name..............................................................
Street and Number..............................City..............................................State.................................

9-25
serves the interests of builder as well as client by permitting higher grade work and a more lasting finish. It means better fitting, more enduring trim, doors, paneling and floors—plus a reputation for good building.

Northern birch assures all-round satisfaction for large or small job. It works up with but little waste, permits fine workmanship, stays in place, and stands hard use, as well as abuse, on account of its practically mar-proof hardness.

It provides a wonderfully smooth base for an enameled surface. It takes on a waxed, stained or varnished finish to perfection. All color variations in the wood blend to an even tone under stain.

Write us your experience and ask us particulars. We are here to help you in every way.

THE BIRCH MANUFACTURERS
201 F. R. A. Building
Oshkosh, Wisconsin

"Beautiful Birch for Beautiful Woodwork"

CONCRETE WORK

For all classes of concrete work and in Portland Cement mortar, use Solvay Calcium Chloride to save time, labor and money.

SOLVAY CALCIUM CHLORIDE

when mixed with the gauging water:

1—Accelerates the initial and final set and increases the early tensile strength.

2—Gives greater plasticity and workability.

3—Increases density—water proofs.

4—Increases freezing resistance.

The quality of concrete is actually improved by Solvay, and many cement users find it a year round help.

Write today for the new Solvay booklet giving the latest information on the use of Calcium Chloride in concrete construction.

Write for Booklet No. 1753

The SOLVAY PROCESS COMPANY
WING & EVANS, INC., Sales Department
40 Rector Street
NEW YORK

Boston  Cleveland  Indianapolis  Cincinnati  Detroit  Syracuse  St. Louis  Philadelphia  Chicago  Pittsburgh
REG. U.S. PAT. OFF.

IMPROVED MODEL "R"

Automatic

CELLAR DRAINER

requires less floor space than any similar device on the market, due to its patented float "built around suction tube" construction. An important factor in small basements. Your customers will find the Penberthy

More Efficient
More Reliable
More Durable
More Economical

The movement has only one point of friction, is extremely simple and unaffected by dirt. There are no springs, the rotary packing movement being based upon unchanging natural laws. It pays to install a Penberthy.

Your Jobber Has Them

Penberthy Injector Co.

Established 1866
1250 Holden Ave.,
Detroit, Mich.

Canadian Plant, Windsor, Ontario

Consult

"Casement Hardware Headquarters"

Satisfaction in casement windows depends almost entirely upon their operating hardware equipment. So be sure the hardware you install is right. There is one organization that has for twenty years specialized in the manufacture of casement hardware alone and developed exclusive designs that make casements truly convenient. Such a source of supply is reliable. Consult "Casement Hardware Headquarters."

Open the windows —without opening the screens

Win-Dor Casement Operators, installed on the window sill inside the screens operate through the screen frame, easily moving the casement to any desired position by a short, easy swing of the handle and locking it there—snug and rattle-proof. No more opening of screens to open casements—no intrusion of insects, tearing and soiling of drapes, or marring of window sills.

Please your clients by giving them convenient casements. They are an actual economy instead of a costly luxury. Send the coupon at once for information on Win-Dor Operators. The Casement Hardware Co., Casement Headquarters for Twenty Years.

Win-Dor

CASEMENT OPERATORS - AUTOMATIC-LOCK STAYS

New Standard Type—one of a variety of styles and finishes. Handles furnished detached or permanent.

For where screens are not necessary or installation of operators is to be postponed. Channel fits operator later.

Note: For your protection remember that Win-Dor products are the result of pioneer research and broadly protected by patents. These designs, therefore, cannot be duplicated by other manufacturers.

C O U P O N

CASEMENT HARDWARE CO., 231 Pelouze Bldg., Chicago
Please send me information on Win-Dor Operators.

Name
Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
A Good Floor to Lay—
A Good Profit to Make

That is double security for you and for your client. You provide an excellent floor and make a substantial profit. You will find the business of laying Magnestone Flooring a pleasant occupation and a money-maker as well.

Put it right over the old floors as well as for new construction. It is laid one-half inch thick and trowel finished like cement by any competent masonry mechanic. These floors are sanitary, comfortable, noiseless, durable, warm and fire-proof. Make your next floor Magnestone! Your profit is assured!

Solves Your Flooring Problems

in kitchens, bathrooms, in schools, hotels, stores, factories and hospitals, all you need is to get started. Your first job will bring you bigger ones and bigger profits. Easily laid. Eleven attractive colors to choose from.

Write now for our Magnestone Flooring Proposition and Samples—no obligation.

AMERICAN MAGNESTONE CORPORATION
Also manufacturers of Magnestone Quality Stucco, Mortar Colors and Plaster
GENERAL OFFICES: SPRINGFIELD, ILLINOIS
Plants and Sales Offices: Ottawa, Ill.; Springfield, Ill.; Kansas City, Mo.; Brooklyn, N. Y.

Why do they eventually come to Slate?

It doesn't take a long time to find out — sometimes as soon as two years or even less. The house pictured above was built only two years ago and is now being reroofed with Slate. Is this not enough evidence that slate is the most economical of all roofing materials.

VENDOR SLATE CO.
INCORPORATED
EASTON, PENNSYLVANIA
STILES BUILDING
A New

waterproofing problem

solved

THE passage of zoning laws necessitating set-backs in the erection of tall buildings, automatically created new waterproofing and damp-proofing problems. These set-backs are potential sources of interior damage unless adequately protected against the entrance of moisture.

Section 1 of the accompanying drawing illustrates a wall set back from the building line. Note the unprotected fire-proof beam, the abutting concrete floor, and roof slabs of cinder concrete which are too porous to prevent the entrance of water into the building.

The weak point is in the mortar, for ordinary mortar contains countless pores which permit the absorption of water and moisture. The remedy is to lay up the brick in cement mortar not subject to capillary attraction.

These desirable properties can be readily and economically obtained through the use of “R. I. W.” Toxement Mortar Paste*.

*Patented
This Coal Chute Pleases Both Builder and Owner

As a builder you are interested in securing materials that are easy to use, that satisfy your customer, that are substantial and make your property more salable. There is no better way to advertise the quality of the homes you build than by the use of a Gabriel Chute.

The Gabriel Rolled Steel Coal Chute is attractive in appearance, is wind and weather proof and is guaranteed to be unbreakable. It has the special chain release which permits automatic opening of the door without descent to the basement—a feature that immediately appeals to the housewife.

Full details will be sent on return of the Coupon.

The GABRIEL STEEL COMPANY
BELLEVUE AVENUE - DETROIT, MICH.

GABRIEL ROLLED STEEL PRODUCTS

GABRIEL STEEL COMPANY
Bellevue Ave., Detroit, Mich.

Send me full detail and prices on Gabriel Rolled Steel Coal Chutes.

Name _____________________________________________

Address __________________________________________

A. B. 9-25

MORE PROFIT and EASIER SELLING

for the builder—greater satisfaction and economy for the buyer (and its resulting goodwill for the builder), are a few of the many real values in “Tidewater” Cypress construction.

Fortified with a natural preservative against the rot-producing agencies of humidity, bacteria, fungus growths and moisture, “Tidewater” Cypress is the best material for all parts exposed to the weather or in contact with the soil—foundation sills, siding, shingles, porches (supports, floors, steps, rails and columns), cornices, sash, frames, doors, and all exterior trim.

For interior economy, beauty and durability, “Tidewater” Cypress is an ideal trimwood in natural finish, under stain or enamel. Easy to work.

It pays to know all the advantages of “Tidewater” CYPRESS in carpentry work of every kind.

WRITE TODAY for descriptive literature (also on Tupelo, the hard-wear flooring.)—IT’S FREE.

Correspondence invited regarding special problems.

SOUTHERN CYPRESS MFRS. ASS’N
1216 FOYDRA'S BUILDING, NEW ORLEANS, LA.
or 1216 GRAHAM BUILDING, JACKSONVILLE, FLA.

The Arrow identifies the genuine “Tide- water” CYPRESS

Look for the Arrow on every stick and bundle you buy.
Built For A Specific Purpose

Practical - Sturdy - Economical

The WOLVERINE F-3 is one of the most popular all around general purpose barrows made and adapted for all high grade construction work. Used by leading contractors everywhere and built by America's oldest and largest manufacturers of wheel barrows.

These important features have been best worked out by Lansing-Company engineers; viz:

The TRAY—pressed from a single sheet of steel has a smooth uniform surface. A heavy rod is rolled within the flange on the top edge giving it rugged strength. The tray is mounted on the handles by hardwood risers.

HANDLES—are mounted to such a height as to give the most comfortable operating positions. It is well balanced. A heavy iron yoke connects the handles at the wheel end. The lumber used throughout is a high grade Michigan hard wood.

WHEELS—are extra heavy with steel bushings in the hubs and are firmly held by the Lansing “Never Slip” axle lugs.

Lansing-Company products have dominated their respective fields in low operating and maintenance cost for forty-four years.

For Permanent Beauty

Contrasting greens and blues and gray emphasize the whiteness and permanent beauty of the home stuccoed with Pyramid Stucco.

Architects and Builders, by specifying Pyramid Stucco you insure your good name and assure your client walls that will remain permanently white and permanently dry. Dampness can never penetrate this stucco. Pyramid Stucco, when properly applied, becomes extremely hard. It has remarkable strength—strains that crack ordinary stucco will not develop a hair line check in Pyramid Stucco. Expansion and contraction will not crack Pyramid because of its remarkable elasticity, due to its high magnesite content. Our guarantee covers your job.

You cannot afford to trust your reputation to common stucco, especially when Pyramid is more economical than ordinary stucco.

Literature more fully describing the distinctive qualities of Pyramid Stucco, specification booklet and price lists will be mailed you at your request. The coupon below is for your convenience.

PYRAMID COMPANY
231 South Wells St., Chicago, Ill.
An Electric Grate
That Really Heats

The “Glo-Hot”
No Flue Necessary
(PATENTS APPLIED FOR)
Approved by Board of Underwriters

GIVES real fire effect and heats at the same time. Absolutely odorless and clean. At the first snap of the switch the grate is flooded with a life-like flicker of glowing coals. At the second snap of the switch the heat flows out from the concealed “Glo-bar” unit under the hood. The scientifically designed copper reflector throws all the heat rays straight into the room.

The Glo-Hot comes closer to the real effect of a fireplace than ever before attained. The cost of operation is low compared with any type of auxiliary heating where flue is used for the escape of smoke and gases with subsequent waste of heat.

The old English grate of polished steel and iron with solid brass ornaments and deep chested grate space for the colored glass coals is unusually attractive. Standard Size — 1,000 Watt — 110 Volt requires No. 12 wire on separate circuit, but no special wiring is required for the 500 Watt — 110 Volt Size. It may be connected to any ordinary house lighting circuit.

Specifications and prices on units of greater heating capacity furnished on request.

Dimensions — Width 24", height 22", and depth 12".

Write for complete descriptive circular giving full details and illustrations showing construction, plans, etc.

Colonial Fireplace Co.
Also manufacturers of the Colonial Head Throat and Damper — Complete fireplaces, fireplace furnishings such as grates, screens, hoods, etc.

4604 W. Roosevelt Road, Chicago, Illinois

Hydrex Building Paper is saturated and then coated on both sides with impregnating oils and bitumen. This COATING is very important as it seals in the interior oils, thus protecting the paper against rain, wind, and alkali in stucco, thereby infinitely extending its life and service.

The cost on the average job of a COATED paper as compared with the cost of an inferior Uncoated paper is amazingly small.

Send for sample and literature

A few valuable territories are open to progressive dealers. Write if interested.

HYDREX ASPHALT PRODUCTS CORPORATION
Waterproof Felt, Cloth, Matting, Building Papers, Deadening Felts, Roofings, Paints, etc.
Specialists in Structural Waterproofing, Insulation and Soundproofing
120 Liberty Street, New York
Chicago
Philadelphia

Hydrex—the Building Paper with the Red Label.
Some Handsome REDWOOD INTERIORS

REDWOOD is primarily the wood for everlasting exteriors. Permeated with a natural preservative during growth, it is immune to all forms of decay—is the most economical and most satisfactory lumber and millwork for the outside of frame houses.

No wood outlasts Redwood for clapboards, siding, shingles and cornices, for porch posts, railings, balusters and finish, for sills and foundation timbers, for window and door frames, pergolas, summer houses, garden furniture and greenhouses. Redwood shingles have given forty years of service and remained sound and strong.

For interior construction and decoration Redwood has much to commend it, for wide panels and beamed ceilings, in natural finish, waxed or varnished. It can be secured in extra-wide clear boards. Properly seasoned Redwood does not warp, shrink or swell. Its range of beautiful grain is almost endless. Redwood’s salmon-pink to reddish brown color affords unique possibilities in natural and waxed finishes.

Write for our “Construction Digest” and for a free sample of Redwood siding. Grade 4 grade Redwood costs little more than other woods that cannot compare with it for rot resistance.

FOR EVERY REQUIREMENT

The New DAYTON “CUB” $85

The Dayton “Cub” is an outstanding value at its low price of $85.00. It is recommended where source of supply is not more than 20 feet (vertical) below pump, and a supply up to 200 gallons per hour is wanted. It occupies little space and like other DAYTON models is covered by a written guarantee.

An Ideal Line-Up!

BUILDERS and architects who now invariably specify DAYTON Automatic Water Supply Systems for any running water requirement have not depended upon reputation alone to establish DAYTON supremacy. Comparison of mechanical features has many times settled the matter of superior performance and dependable operation.

With dependability established the builder, too, has a further reason for specifying a DAYTON—Completeness. With the new DAYTON “Cub,” having a capacity of 200 gallons per hour and selling as low as $85.00, and other models ranging in capacities up to 3000 gallons per hour for either shallow or deep wells, the DAYTON line-up will meet every requirement in city, suburban or country home.

You should have this valuable booklet, “Dependable Water Service,” which contains practical information about sanitary water systems that every architect and builder should know. It is yours for the asking. This booklet should be in your reference file also free information service blanks with which to secure experienced recommendation of the correct model for any job. May we send it to you?

The Dayton Pump & Mfg. Co.
Dayton, Ohio, U. S. A.

Please send, at once, my copy of “Dependable Water Service”.

Dayton Pumps
Make the water do the running
More and Better Concrete Per Hour can absolutely be had by the use of "THE STANDARD MIXERS"

1st— the charging scoop is wider and steeper, the load is dumped in place faster.
2nd—it is dumped in one concentrated pile in the drum—not all over a wide bottom, consequently the operation of bringing it into a pile is eliminated, more time gained.
3rd—as the drum is larger in diameter it mixes more thoroughly and quicker.
4th—the discharge opening being larger, the chute wider and steeper, the contents are discharged quicker.

There is a great saving in every operation. Besides the low and power charger are interchangeable.
The controls are centralized where operator can see the mixing and control at same time.
The chassis is firm—non-tipping.
The front wheels turn very short.
It will go anywhere.

May we send you our literature?

The Standard Scale & Supply Corporation
1631 Liberty Avenue
Chicago Cleveland Philadelphia New York

The DE WALT WONDER-WORKER BUILDERS and MILL Owners

It is fascinating to watch this machine work.
Every cut precise and quickly made.
A 16' foot STAIR STRINGER routed accurately in 20 minutes. Cross cuts and rips almost as smooth as a planed finish.
A DE WALT WOODWORKER will do practically all the special Mill class of work right on your job rapidly and satisfactorily.
Built in four sizes.
Two men can easily carry the machine from floor to floor. No legs to make it harder.
Think of it! This DE WALT WOODWORKER will cut 20 different kinds of cuts in one hour and every cut as fine as you have ever seen it done. This time includes machine changes and cutting. Can you beat it?
Any Carpenter or Mill-hand can work it. No expert required.
Think of the saving of TIME on Your Jobs. Money saved.

Read This Letter
EVANS CONSTRUCTION COMPANY
Scotty Ave. and Broad St
Rahway, N.J.

March 24, 1925
De Walt Products Company
Leola, Penna.

Gentlemen:
We have had a De Walt Woodworker in our shop for the past year. We use it for housing stairs, for cross cutting, all sorts of bevel cuts, and we have witnessed no trouble with it to date.
We certainly think a great deal of this saw and we would not be without it.

Very truly yours,
EVANS CONSTRUCTION COMPANY
Thomas H. Evans
President.

De Walt Products Company
Leola, Lancaster County, Pa.

The DE WALT WONDER-WORKER

2 H. P. Mitering and Beveling in one operation

Machine accurate and good for a lifetime.

Mailing Coupon

De Walt Products Company,
Leola, Lancaster County, Pa.

Gentlemen: Without obligating myself, please send me Catalogue, full particulars and prices of the De Walt WOODWORKER.

Name

Address
You Can Use This Saw Anywhere

Take It Right To The Job

One of the big advantages of the Onan "Safty Saw" is that you can take it anywhere. Just plug in on the lighting circuit and the saw is ready for immediate use. No delays. No Installation charges are necessary.

You Will Pay the Cost on a Single Job—Capacity, 2 x 12 in.—1 x 15 in.

All Standard Building Dimensions

The Onan "Safty Saw" is a compact, complete, all-steel unit run by an electric motor. Easily moved. Nothing to break or get out of order. Use this saw for cutting and sorting—rough or smooth, setting up, installing. You will use this saw in more places with but a fraction of the operating cost. Repairing, general carpentry work—any sawing job. With extension leaves, it makes a work bench 8 ft. long. Works so fast and economically that it soon pays for itself. One man with an Onan "Safty Saw" can do the work of 10 men sawing by hand. This is a saving in labor alone of 90%.

Furnished with Either Gasoline or Electric Motor

TRY AT OUR RISK!

Cost Less Than One Half of Any Machine of Equal Capacity

Get the full facts about the Onan "Safty Saw". Read the letters of satisfied users. See how handy and convenient this saw really is. To prove to you the savings you can make, we will send the saw on trial. Write today for descriptive circulars and trial offer. No obligations now or later.

Write your name on the coupon and mail with a letterhead or piece of your stationery. We know what information you wish and will get it to you promptly.

Name
Firm
Address

D. W. ONAN & SONS, 45 Royalston Avenue
Minneapolis, Minn.

ONAN "SAFTY SAW"

---

"Draw with a Claw
Tack with a Whack"

That's the way the Crofoot tacker works. 77 times you can draw and 77 times you can whack. Each whack you may be sure of that staple going to the spot where directed.

The Crofoot is the simplest and best device for fastening screens. 5 times the speed of tacks and hammer; absolutely guaranteed. One loading, 77 staples. Can be reloaded in 3 seconds. All working parts made of high-grade steel, properly hardened and tempered. Does not clog or get out of order.

Genuine Crofoot Staples are packed only in sealed boxes under the Crofoot Trade Mark. 10,000 staples to the box.

Fast as you whack it, Crofoot's Tacker tacks it.

Order Now at Our Risk—$9.75

Return within 10 days if not entirely satisfactory, and we will refund purchase price less amount for actual staples used. The price, $9.75, is complete Crofoot Screen Tacker and 10,000 staples.

J. B. CROFOOT CO.
P. O. Box 783, CHICAGO, U. S. A.

Sales Manufacturers of
Crofoot Shade Tackers, Tag Tackers, Screen Tackers and Genuine Crofoot Staples for same

CROFOOT
SCREEN TACKER

Crofoot Tackers Patented U. S. and Foreign Countries

J. B. CROFOOT CO.,
P. O. Box 783, CHICAGO, U. S. A.

Mail order postpaid.

---

AMERICAN BUILDER (Covers the Entire Building Field) 247
Leaky Concrete Made Waterproof with an “ANTI-HYDRO” Plaster Coat in this Post Office

The concrete pits and walls of the pipe tunnels in this post office leaked badly. A cement plaster coat mixed with “ANTI-HYDRO” was applied to the inside of the walls and pits and now they are absolutely and permanently waterproof.

There is not a single concrete waterproofing or hardening problem that cannot be successfully overcome by the use of “ANTI-HYDRO.” It is an easy-to-use liquid integral agent that mixes readily with the gauging water. Results are guaranteed permanent.

“ANTI-HYDRO” has been repeatedly specified and used by leading architects, engineers and contractors for 21 years. Use it on your next job.

ANTI-HYDRO WATERPROOFING CO.

265 Badger Ave. Newark, New Jersey

ESTIMATING AND CONTRACTING

900 Pages, 5x7½ Inches

A mistake in estimating means the difference between a profit or a loss on a contract. In these days of modern construction, it is not safe to guess or go by “rule of thumb.” Even experienced contractors who rely upon eyesight or rough calculations make costly errors.

Do Not Overlook Details

It is mighty easy to overlook some important detail if it is not down in black and white. Jobs are lost because of too high prices. Profits are lost because prices are too low. Be on safe ground; have a reliable, accurate guide to help you in your figuring.

Radford’s Estimating and Contracting is a safe and sure guide for any contractor. Its 896 pages are filled with up-to-date methods for rapid, systematic and accurate calculation of costs of all types and details of building construction and all related work of contractors.

Helps to Easy Figuring. It gives quotations and other data indicating the cost of materials and labor, standard schedules and forms used for measurements and estimates, labor-saving tables and all other points a contractor, builder or carpenter should know. PRICE, POSTPAID $5.00.

RADFORD ARCHITECTURAL COMPANY
1827 PRAIRIE AVENUE, CHICAGO, ILL.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
This 24-page booklet with its illustrations will help you select the proper bath room trimmings for either the humble bungalow or mansion. Our "SNO-WITE" products, numbering more than 200 items, include both surface and recessed type trimmings, medicine cabinets and mirrors.

The most important room in the home can also be the most beautiful by equipping with "SNO-WITE" Bath Room Trimings. "SNO-WITE" trimmings are made of enameled iron, finished in glistening, vitreous porcelain enamel under a special process originated by us.

Originators of Porcelain Enameled Bathroom Trimings

AMERICAN ENAMELED PRODUCTS COMPANY
2101 INDIANA AVENUE
CHICAGO, ILLINOIS

You can have them for saying, "I WILL." Will you?

Successes of Life are for those who reach out for them. YOU can have them for saying, "I WILL." Will you?

Are you content to make a small profit slowly on hand labor or a large profit quickly by means of a modern machine?

LETT THE MAGIC MIXER-

Mix Your Concrete Does It Faster—Better—Cheaper

This mixer puts you in the position to do all kinds and classes of concrete work. It lifts you out of the old, expensive shovel and mixing board method, enabling you to work faster, to do more work, to do bigger work, to do better work and cheaper with a bigger profit on every single job.

The Best Mixer On The Market

The most practical and efficient Mixer in America. With the "Magic" and two men you can do as much work as you formerly did with six men. You can do it easier, quicker and better, producing an absolutely uniform batch every time. Loads and dumps from either side. Mixes 4 1/2 to 5 1/2 cubic feet per batch — can be speeded up to a batch 1 minute — over 2,000 cubic feet per day. Mechanically simple yet perfect. Fitted with 7 1/2 horse power, 4 cycle horizontal type gasoline engine. Powerful, reliable, economical — requires only 3 gallons of gasoline a day. Protected by all-steel housing. Two doors at rear make it easy to get at. Comes complete ready to take on the job the minute it arrives. Nothing complicated — nothing to get out of order. Can be operated by any one who will read the simple directions which accompany each machine. Mounted on steel wheels. Guaranteed to give satisfaction.

Get It On Free Trial

Just $25.00 brings it to you on 10 Days Free Trial; should you not be perfectly satisfied return it and get your money back.

INVESTIGATE—THIS MEANS MUCH TO YOU

The road to bigger profits, bigger business, bigger success is open to you. The opportunity to make yourself a big man is before you. Don't sit idly by while other men are forging to the front. Get the facts. The simple act of signing and mailing this coupon may be the turning point in your career. The time to act is NOW.

621 Olive St. A. S. ALOE CO. St. Louis, Mo.
The Money Saving Way
- Wood Floors Over Concrete

You actually save $50.00 to $60.00 per thousand square feet in laying wood floors over concrete by using Bull Dog Floor Clips. The solid one-piece construction feature of Bull Dog Floor Clips is one point in their favor. The large anchorage surface is another. The simplicity of installation is still another. There are many other points of merit that recommend the Bull Dog method of floor anchorage to good architects and contractors.

If a Fill Is Required You Continue to Save

Bull Dog Floor Clip Co.
WINTerset, IOWA
96 Branch Sales Offices
15 Convenient Distributing Points

OUR CATALOG

is a complete file in itself for plumbing and heating supplies. Our catalog is a reference of the best in supplies. If you haven't a copy, let us send you one. It will help you in your work of visualizing to your client the bathroom furnishings, plumbing and heating installation.

Our modern lavatories, bath tubs, sinks, closet bowls and tanks are made of the best porcelain enamel. These are well made and reliable.

BOWMAN SUPPLY & MFG. CO., Inc.
878-892 Progress St., N. S.
Pittsburgh, Pa.

INSTALL STEEL WALL CABINETS
in the Kitchen

Builders and Contractors!
Make the home more sanitary and convenient.
Install Steel Wall Cabinets.

These Steel Wall Cabinets provide many square feet of extra shelf space. Equipped with sliding doors—no outward swing, no bumping of heads—very essential in cabinets over sink. Easily cleaned. Women appreciate steel wall cabinets because they are convenient and improve kitchen sanitation. Appeal to the housewife by installing Steel Wall Cabinets and see how quickly you earn or build 4 sizes—30” to 48”.

Write for Circular “C”. It is free.

Milton C. Dwight Powell
58 East Washington St. - - - Chicago

What is the most popular color in marble?
ROYAL GREEN, of course!—

We have Sylvan Green, Royal Green, Creme Green, and Evergreen Marble for Stucco Dash, Terrazzo Floors and Interior Marble Work.

ROCK PRODUCTS CO.
Facings
EASTON, PA.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
This Kind of Floor shows off furnishings to advantage

Home owners find that a beautiful oak floor enhances the beauty of their furnishings, their walls, pictures and hangings.

Even furniture of moderate cost is displayed to the best advantage when well set off by open spaces of nicely selected and laid oak flooring.

Oak is oak, but the selection of certain figures in oak, the finish of the surface and perfect matching is what determines beauty of a laid oak floor.

"Perfection" Brand Oak Flooring is the cream of the stock. It takes a velvety lustre. It matches perfectly. The older it is, the more its beauty appeals to the eye.

For better satisfaction of the architect, the contractor and the owner, "Perfection" should be used. Technical data and a copy of "The Overlooked Beauty Spots in the Home" sent on request.

ARKANSAS OAK FLOORING COMPANY
Pine Bluff, Arkansas

"PERFECTION"
Brand Oak Flooring

NOW: we can take the jobs we had to refuse!

With the tremendous increase in concrete construction, the contractor who has no Syntron Electric Hammer is badly handicapped. Quick Service Electric Co., Pittsburgh, wrote:

"Our men are enthusiastic about the Syntron. We can now take contracts for work we were compelled to refuse before."

SYNTRON
Electric Hammer
The Tool of 100 Uses

Drills 3 inches a minute into concrete or masonry. Chips or channels as fast as ten men. Saves 90% in time and costs on a hundred different jobs. No motor or gears to get out of order. Operates from any light socket. One man easily carries it. See the Syntron exhibit at the Iron and Steel Exposition, Philadelphia, Commercial Museum, September 14 to 19.

New Purchase Plan Lets You Buy Syntron Out of its Savings

Mail This Coupon Right Now


Name

Firm

Business

Address


When Writing Advertisers Please Mention The American Builder
"We would not think of getting along without Reliable Brackets"

That's a pretty good recommendation from an experienced and successful building contractor! Read this letter—

Grove City, Pa.
Elite Manufacturing Co.,
Ashland, Ohio.

Gentlemen:

About a year ago we ordered two dozen of your Reliable Brackets, then later we got half a dozen more. We ordered them thru our local lumber dealer. We also bought two dozen of your roof brackets from your Mr. Kemeling. They have all paid for themselves, in fact we would not think of getting along without the Reliable Brackets.

Yours very truly,
A. M. Eakin & Son Co.

This letter is just like hundreds of letters we are getting all the time. Builders and contractors everywhere are telling us how much safer and more economical Reliable Scaffold Brackets are than the old wooden scaffolds.

There are no holes to plug up after using Reliable Brackets.

Send in your order and start saving money now. All of these brackets will save you lots of time and money—Roofing Brackets, Hook Type Bracket, Ladder Bracket, Corner Bracket and standard Scaffold Bracket.

Send for our illustrated folder describing these brackets or order now. We ship C. O. D. so you can see the brackets before you pay a cent.

ELITE MANUFACTURING COMPANY
Ashland, Ohio

There's more profit in a Huther Saw

There's more profit in a Huther Saw

Backed by fifty years experience in the making of highest grade saws, each Huther Saw has a quality built into it that insures maximum length of service.

ROCHESTER, N. Y.
Makers of Better Saws for More Than Fifty Years
**Instant Waste Disposal**
—time tried and proved

In such excellent homes as this one which Architect Linhoff has created for S. P. Crosby of St. Paul, the Kernerator is the accepted means of garbage and waste disposal. For this great convenience removes for all time the most distasteful task of housework—and the moderate first cost is the only expense, since it—

**Costs Nothing to Operate**
**No Fuel Required**

The waste itself is all the fuel required. As shown, the Kernerator consists of a brick incinerator chamber, built in when building is being erected, with handy hopper door opening into the flue in or near the kitchen. All waste—garbage, sweepings, tin cans, bottles, broken china, rubbish of all sorts—when dropped through the hopper door, falls to the combustion chamber. Here an occasional lighting burns everything but metallic objects and the like. These are sterilized by the flame and later removed with the ashes.

For full details see Sweet's, pages 2536-37 (1924) or write

KERNER INCINERATOR CO.
1053 Chestnut St. Milwaukee, Wis.

The Kernerator must be built in at the base of the regular chimney when building is being erected—it can rarely be installed later.

---

**Hagarty Says:**

“To get Packard service and Packard class, you've got to have a Packard—no makeshift car will answer.

“Same way with Stucco—only way to get Rocbond results is to use Rocbond—a good half inch.”

---

**Rocbond**

**Exterior Stucco**

**A Good Half Inch**

**FOUR PLANTS**

Write the one nearest you.

---

**The Rocbond Company**

Van Wert, Ohio Harrisburg, Pa.
Cedar Rapids, Iowa New York, N. Y.

---

The Rocbond Co.

A. B.

Please send me "Homey Homes" book describing Rocbond Stucco. No obligation is assumed.

Name: .................................. Address: ..................................

---

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Whatever You Need in Concrete Machinery

From the large batch mixer with side loader or platform down to the small hand power mixer, from a complete block making plant down to the simplest concrete mold, there is efficient equipment in the Panama Line that will satisfactorily meet your needs.

Panama Concrete Machinery assures the highest quality products, peak production at the lowest possible consumption of time, labor and money.

Write for the “Panama” catalog of Concrete Mixers and Concrete Block Machinery.

The J. B. Foote Fdy Co.
14 Front Street Fredericktown, O.

Panama Concrete Machinery

That problem of gas supply permanently solved—

Modern invention has made it possible for you to have gas in your suburban or country home by installing a little inexpensive GAS PRODUCER of your own.

The CLARK GAS PRODUCER with equipment is not merely a convenience—it is an absolute necessity to economy, convenience and safety. It requires little or no attention and very quickly pays for itself in time, fuel and labor saved.

It gives you an abundant supply of gas for cooking, heating water for baths and laundry purposes, operating the Humphrey radiantfire for room heating, laundry mangles, clothes dryers, etc.

A handsome folder just off the press gives valuable information. Send for your copy today.

Manufacturers of Clark Gas Producers and Equipment Exclusively for more than thirty years

AMERICAN HEATING & LIGHTING COMPANY
Dept. S, MORENCI, MICH.
When you specify a water softener for the houses you build, you want one that is guaranteed to give satisfactory soft water service—one that is economical, with quality beyond question—one that will help greatly to make the homes you build, preferred homes.

Duro Automatic Water Softener

Here are a few of the reasons why you should specify the Duro Automatic Water Softener:

1. It is completely automatic in operation. It is necessary to replenish salt charge only a few times each year.
2. Perfectly softened water—free from discoloration—is supplied at city pressure. There are no restrictions to the flow of water.
3. Positive, dependable, economical operation. Supplies 22% to 50% more soft water per pound of salt than any other softener made.
4. Not limited to certain water pressures. It operates equally well on any pressure from 15 to 125 lbs.
5. Rust and corrosion resistant materials used throughout. All valves made of bronze. Containers either galvanized or specially enamelled inside and out. Will last indefinitely.
6. Quick-acting Durolite greensand mineral is used—proved, staple, non-deteriorating, non-caustic.
7. Fully covered by the Duro iron-clad guarantee.
8. Shipped completely assembled ready to operate, making installation cost low.

Write today for complete information.

THE DURO PUMP & MFG. CO.
109 Monument Ave. Dayton, Ohio

Duro Guarantees Satisfactory Water Service

All Thatcher Ratings Remain Unchanged

The ratings of Thatcher Steam and Hot Water Boilers were first established on a most conservative basis. Since that time, they have never been "boosted" in the slightest. This means that Thatcher Boilers will heat buildings evenly to 70 degrees in zero weather, with ample reserve capacity for still colder weather.

There is no need to force Thatcher Boilers, even on the bitterest days. They are easily regulated by a butterfly door in the ash pit and a sensitive diaphragm attached to a large damper in the smoke hood. This control system removes the necessity for forcing, saves much coal, and gives each room its proper proportion of heat.

It will pay you to get all the facts on Thatcher Boiler Ratings. The coupon below will bring you the new Thatcher Boiler Catalog which contains full information. Send it in today.

THE THATCHER COMPANY
Formerly Thatcher Furnace Co.
Since 1850
39-41 ST. FRANCIS ST., NEWARK, N. J.

MAIL THIS COUPON
THE THATCHER COMPANY
39-41 ST. Francis St., Newark, N. J.

New York
21 W. 44th St.

Chicago
341 N. Clark St.

THATCHER
BOILERS . FURNACES . RANGES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Absolute reliability—you can bank on your STEWART MIXER for constant, uninterrupted service.

Complete convenience—you will find your STEWART MIXER simple to operate and easy to move around on the job.

Bed-rock economy—you will find that your STEWART MIXER costs little to run, little to maintain, and an unfailling producer of good concrete at less cost per yard.

You want a STEWART MIXER. Ask us to mail you at once specifications and prices on the various sizes and models.

Complete stocks in most principal cities.

STEWART MANUFACTURING CO.
157 Rath Street
Waterloo, Iowa

Here's the New "YANKEE" RATCHET BRACE No. 2100

MADE FOR THOSE WHO APPRECIATE THE BEST
There has never been a Brace like it

FAMOUS YANKEE RATCHET—Works like a watch, but unbreakable. Dust-proof! Moisture-proof! Quick, positive shifter. CHUCK—New, patented, quick centering. Holds any bit (Round, Square or Taper) accurately and can't loosen. Ball Bearing—Two-jaw. Capacity, half-inch. HANDLES—Hard rubber. Won't warp, shrink, crack or bind. Top handle ball bearing.

Made and finished like a precision tool, in keeping with the "Yankee" high quality. Ask your dealer to demonstrate it to you. It must be handled to be appreciated.

Hutchinson Manufacturing Co.

Gentlemen—About May 20, 1923, we received from the factory a Hutchinson Speed Marvel which we purchased with a view to reducing labor costs in our construction work. We built in units of ten houses. The houses, as were those of other builders, were equipped with Galwofix partitions. The houses were erected in Newark, N. J., 130 feet from the factory location.

We have been so pleased with the Speed Marvel that we now have a total of six machines on our pay rolls. They have been in use ever since May 20, 1923. In our opinion, they have made a tremendous difference in the cost of labor. We believe that the Speed Marvel is the best producer on your pay rolls. You, too, would say that the Speed Marvel is the best producer on your pay rolls. And don't overlook the fact that after the first job the Speed Marvel costs you nothing—and works for years without repair bills. Right for the shop, and easy to take out on the job. Mail the coupon for details.

Dry or Wet Batches Equally Easy With a Smith

The advantages of the mixer that is easily adapted to mixes of all kinds—that can be used for mixing mortar for brick, stone or tile placement are many. It means the elimination of extra equipment, low cost of operation, and time saved.

Smiths are adaptable to any mixing conditions—with materials of extreme wetness to those of extreme dryness. And of particular value for mortar and similar mixes is the Smith 3½-S illustrated above.

This little mixer is the famous Smith tilting type that permits speedy discharging and absolute self-cleaning of the drum. It holds a batch larger than the non-tilting mixer of the same rating and because of its end-to-center mixing action (an exclusive Smith feature) an accurate, thorough mix is insured. It is quality built, to give fast, dependable service throughout a long life.

Send for our latest catalog—describing this mixer—today.

The T. L. Smith Company
1026 32nd Street, Milwaukee, Wis.
G & B Junior Latest Type CONVERTIBLE LEVEL

THE WORLD'S GREATEST
LEVEL and TRANSIT COMBINED

10 Days FREE TRIAL

$5.00 Will Bring It to You

BAKERS CASH ON TERMS

No extra or loose parts, no confusion, simple and positive. Safe, sure, accurate, and speedy. Learn to use it in less than an hour with our illustrated Instruction Book.

GEIER & BLUHM, Inc., TROY, N.Y.

DOUB LE PROFITS

Pipe, Tile and Cobert Molds All Sizes $16.00 up

Flower Box Mold $30.00

Porch Outfit Complete $59.80

There is BIG money in concrete work for the man with UTILITY equipment. Costs no more but gives best results. Order direct or write headquarters for complete catalog and prices.

Concrete Equipment Co.
500 Ottawa St., Holland, Michigan

UTILITY CONCRETE EQUIPMENT

Lan e Beam Hangers

Thousand in stock ready for immediate shipment.

Send for catalog and free sample

Lane Brothers Company
Carroll Street
Poughkeepsie, N. Y.

In-The-Wall Simplex Ironer

(Gas or Electric)

The Simplex ironing machines saves the labor of ironing by hand and fits ideally into any kitchen as a built in feature. Helps to sell the home. The Simplex is safe and sturdy. Folds compactly into a space 19 x 20 inches.

Write us today.

AMERICAN IRONING MACHINE CO.
100 East Ohio St. at Michigan Blvd.
CHICAGO, ILL.
Study Architecture at Home

Hundreds of men have become successful architects through the home-study courses of the International Correspondence Schools.

The textbooks are complete and practical, and are so well regarded by educators that they are used by many leading colleges and technical schools, including Cornell, the Iowa State College of Agriculture and many others.

Geo. A. Grieble, who was a stone cutter when he enrolled with the I. C. S., is now making $10,000 a year and was Superintendent of General Construction for the State of Ohio for two years before he opened his own office.

Ralph M. Snyder, another I. C. S. student and a former clerk, earned $12,000 the first year he started in business for himself as an architect. The Equitable Building in New York City was erected under the direction of I. C. S. student H. S. Gardner, then Superintendent of Construction for the Thompson-Starrett Co.

The first step these men took was to mark and mail an I. C. S. coupon similar to the one below.

Make your start the same way and make it right now. We'll gladly send you free information about the I. C. S. courses in Architecture or any other course in which you are interested.

Mail Coupon for Free Booklet

INTERNATIONAL CORRESPONDENCE SCHOOLS
BOX 8146-C SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I have marked an X: [ ] Navigation [ ] Salesmanship [ ] Advertising
[ ] Window Trimmer [ ] Show Card, Sign Painting [ ] Business Management [ ] Private Secretary
[ ] Business Correspondent [ ] Bookkeeper [ ] Stenographer and Typist [ ] Higher Accounting
[ ] Commercial Law [ ] Common School Subjects [ ] Mathematics
[ ] Good English [ ] Illustrating [ ] Railway Mail Clerk [ ] Civil Service
[ ] Mining Engineer [ ] Metallurgy [ ] Gas Engine Operating [ ] Traffic Manager
[ ] Automobiles [ ] Spanish [ ] Poultry Raising [ ] French
[ ] Chemistry [ ] Agriculture [ ] Textile Overseer
[ ] Foreman [ ] French [ ]更高的 Accounting [ ] Stenographer and Typist
[ ] Textile Overseer or Supt. [ ] Business Correspondent [ ] Higher Accounting
[ ] Farm Accountant [ ] Business Correspondent [ ] Higher Accounting
[ ] Civil Engineer [ ] Plant Superintendent [ ] Higher Accounting

The International Correspondence Schools are the oldest and largest correspondence schools in the world.
The GRAF BUILT-IN IRONING BOARD

Graf built-in cabinets are the solution of the labor problems in the home and are fast becoming recognized as an almost indispensable part of every modern kitchen.

Easy to Install

The Graf Ironing Board Cabinet fits between 16 inch standard studding. This saves the labor and expense of framing and cutting to fit.

Exclusive Graf Features

Unlike other boards of similar nature, the Graf is not hinged, but rather slides in grooves to the bottom of the cabinet, making it possible to have the larger ironing board 5' 3" long in a 6' 8" or 7' cabinet. Five supports—absolute rigidity, no wabbling—no fastenings to loosen, no metal supports to come in contact with clothes. Handy compartments to come in contact at top and bottom.

SOLD ONLY TO DEALERS
WRITE FOR PRICES

WETZEL-RIETER MFG. CO.
168 No. Michigan Ave.
Chicago, Ill.

BUCKEYE

Electric House Pumps for wells and cisterns under 22 feet in depth.

Automatically oiled and controlled. The Buckeye electric house pump will need a minimum amount of attention. The time saved alone will be a big return on the investment.

At the turn of a faucet you are always assured of plenty of water. Buckeye efficient—Buckeye durable—outstanding in its many Buckeye improvements. We guarantee our pump. For further information write for circular.

B. M. CROPP CO.
400 N. Claremont Ave.
CHICAGO, ILL.
Let Our Architectural Department Help You—

A BETTER barn means a more satisfied customer for you. Let our architects help you with suggestions and plans. No obligation for you or the owner.

Ask for Plan Book No. 64—full of boiled-down building information on barns and hog houses. You’ll find it invaluable for reference.

Also ask about Porter complete equipment for barns and hog houses—standard equipment for 68 years.

J. E. Porter Corporation
512 Guion Street
OTTAWA, ILL.

Let This Folding Drawing Table Solve Your Space Problem

Strong and steady when in use—yet light and easily portable—folds compactly and can be tucked away out of sight in any corner. Just the thing for contractors and builders having limited office space—but is just as good for permanent equipment.

Only $4.50
Ask for Dietzgen Folding Drawing Table No. 4430, at any dealers, or direct from us.

EUGENE DIETZGEN CO.
Chicago New York
New Orleans Pittsburgh
San Francisco
Philadelphia Washington
Milwaukee Los Angeles
Factory at Chicago

Drawing, Surveying, Mathematical Instruments & Materials, Measuring Tapes

A Business of Your Own!

$3000 to $6000 a Year

Here’s a genuine opportunity to establish a profitable business of your own in your city as a weatherstrip contractor.

Weatherstripping is a tremendous business. Every home, school, church and office building both new and old, is a prospect. In one city alone, $150,000.00 worth of Sager weatherstrips were installed during the last year.

We are extending our work and can offer some choice territories to high grade men. To men who have some capital this offers unusual possibilities to work up a large prosperous weatherstrip business. Not an experiment. There are five hundred successful Sager contractors from coast to coast. Leading Architects and Engineers the country over have placed their stamp of approval on Sager Metal Weatherstrips. Sager strips are fully protected by patents, and exclusive rights will be given to one man in each district. Our whole proposition is explained in detail in a book entitled “The Sager Plan”.

Mail the coupon today and it will be sent to you.

SAGER METAL WEATHERSTRIP CO.
2531 HOMER ST., CHICAGO, ILL.

Mail Coupon Today and Receive Our Book
**Wonder Hoists**

The highest grade Reversible Hoist of its size. Simple, compact, dependable. Equipped with adjustable, positive asbestos lined brake—internal expanding asbestos faced clutch—builders' sheave.

Write for Special Hoist Bulletin

Construction Machinery Company
103 Vinton Street
Waterloo, Iowa

---

**Twice-tested-fully Guaranteed**

The HERCULES ENGINE is perfectly designed. It is accurately constructed of materials too good to be bettered. And to make absolutely sure that the HERCULES ENGINE you get will stand up under hard service and prove by actual performance that it is a better engine than any other engine made, we put it into actual operation twice before it leaves the factory.

When you use a HERCULES ENGINE with its wonderful Wico Magneto, its perfectly balanced rotating parts, its reliable governing mechanism, you are sure to have plenty of power on the job every minute. More than 400,000 HERCULES ENGINES are in service.

**The Money Making Possibilities**

WRIGHT RUBBER TILE

This new 24 page Twice-tested—Fully Guaranteed book shows how easy it is to sell and lay beautiful floor material.

Write for your copy today—Sent free prepaid without obligation.

---

**Cuts Mortises Five Times Faster**

The Champion Mortiser cuts mortises five times faster and a hundred times neater than the hammer and chisel method. Eliminates danger of ruining material. Used by Contractors and Carpenters everywhere.

---

**Want to Get Into Business for Yourself?**

Learn how contractors, builders and floor layers are developing a fine business in selling and laying WRIGHT Rubber Tile and Stair Treads

This new 24 page book shows how easy it is to sell and lay this long wearing, beautiful floor material.

FREE This 24 Page BOOK

Write for your copy today—Sent free prepaid without obligation.

---

**The New Improved Champion Mortiser**

Cuts a Perfect Mortise in a Minute or Two

---

**The Hercules Corporation**

Engine Division
Evansville, Ind.

**Hercules Engines**

Gasoline Models 1½ H. P. to 14 H. P. Kerosene Models 3½ H. P. to 14 H. P. Each Hercules engine is tested twice before it leaves the factory and is guaranteed to deliver the full rated power.

---

**Colgan Machinery & Supply Company**

409 Hayden Bldg., Columbus, Ohio

---

**Money-back guarantee**

1. not satisfied after ten days trial return our engine and get your money. You run no risk. Send today! Descriptive literature on request.
A Firmer Footing—at Less Cost

Nothing is more essential for efficiency and safety than a firm foot grip; no plate made can give your men a better footing than Central Floor Plate. They have a remarkable gripping surface, are rust resisting and easily cleaned.

Made in various thicknesses, widths, and lengths. Let us quote you.

Central Iron & Steel Co.
Harrisburg, Penn.

Continuous Service Pays Profits

You are assured of uninterrupted power service at low cost when you specify Fuller & Johnson Engines on your power driven equipment.

For example, this is the way H. B. Agsten & Sons, a West Virginia Contractor feels about it:

“We now have four Fuller & Johnson Engines in use in concrete mixers—one that we purchased in 1919. These engines have seen constant, hard use—sometimes as much as 24 hours steady run on reinforced concrete buildings, and I must say, I have never owned or seen their equal in a lot of ways, such as easy starting, power, steady long runs, and long life.”

Ask us to send you descriptive Bulletin No. 430. It’s free.

THE FULLER & JOHNSON
Model AB

Two Cylinder Engines

are designed especially for industrial work and develop 5 to 8 B.H.P. — the power varying according to speed. Can be furnished either radiator or hopper cooled. Built either for taking power from main crank shaft or from separate low speed shaft with gear reductions approximately 2 to 1. Can be furnished for either left or right hand direction of rotation. Equipped with full pressure lubrication.

Bulletin AB500 gives complete information. Write for it. “Make good equipment better by using Fuller & Johnson engines.”

FULLER & JOHNSON MFG. CO.
Engine Specialists—Established 1840

Madison, Wis.

“GRAND RAPIDS” All-Steel Sash Pulleys
are LIGHTEST yet strongest. Two-thirds of your freight is saved, yet a BROKEN PULLEY IS UNKNOWN in our product—and these superior ALL-STEEL goods cost no more than the common pulleys made of cast iron.

The No. 10 Ball Bearing Pulley illustrated here is one of our best known styles. This Pulley has the automatic saw-tooth fastening feature which saves time and labor. No nails or screws required, yet the Pulley is held in place more securely than when fastened by any other method.

No. 10 Ball Bearing

Mail Coupon for FREE Sample

Lincoln-Schlueter Machinery Company
Incorporated
222 W. Illinois St.
Chicago, Ill.

Grand Rapids Hardware Co.
560 11th St.
Grand Rapids, Mich.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
ALUMINUM RULES

ACCURATE  DURABLE  LIGHT WEIGHT  RUST PROOF

These rules are of special hardness, therefore hold their shape well.
Distinct sunken black markings. Solid brass joints.
Can be furnished with Folding Hook, the feature that proved so popular on our Spring Joint Wood Rules.

CALL FOR LUFKIN RULES, BOXWOOD, SPRING JOINT, ALUMINUM, STEEL.

STOCKED BY SUPPLY HOUSES

Send for Catalog

SAGINAW, MICH.  THE LUFKIN RULE CO.

MAKE A BIGGER PROFIT

On The Roof

Wise, thrifty builders will appreciate the saving in putting on Walters and Coopers Metal Shingles. The Walters and Coopers Metal Shingles weigh less than wood or slate and takes lighter frame work to support it. Moreover, it is permanent. This roofing does not require skilled labor to put it on, carries a low rate of insurance and is storm, wind and fireproof. We manufacture a complete line of designs in Painted Tin, Genuine Re-dipped Galvanized Tin, Sheet Zinc and Copper.

Write for full size samples and prices

National Sheet Metal Roofing Co.
339-345 Grand St., Jersey City, N. J.

Thats My Level

Most Mechanics who are acquainted with the Empire Level are strong in their preference for it. It is accurate, reliable and easy to use.

The interchangeable vial case feature—found exclusively in Empire Levels—enables the Mechanic to repair broken glasses quickly, easily and inexpensively by merely inserting a new case.

See your hardware man or write

Empire Level Mfg. Co.
MILWAUKEE, WIS.

EMPIRE LEVELS

THIS WISSLER PATENTED LEVEL

AT A SPECIAL LOW PRICE FOR ONE MONTH ONLY

Write at once for CIRCULAR and FREE TRIAL—TERMS if desired.

A Transit and Level combined. Saves time and money. Simple and practical—always ready for use. It costs you nothing to try it. Full instructions free. Sent on approval to any established builder—money will be refunded if not entirely satisfactory.

Beware of imitations. We are the inventors and sole owners of this Patented Level. All infringements are liable to prosecution.

We also manufacture a complete line of Transits and Levels for Architects, Builders, Surveyors, Civil Engineers, etc., from $25.00 up.

WISSLER INSTRUMENT CO.
633 N. Broadway
ST. LOUIS, MO.
A sturdily constructed Mixer, Bronze Bushed drum turning on ball bearings, wheels equipped with roller bearings. A Thoro-Mix in less time.

The Result
A Daily Increase in Sales. You will want to consider this Mixer before buying your next one.

Send for Bulletin No. 305.

ORR & SEMBOWER INC.
Established 1885
50 Church St. 208 N. Clinton St.
New York City Chicago, Ill.

HOW MUCH WILL YOU GET FOR YOUR HOUSES?

Have you installed Showers?
Showers have a definite influence on rentals and selling price.

The Kenney Shower particularly, because it eliminates the overhead smoothing deluge and unsightly curtain.

Those two features alone give the Kenney Shower an outstanding preference among home buyers and renters.

Kenney Showers are moderately priced.

Write for Booklet B It tells why curtains are no longer necessary

The Kenney-Cutting Products Corp. 507 Fifth Ave. Dept. AM New York

INSTALL "IDEAL" BASEMENT WINDOWS

And make your basement light and airy. Builder satisfy your client, give him real protection as well as 100% value for his money at a cost less than wood.

"Ideal" windows have features that are quickly appreciated. They are attractive in design and harmonize with the appearance of your building. Positively weather proof. Sash are easily lifted from frame making them easy to wash and paint. No locks or hinges to buy. The sash members fit snugly against the frame leaving no chinks or cracks to admit wind or rain. They will not warp, swell or stick, swinging freely at all times.

Made and carried in stock in four standard sizes. Easily installed. Send us the coupon below and we will send you more information about how you can save your client's money.

Western Architectural Iron Company
215 West Schiller St. Chicago, Ill.

Western Architectural Iron Co.,
215 West Schiller Street,
Chicago, Ill.

Gentlemen:—Please send me full "Ideal" information.

Name__________________________
Street________________________
City___________________________ State________________________
THE ROOF USED TO LEAK, BUT IT DOESN'T LEAK ANY MORE

The Reason Why?

It has been covered with "BAYONNE" ROOF AND DECK CLOTH

Carpenters and builders who have used Bayonne know it is dependable and that it will do what we claim for it. It is guaranteed waterproof and will not crack, buckle or peel.

Write for Sample Book "R" and ask for one of our Repeat Memo Pads

JOHN BOYLE & CO., Inc.
Established 1860
112-114 Duane St. 1317-1319 Pine St.
NEW YORK St. LOUIS

The Overwhelming Popularity of The New Model Crescent Universal Wood Worker Nos. 101 to 112

is only another evidence that the high standard of Crescent quality is appreciated by well informed users of woodworking machinery.

Ask today for price list and circular giving complete description. Also ask for special circulars of band saws, jointers, planers, various woodworking machines, and anything else you may desire to make your present equipment more complete and adequate.

The Crescent Machine Co.
224 Main St., Leetonia, Ohio, U. S. A.

Five Complete Machines in One

SIMPLICITY WOODWORKER

Tilting Saw Table. 61° Jointer with Tilting Fence. Wonderful Thickness Planer. Boring Table with Hollow Chisel Mortiser and Speed Spindle adapted for many operations.


Write for prices and folder showing 20 entirely different and practical operations.

COMBINATION WOODWORKING MACHINE CO.
154 N. Desplaines St. Chicago, Ill.

The New $75,000,000 UNION STATION CHICAGO

Is Daylighted with

3-Way Sidewalk Lights
3-Way Floor Lights
3-Way Simplex Skylights
Steelhead Skylights

Proven satisfactory in the face of every test for this great structure where atmospheric conditions are difficult, these 3 Way Products should "make good" anywhere.

If interested, write for literature

American 3 Way-Luxfer Prism Co.
1307 S. 55th St. 358-368 Webster Ave.
Cicero, Ill. Long Island City, N. Y.
UTILIZES THE SPACE UNDER THE RANGE

Heat from oven cannot reach food-stuffs stored below—an exclusive feature.

A Strong Selling Point

in the modern apartment and house kitchen is Kab-Range, the combined range and kitchen cabinet. This space and labor saving unit is both beautiful and practical, assists planning and aids selling. Surprisingly reasonable prices on models for any requirement. Write us.

THE OHIO STATE STOVE & MFG. CO.
Main Office and Factory, Columbus, Ohio
42nd and Lexington Ave., New York City
666 Lake Shore Drive, Chicago

Write today for Catalog AB9 with prices.

KAB-RANGE

Flag Poles Improved by the “Poletube” FLAG POLE TRUCK

A new indestructible truck supplied with all our poles.

It cannot cut into Halyards or rust fast. Prevents flag fouling.

A 6½” galvanized body revolves on two sets of bronze ball bearings around cast steel king pin, capped with bronze hood. Double bronze 2½” sheaves on bronze roller bearings revolve on Tobin bronze pins. Gilt balls slip over 3½” brass jacketed spire, driven into king pin.

THE POLE & TUBE WORKS, INC.
NEWARK, NEW JERSEY

— STEEL POLES ONLY AND BETTER —
You Can Do It with a Boice and Bank the Balance!

In the shop or on the job, a Boice-Crane Bench Machine will do your work speedily and accurately at lower first cost and with greater operating economy. Every Circular Saw, Band Saw, Lathe, Joiner, Drill, etc., is sold on a positive money-back guarantee. Buy a Boice and bank the balance.

14" Band Saw
Table 12" x 14" (fits full size vise.) 3/4" stock. 1 1/2" wide. Highest quality bronze bushes throughout driven by any 1/3 or 1/2 H. P. motor. Attachments for all kinds of work. Tight and loose pulleys supplied for line shaft drive.

Junior Bench Saw
Speedy, accurate machine of all-tal metal construction. Table 10" x 12". 2 1/2" x 1/2" work. Speed 5.5"/min. driven by any 1/4 or 1/2 H. P. motor. Portable. Attaches to line shaft. Two elevators for grooving, sanding, motor. Tight and loose pulleys supplied for line shaft drive.

W. B. & J. E. Boice, Dept. A. B. 9-A
Toledo, Ohio
"World's Largest Makers of Small Bench Machines"

IS YOUR TOOL KIT COMPLETE?

"Workmanlike manner" presupposes strict attention to ACCURACY. To base your work on exact measurements, you should use a reliable Steel Tape. For accuracy, durability, and convenience of operation, none can surpass K & E MEASURING TAPES

Precise Durable Exclusive Patented Features

See Our Products Displayed at Your Dealer's

KEUFFEL & ESSER CO.
NEW YORK, 137 Fulton Street. CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL
General Office and Factories, HOBOKEN, N. J.
616-20 S. Dearborn St. 30-34 Second St. B17 Locust St. 6 Notre Dame St. W.

MEASURING TAPES

KEUFFEL & ESSER CO.
NEW YORK, 137 Fulton Street. CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL
General Office and Factories, HOBOKEN, N. J.
616-20 S. Dearborn St. 30-34 Second St. B17 Locust St. 6 Notre Dame St. W.

The KENNEDY UTILITY SAW

The handiest and most economical practical saw for all general utility and special purposes. Requires but small space and practically no expense for power.

Its many exclusive features make it invaluable for shops, factories, institutions, schools and homes. Being portable, it can be placed just where needed.

The Kennedy Utility Saw is used with economy and satisfaction by:

- Ship Yards
- Printers
- Contractors
- Newspapers
- Brush Makers
- Farmers
- Printers
- Contractors
- Newspapers
- Brush Makers
- Farmers

A NECESSITY IN THE SHIPPING DEPARTMENT OF EVERY BUSINESS

Ralph Kennedy
III N. 7th St.
Philadelphia

The Kennedy Utility Saw is used with economy and satisfaction by:

- Ship Yards
- Printers
- Contractors
- Newspapers
- Brush Makers
- Farmers
- Printers
- Contractors
- Newspapers
- Brush Makers
- Farmers

A NECESSITY IN THE SHIPPING DEPARTMENT OF EVERY BUSINESS
MORE CASH-LESS LABOR

CRESCENT Concrete Machinery is money making equipment, built for quantity production without breakdowns. Our prices to you mean real savings in first cost and the quality of our machines means bigger profits for years to come with less back breaking labor.

Write for Free Bulletin!
CRESCENT Sewer Pipe and Tile Molds, Catalog 11 and Bulletin 52.
Brick Machines, hand, foot and power. Catalog 31.
Bull-dog batch Mixers. Catalog 37.
CRESCENT Continuous Mixers. Catalog 10.
Raber and Lang Mfg. Co. 828 Mill St., Kendallville, Ind.

Write for Free Bulletin!
SMITH'S ADJUSTABLE COUNTERSINK Drop Forged Manufacturers of Wrenches, Nippers, Etc.
OTIS A. SMITH Manufacturing Company ROCKFALL CONNECTICUT

DUMBWAITERS AT LOW COST
"The Highwood" complete, ready to install, 60-lb. capacity. Height 30 feet. $44.50.
"The Sylvan," 75-lb. capacity. Equipped with automatic brake. $60.00.
Write for Catalog No. 5 for specifications and prices.
HIGHWOOD DUMBWAITER CO., CLOSTER, N. J.

MORRILL SAWSETS
Set Saws Just Right
"Saw Points" telling you "How to Joint, Set and File Saws" sent free upon request.
CHAS. MORRILL, INC., 98 Lafayette St., NEW YORK

STEEL-MAID

No. 123 Unit Kitchen
The above unit is one of our many styles of steel kitchenette arrangements. Steel-Maid quality and design is also available in Unit cabinets, over-the-sink cabinets, Table cabinets, Kitchen tables, Broom cabinets, Ironing board cabinets, etc. Send for our complete catalogue. Distributors wanted where we are not represented.
Continental Steel Products Co.
Formerly Cicero-Chicago Corrugating Company
CICERO, ILL. (Suburb of Chicago)

THE SIMPLEX

will do your work quickly and accurately

The Coupon Below
will bring you further information on how you can save money by using the Simplex Convertible Level on all your jobs. Send the coupon today for our catalog which will describe it, also our full line of drawing materials, instruments and Blue Print Papers. We have a large printing department. Plans reproduced by every known process. Catalogs sent Free.

AMERICAN BLUE PRINT PAPER CO.
445 Plymouth Court
CHICAGO, ILL.
FREE! The Guide Architects Use!
A simple request will bring you the Monarch "Manual of Casement Hardware"—valued so highly by architects, engineers and others interested in better building. Enables you to visualize the effect of casement hardware as though you had each device right in front of you. Gives detailed information regarding Monarch Control Lock, Monarch Automatic Casement Stay, Monarch Casement Check. Explains uses—lists finishes. Sent FREE. Write for it.

MONARCH METAL PRODUCTS CO.
4970 Penrose St. St. Louis, Mo.
MONARCH CASEMENT HARDWARE

Get Into the Floor Surfacing Business While the Field is Fresh
A CHANCE to have a business of your own and still retain your present position. Write today—Let us tell you how to get started in this Paying Business and how you can make good by following our method in working up your business. Free Trial. Part down—balance easy payments, which machine will earn for you. $40 to $50 a day easily earned with the AUTOMATIC—the result of 16 years mfg. experience. Will save the wages of 5 men and do work that will stand inspection against the light. SKF ball bearings, carefully protected from dust—Whitney Silent Chain—Roller Pressure Regulator—Force Feed Lubrication—Edge Roller Border Work Eliminated—Steel, not cast iron, construction—all dust taken up on forward operation with New Vacuum Nozzle—all working parts inclosed—2HP Alternating Motor on 12-inch machine.
The Little Automatic Surfacing Machine on table is a wonder for removing varnish from desk tops, counters, etc., or for all sorts of new work.

WAYVELL CHAPPELL & CO.
38-40 Jackson St., Dept. Z
WAUKEGAN, ILL.

"PULLMANIZE YOUR WINDOWS"
Over 6,000,000 Pullman Sash Balances in use, a fact that gives them an assured standing of practicability, reliability and durability

Pullman Sash Balances with the New Tape Hook
Sold on a ten year Guarantee
Free illustrated Catalogue. Full of modern window operating information on request

Pullman Mfg. Co.
338 South Ave.
Rochester, N. Y.

This new Tape Hook makes it possible to fasten or unfasten the tape from the sash while sash is in place. No fussing with the stop; no more or scratches; no re-finishing; no lost time.

Kornau Special Woodworker
Completely Equipped, Including Motor
$235.00
F. O. B. Cincinnati

BEFORE YOU BUY BE SURE AND CHECK OVER THESE SPECIFICATIONS

Tilting Saw Table, 20" wide. 36" long with grooves on each side of saw, swing type. Out-of-saw cuts all difficult angles by pressing on foot lever. Both handle free to hold stock. Jointer, Saw and Band Saw independently driven. No Belts to shift. Right hand construction (the natural way to work). Jointer has safety head with adjustable front and rear plates 24" long. Front Plate 8" wide for making shiplap. Motor operates from pull socket set in rear away from dust and shavings. Built in any combination for either motor, engine or countershaft drive. Let us tell you more about our Woodworking Machines.

THE KORNAU MACHINE CO.
Gulow and Vandalia Sta.
CINCINNATI, OHIO
Door Closer and Check

Interior parts made of steel drop forgings; extra long spindle bearings; simple spring adjustment; absolutely liquid tight; no special tools needed for dismantling; only true reversible check. Checks regularly furnished in gold bronze; silver bronze and ivory black, if desired.

AURORA, ILLINOIS, U.S.A.

Branches in important centers

See page 42 this issue

OUR GUARANTEE

Your Assurance for Success

A money-back guarantee accompanies every purchase of Miles Concrete Equipment. This guarantee goes the limit and assures your success in the concrete block construction line.

Miles Concrete Equipment for the concrete products plant consists of hand machines, automatic power machines and mixers. Men all over the country have made a success of this business.

We can supply you with anything in the concrete block construction line at a price that is consistent with the quality. Whether you buy now or later we want you to have a copy of our fully illustrated catalog.

Write for it today. We will send it FREE.

MILES MANUFACTURING CO.

Manufacturers for 27 Years

Department 30

JACKSON, MICH.
Safe Heat for Your Garage

Saves on Automobile Upkeep

—Saves the wear and tear on your car that comes from starting it cold.
—Saves the risk of make-shift heating methods.

A WASCO Ready-to-Set-Up, Coal-Burning Heater with radiators for one up to ten-car garages, is an economy.

Self-Regulating Heater and System All-Built

You put on only a little coal once a day. You DON'T touch the drafts. Our patented automatic regulator saves on coal and prevents costly freeze-ups. All cast-iron hot-water heater and radiators. You don't need a plumber; any handy man can set up. NOT connected to city water.

Write for New Low Prices

Write today for catalog. Give size of garage and ask us for a price to you this month. WASCO now made in all sizes at reduced prices.

W. A. SCHLEIT MFG. CO., INC.
449 Eastwood Station, Syracuse, N. Y.

Prepares now and drive in comfort all winter

WASCO
GARAGE HEATING SYSTEM
READY-TO-SET-UP

You Profit
In Two Ways!

To help make a new house sell quickly, put "White-Steel" Medicine Cabinets in the bathroom, kitchen and lavatory! Buyers accept their beauty, sanitary features and splendid quality as evidence of the completeness and fineness of the entire home. Result: a speedy turnover of your investment.

The other source of profit lies in the fact that "White-Steel" Cabinets add several times their cost to the selling price of any house.

Investigate! Our Complete Illustrated Catalog demonstrates why hundreds of builders are profiting thru "White Steel". Send for it NOW.

"WHITE-STEEL" SANITARY FURNITURE CO.
Dept. 27

GRAND RAPIDS, MICH.

Bayley-Springfield Steel Windows

Bayley-Springfield Steel Windows for use in basements are having a large acceptance by builders.

Bayley construction makes for strength and easy installation—designed for all types of buildings. They cost no more than wood windows, yet they give 50% more light—are fireproof—do not warp or stick—resist burglar entrance and add to the appearance of the building.

Ideal for the modern garage.

There's a good profit in Bayley-Springfield Steel Windows for basements—show them to your customers.

Write for full description and prices. Stocks carried at branches in principal cities.

THE WILLIAM BAYLEY COMPANY
128 North Street, Springfield, Ohio

44 years of service to builders and architects

When in New York
Live Right at the Right Price

The next time you visit New York, stop at the popular Hotel Martinique. A modern, fireproof building, in the very midst of the shopping, theatrical and business districts, the Hotel Martinique offers every convenience to the busy visitor.

From the Martinique, you can go direct to any place in the city without even stepping out-of-doors, via enclosed subway.

The rates at the Hotel Martinique are as low as $2.50 per day. Club breakfast 45c—delightful table d'hote dinner at $1.25. Special luncheons are also served at the most moderate prices possible.

Investigate the extraordinary service and economy of the Hotel Martinique, by stopping here on your next visit.

A. E. SINGLETON, Res. Mgr.

The Best without extravagance

Hotel Martinique
Affiliated with Hotel McAlpin
Broadway-32nd to 33rd Sts.
NEW YORK

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
**Protect Your Property**

**PATENTED**

NOVEMBER 24, 1922
MARCH 18, 1924
FEBRUARY 24, 1925
FEBRUARY 24, 1925

OTHER PATENTS APPLIED FOR

**Brand Your Equipment**

The handy combination blow torch can be utilized for branding your name or trade-mark on each piece of equipment. This prevents valuable property from being stolen and avoids unnecessary loss by mistaken ownership. Our complete booklet describes its many practical uses in detail.

Combination Blow Torch Mfg. Co.
2805 W. VAN BUREN STREET, CHICAGO, ILL.

"50,000 users"

**You Can Make Big Money by doing all kinds of floor work with an Electric Rotary Machine**

Many are making from $20.00 to $40.00 a day, SO CAN YOU. You can use this machine for practically any kind of floor work by simply putting on a different attachment.

On sanding jobs where an exceptionally high finish is desired the Electric Rotary Machine will put you way ahead of any competitor. Also used for refinishing old floors, scrubbing, waxing and polishing.

For surfacing and polishing machine, terrazzo, composition and similar floors, this machine has no equal. For polishing granite, marble and other stone, for twenty years.

A special flexible arm attachment is provided for overhead, wall hanging, side walls, stalls, etc.

Will operate right up to base-board and within two inches of extreme corners. Easy to handle, very economical, and practically foolproof.

Write for free catalog and full information.

**That Contractor always Knows!**

Because people said that about him, he had first choice of all the worth-while building jobs—and never worried about the prices he charged.

He had built his reputation by a simple plan—by knowing and recommending the leading firm in each important line of building materials and equipment.

KEWANEE was his choice for private systems of water supply, electric light and sewage disposal—for he knew Kewanee had 200 systems backed by a quarter century of experience. It will pay you, too, to know and recommend KEWANEE systems. Tear it out, fill in and mail the coupon below. NOW.

KEWANEE PRIVATE UTILITIES COMPANY
424 Franklin Street, Kewanee, Illinois

I am a ...........................................

Contractor [ ] Dealer [ ] Home Owner [ ]

Gentlemen: Please send complete information on the item(s) I have checked:

[ ] Kewanee "Bungalow Model" Water Supply System
[ ] Kewanee Sewage Disposal
[ ] Kewanee Line of Water Supply Systems
[ ] Kewanee Electric Lighting

Name ...........................................

Address ...........................................

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
KIMBALL BROS.

Elevators

Straight Line Drive Elevator Machinery
Push Button Elevators for Hospitals, Apartments, Hotels and Office Buildings
Passenger Elevators for every requirement
Light and Heavy Freight Elevators and Dumb Waiters
Side Walk and Ash Hoist Elevators for stores and schools
A special line of Light Electric and Hand Power Elevators for all purposes

Write for descriptive matter on the elevator you are interested in.

HERRICK—The Builders' Choice

Scientific principles of refrigeration are all built into the Herrick. Herrick construction insures economy, convenience, sanitation, and lifetime service.

The HERRICK outside icing feature saves work for both iceman and housewife. The Herrick may also be used with any mechanical refrigeration unit. These are but a few reasons why builders choose the Herrick.

Write for free blue prints showing dimensions, etc.

HERRICK REFRIGERATOR CO.
105 River Street Waterloo, Iowa
White’s Improved

NEW

“Duplex” Level

This newly patented combination Level-Transit met the instant approval of carpenters, millwrights and building tradesmen. No change from level to transit instantly, without lifting telescope from eye. No jolting when change is made. No clamps or screws to adjust. 10 diameter lens system.

“Duplex” Leveling System and return to “level” position.

Three Points bearing on Vertical Axis with spring tension giving constant and perfect contact of bearing surfaces. Adjustable Telescope Standards, cast integral.

Three point bearing on Horizontal Circle with center spring action—perfect contact of horizontal bearing surface. Protection Flange under circle preventing “gumming up” or gathering of dust.

Price

$35.00

from lever and it is back to “level” position to a hair.

White’s Improved Convertible Level

Used for years by leading builders, architects, contractors. Changed from level to transit in 10 seconds. Level bars and transit bars cast as one. No loose parts; simple and sturdy. 25 diameter lens system.

10 DAYS FREE TRIAL

Try a White, test it, compare it before you buy. Let us send you a new “Duplex” or a White’s Convertible to use on your next job. No obligation. Return if not satisfactory. Write for particulars.

DAVID WHITE CO., INC.

901 Chestnut St., Milwaukee, Wis.

Hess Cabinets and Mirrors are built to the highest standard of workmanship and finish.

While cheaper goods are made there is nothing equal to ours, at the prices we ask. Seekers for good cabinets are invited to ask us to demonstrate this, by submitting samples for comparison.

See Sweet’s Index, or write for illustrated booklet.

Hess Warming & Ventilating Co.

Makers of Hess Welded Steel Furnaces.

1220 S. Western Avenue, Chicago

When writing advertisers please mention The American Builder.
Guaranteed Saving of 20% on Framing Costs

Figure the cost of framing a house, then divide the total by 5—to make this saving (20%) on every house you build, buy a Jaeger Portable Woodworker

The JAEGER can be attached or taken off of any Ford in one minute. Use your Ford for more than transportation—put it to work on the job—don’t let it stand around doing nothing.

Write today for illustrated circular and complete details on this time saver and money maker.

Produced by DETROIT NUT COMPANY, Inc.
M. C. R. & Hubbard Ave. Detroit, Mich.

Ask our Advice without Obligation
Send in Your Plans

A GOOD warm air furnace like the Moncrief is the most efficient and most economical heating plant you can install.

But it must fit the house and be installed right.

Safeguard your interests and your client’s comfort by sending in the plans. Our Engineer will, without cost to you nor obligating you, draw complete specifications and quote on all materials used on the job.

The Henry Furnace & Foundry Co.
3471 E. 49th St., Cleveland, O.

Hodell Sash Chain for a PERMANENT—NOISELESS RUSTPROOF—FIREPROOF double hung sash suspension

It will neither break, kink nor stick

THE CHAIN PRODUCTS CO
Established 1886 CLEVELAND, OHIO

Construction
Hodell sash chain is formed from a cold drawn ribbon of polished steel. Double metal at the eye gives it an actual tensile strength of 10 to 15% more than old style sash chain size for size. Send for Hodell Specification. File A I A Classification 27-A1, also see Sweets.

Peerless Dome Dampers insure perfect fireplaces

You builders and contractors who want to satisfy your customers—here is the way to eliminate smoky fireplaces: A dome damper will prevent smoke and smoke discoloration, give control over the fire, save fuel, prevent soot falling into fireplace, prevent waste of heat, eliminate hazardous work in building fireplaces and insure a perfect draft at all times.

We carry a complete stock of dome dampers, grates, ash doors and traps, and all fireplace trimmings. Immediate shipments! Send for our big free catalog.

Hornet Mantel Co.
1145 Market St. - - St. Louis, Mo.
STAY RIGHT IN YOUR CAR and Open or Close Your Garage Door Electrically

A new home equipped with electric garage doors is immediately marked as of the latest in construction. Builder-Contractors find they can sell such homes readily, and home owners are delighted to operate their doors automatically at a cost of only 2 cents a month. Simple, safe, reliable. Requires no oiling. Easy to install. Will last a lifetime.

The finishing touch to a modern home. $125.00 f. o. b. Ithaca, N. Y.
Write for our illustrated booklet.

ELECTRIC DOOR CORPORATION
ITHACA NEW YORK

EDWARDS Metal Spanish Tile

It is wonderful what a remarkable transformation takes place when an Edwards Metal Roof is properly applied to a house—all of the charm of the Old Spanish Terra Cotta Roofing Tile is preserved, even to the color. The house takes on a new lease of life. It seems a better place to live in. It helps put the stamp of progressiveness and thrift on a community. An Edwards Metal Roof is a real commercial asset and will bring a better return in rent or sale.

Edward's Metal Roofings Made in various styles, to have for main part of roof the appearance of wood shingles, tile, slate or any other roofing effect, and none of these fine artistic effects will cost any more than a plain, commonplace roof.

All Edwards Metal Roofing is easy to lay—no big expense for skilled labor—storms—winds will not wrench it loose or make it a rattle-trap. It is lightning-proof and fire-proof—Reduces Insurance Rate.

When an Edwards Roof is laid, it is there to stay.

Send for our literature—it explains.
OLD EUROPEAN SLATE ROOFS

Exactly duplicate the old slate roofs of Europe with their rich colorings and strong natural texture.

Roof Suggestions on Request.

KNICKERBOCKER SLATE CORPN
E. J. Johnson, President
153 E. 38th St. New York

How Much Color?

The question of how much mortar color to use per 1,000 brick depends for answer upon

First: Width of mortar joint
Second: Intensity of color desired

When we recommend 100 pounds of Clinton Mortar Color per 1,000 brick, we're talking to those who want deep, intense color in 1/4 inch mortar joints. If less color intensity is desired, less color should be used.

And—Clinton uniformity pays!

Technical questions receive our prompt attention.

The Clinton Metallic Paint Company
154 Clinton Road Clinton, N. Y.

Clinton Mortar Colors

Union Combination 6" Jointer, Universal Saw and Boring Machines are making money for contractors in all sections of the country. They will do the same for you. It cross cuts, rips, dados, joints, rabbets, bores, etc., and is really portable.

It is accurate enough for the cabinet room. Hundreds are in use on interior finish as well as in construction work.

If you are interested in the best get our Bulletin.

GALLMEYER & LIVINGSTON CO.
296 Straight Avenue S. W. Grand Rapids, Mich

A HOUSEHOLD NECESSITY

Easily Installed
Fits Between Standard Studding

The Limaco Ironing Board Cabinet

Another convenience the modern housewife is going to expect in that new home she buys. Please your prospect by anticipating her wishes. Make your house more salable. Equip it with a Limaco ironing board cabinet. Ready assembled—made of heavy gauge steel sheets and assembled by welding process. Here we have a quality product that we are selling at quantity prices.

Write for Complete Data

LIMA SHEET METAL PRODUCTS CO.
LIMA, OHIO
SOMETHING UNUSUAL!
A Better Product——for Less Money

ACME SANITARY STEEL
MEDICINE CABINETS
Sanitary covered corners, embossed shelf brackets, white metal hinges, made of heavy gauge metal with high quality sandblasted and baked enamel finish.

Get our special low prices and complete information regarding types, sizes, holders and other attachments.

MORTON MANUFACTURING COMPANY
5133-43 West Lake Street
CHICAGO, ILLINOIS

MINERAL WOOL
supplies a most economical and indestructible fire-proof and vermin-proof guard

FOR YOUR NEW BUILDING
Mineral Wool is a perfect insulator—keeps out the winter cold and the summer heat. Being fibrous and inelastic it is also one of the best sound-proof materials obtainable.

For better construction we urge your investigation of Mineral Wool.

Write us today for convincing proof of what Mineral Wool has accomplished.

U. S. MINERAL WOOL CO.
280 Madison Avenue,
NEW YORK
Telephone Caledonia 0588

LOGAN-LONG
ROOFING
Logan-Long Hexagon Shingles make a permanent storm-proof roof because they are interlocking. This feature makes them easy to lay in perfect alignment. When finished, the roof forms a hexagonal design which adds greatly to the architectural beauty of any home.

The Logan-Long asphalt shingles and Roll Roofing are giving satisfactory service wherever used. Available in Red, Green, Blue-Black and Variegated Color Blends.

Approved by the National Board of Fire Underwriters.

Manufactured by
The LOGAN-LONG CO.
37 W. Van Buren Street
CHICAGO

OFFICERS

512 Dixie Terminal Bldg.
CINCINNATI, OHIO

125 Sylvan Road
ATLANTA, GA.

FREE

Over 100 Illustrations
On Contractor Accounting
To Contractors

How much money did you lose last year through poor accounting methods? Eliminate that loss! Walker's Standardized Forms for estimating, accounting, and costs are used by more than 5000 Progressive Contractors everywhere. They will help you estimate accurately and keep correct costs. Complete Bookkeeping Systems, Estimate Sheets, Order Blanks, Labor and Material Reports, etc., are all illustrated and fully described. This remarkable book is free to Contractors and Builders. Send for your Copy now while you have it on your mind.

Clip Coupon and Send for
This Free Book Today

WALKER PRACTICAL
ACCOUNTING SYSTEMS
USED BY MORE THAN 5000 CONTRACTORS

Frank R. Walker Co.,
536 E. Lake Shore Drive, Chicago, Ill.

Name........................................... Business........................................
Address........................................
Lanterns of Quality
Artistic Heavy Wrought Iron
For Indoors and Outdoors
Hand-Forged as in the Olden Times by Master-Craftsmen
Antique Reproductions
Moderate Prices
Booklet C on Request
Art Lantern Importing Co.
43-45 Wooster St. New York City

JUST TURN THE HANDLE
The MALLORY SHUTTER WORKER
Operated from inside by a simple turn of the handle.
WRITE US FOR INFORMATION
MALLORY MFG. CO.
175 Bloomfield Avenue
Flemington, New Jersey

STRUCTURAL SLATE
Structural Slate is Permanent, Sanitary, and, especially from the "dollars and cents angle," most Economical.
Write for interesting booklets on Slate.

SAMSON SPOT
SASH CORD
MADE of extra quality stock, carefully inspected, and guaranteed free from imperfections of braid or finish. No loaded centre to increase weight and decrease wear. SEND FOR CATALOG AND SAMPLES
SAMSON CORDAGE WORKS
BOSTON, MASS., U. S. A.

AMERICAN BUILDER
1827 Prairie Avenue, Chicago, Ill.

When writing advertisers please mention the American Builder
Portable Electric Rip Saws—Band Saws—Swing Saws

Save Time, Power and Money
Do away with hand work.
More satisfactory than any combination machine and all three cost but little more.
Guaranteed Satisfactory

Circulats on Request
HESTON & ANDERSON, 107 S. Sixth St., Fairfield, Iowa

Hoosier Glazed Building Tile
Especially recommended for foundation and basement walls. Clean, dry, sanitary, makes an ideal basement. HOOSIER GIANT BRIX for residence, garage, school and all industrial building. Smooth glazed or beautiful mat-face finish. Write for literature, samples and price list. Prompt delivery from stock our specialty.

Hoosier Building Tile & Silo Co.
Dept. B-5
Albany, Indiana

For CONCRETE MIXERS or Concrete Machinery of any kind—
Tilting Mixers, 3½-S and 5-S; Drum Mixers, 3½-S to 56-S; Towers, Chuting Equipment, etc., most builders prefer Ransome.

Write for Bulletins and Descriptive Matter.
RANSOME CONCRETE MACHINERY CO.
DUNELLEN, NEW JERSEY

Black Bros. Clamps
(Recognized standard of quality)
Made for every branch of woodworking and many other uses. Powerful, durable and convenient. Made by one of the largest and best equipped makers of glue room machinery, and sold by good hardware and machinery supply houses everywhere. Catalog 12 sent on request. Manufactured by
THE BLACK BROS. CO., Inc.
Mendota, Ill.
Mfrs.—Clamps, clamp carriers, veneer presses, glue room equipment, etc., etc.

C. G. Hussey & Co.
Pittsburgh, Penna.
Manufacturers of COPPER in Sheets Plates Rolls
Copper Nails Eaves Shoes Soldering
Copper Rivets Troughs Miltas Coppers
Conductor Pips Elbows Gaskets Etc.
Corrugated Copper Conductor Pipe
Member Copper and Brass Research Association.

VERDOLITE MARBLE Is Best
Use Verdolite Marble for Stucco Dash, Terrazzo Floors, Facing Concrete Block and Brick. Can be supplied in combination green and red. We also manufacture the famous “Anchor Brand” mortar colors.
Write for further information.
C. K. WILLIAMS & CO.
Easton, Pennsylvania

For CONCRETE MIXERS or Concrete Machinery of any kind—
Tilting Mixers, 3½-S and 5-S; Drum Mixers, 3½-S to 56-S; Towers, Chuting Equipment, etc., most builders prefer Ransome.

Write for Bulletins and Descriptive Matter.
RANSOME CONCRETE MACHINERY CO.
DUNELLEN, NEW JERSEY

Black Bros. Clamps
(Recognized standard of quality)
Made for every branch of woodworking and many other uses. Powerful, durable and convenient. Made by one of the largest and best equipped makers of glue room machinery, and sold by good hardware and machinery supply houses everywhere. Catalog 12 sent on request. Manufactured by
THE BLACK BROS. CO., Inc.
Mendota, Ill.
Mfrs.—Clamps, clamp carriers, veneer presses, glue room equipment, etc., etc.

C. G. Hussey & Co.
Pittsburgh, Penna.
Manufacturers of COPPER in Sheets Plates Rolls
Copper Nails Eaves Shoes Soldering
Copper Rivets Troughs Miltas Coppers
Conductor Pips Elbows Gaskets Etc.
Corrugated Copper Conductor Pipe
Member Copper and Brass Research Association.

VERDOLITE MARBLE Is Best
Use Verdolite Marble for Stucco Dash, Terrazzo Floors, Facing Concrete Block and Brick. Can be supplied in combination green and red. We also manufacture the famous “Anchor Brand” mortar colors.
Write for further information.
C. K. WILLIAMS & CO.
Easton, Pennsylvania
A PLAN BOOK
with over 300 excellent illustrations
100 Homes of All Types
costing $5,000 to $20,000
Many are prize winning designs. All have architectural merit. A book of immense value to the home-builder.
Price $2.00, postpaid
Robert L. Stevenson, Architect
520 Paddock Building
Boston, Mass.

PERMAROC
The Perfect Blackboard Surface
PERMAROC gives more dollar for dollar value than can be obtained in any other blackboard regardless of price. The surface is composed of ground slate and carbonium which provide the finest writing surface obtainable—a writing surface which meets every school room requirement—a blackboard surface which the teachers and pupils delight in using. PERMAROC is as permanent as slate, brick, concrete or any other building materials. It will outlast the life of any school building.

Write today for complete information, samples, etc.
E. W. A. ROWLES COMPANY
2247 South La Salle Street
CHICAGO, ILLINOIS

Sterling Window Balances
Give everlasting satisfaction
No Cords No Pulleys
No Weights No Troubles

Windows run on rollers. Easy to raise and lower, windows stay where stopped. Nothing to break, knot, jam or tie. Nothing to wear or get out of order. Nothing to worry about or renew ever. Windows may be removed instantly for cleaning or glazing.

Complete details FREE or Set of Four Balances $1.25 Postpaid.

Sterling Window Balance Co.
101 Blr St 
Rochester, N. Y.

When You Want
The Best Ask For
The Germantown
Master Builder—
for 66 years the standard of quality. If you cannot be supplied at your local dealer’s
send for the
Master Builder
catalog of Hammers and Hatchets.

GRIFFITH
MASTER
BUILDER
U.S.A.

S-saVer-$
Scaffold Bracket Fixtures
Easily and quickly made modern, light, safe equipment out of your wooden brackets. Most convenient to handle, move, or store. Only $1.25 each in dozen lots. Ask your dealers or write for literature and price list today.

Orville E. White
1000 Bauch Bldg.
Lansing, Michigan

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Save ½ on Plumbing and Heating Supplies

The largest mail order plumbing supply house in Philadelphia offers you a booklet brimful of bargains in high-grade, guaranteed equipment.

STANLEY PLUMBING SUPPLY CO., Inc.
938 SPRING GARDEN ST. PHILADELPHIA

Spargo Screen Cloth
Made right — Looks right

Improve the appearance and salability of the houses you are building by using

SPARGO COPPER and BRONZE SCREEN CLOTH

Our copper screen cloth is 99.8% pure copper, rustless, indestructible and perfectly woven.

Our bronze screen cloth is an ideal alloy that assures perfectly woven screening and durability.

Ask for Spargo Screen Cloth at your nearest hardware or building material dealer, or write us.

SPARGO WIRE CO.
Rome, N. Y.

UNITED CASEMENT ADJUSTERS

Our sole product since 1913
Just turn the tube to set the proper resistance, then forget them.
They give security and comfort and are indestructible.

5 SIZES
Write for Information
United Specialties Manuf. Co.
936 Ave. and 100th St.
RICHARD HILL, N. Y.

"Old Fashioned" Quality
Real Carpenters Want Real Tools

Any dealer will tell you Whites’ are the best, but high priced. Do you want the best at only a little more?
Ask your dealer.

THE L. & I. J. WHITE CO.
10 Columbia St. Buffalo, N. Y.

Hennen’s Elastic Calking Paste

Seals ALL joints AIR, DUST and water-proof, saves FUEL, prevents disfigurement of DECORATING, decay of SILLS and deterioration of MASONRY under windows.

Write for Information and Prices
WEATHERPROOF CALKING CO.
758 Washington Ave., No. MINNEAPOLIS, MINN.

IRON RAILINGS FOR EVERY PURPOSE

Plain and ornamental iron fence—extensive gates, wire and iron window guards, folding gates, gratings, cellar doors, etc.

Catalog on request—estimates cheerfully given—orders filled promptly.

CINCINNATI IRON FENCE CO., Inc.
3331 Spring Grove Ave., CINCINNATI, OHIO

WE SEND DERRICKS ON TRIAL TO RELIABLE CONTRACTORS
OUR MOTTO IS SATISFACTION OR DERRICK RETURNED

WE SEND DERRICKS ON TRIAL TO RELIABLE CONTRACTORS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
Lignine (Wood) Carvings—Unbreakable
Do not CHIP, CHECK, CRACK nor SHRINK. Capitals, Pilasters, Drape, Scroll, Heads, Period Designs—Adam, Hepplewhite, Chippendale Queen Anne, Modern, English and Italian Renaissance. SAVE YOU BIG MONEY. New Catalog No. 9 and sample FREE.

ORNAMENTAL PRODUCTS CO.
14th Street at Lafayette Ave. Detroit, Mich., U.S.A.

The HELM
Improved Simplex Mixer
will get those rush jobs of yours done on time. Because it's a specialized contractors mixer of FULL BATCH capacity and gives faultless service day after day. Every batch is a perfect mix. Equipment includes direct chain drive, double mixer blades, full batch hopper, Novo engine, standard tread wheels and a 9" x 24" channel iron frame. We also manufacture the well known Helm Press of 15,000 concrete brick or 1,500 concrete block daily capacity.

Write for Our Catalog
HELM BRICK MACHINE CO.
179 Mitchell St.
Cadillac, Mich.

The Phoenix Phone Cabinet
For hotels, apartment houses, homes and offices.
A decorative wall niche for the telephone.
Practical and most convenient.
Can be readily installed in old or new work in a wall or partition from 3 to 5 inches or over in thickness. It can be supplied in designs to meet your needs. Lower part conceals the bell box.
Prices on request.
Phoenix Cabinet Co., Inc.
419 Union Bldg., Syracuse, N. Y.

FORSTNER BITS
BRACE & MACHINE
THE FINEST Tool Manufactured for important wood work.
Specially adapted for Hardwood operations; indispensable to the High Class Carpenter and for Cabinet and Pattern Work.
Manufactured by
THE PROGRESSIVE MFG. CO.
TORRINGTON, CONN.

A Mortise a Minute
The New Electric Motor Machine cuts any size mortise from round hole up to 6 inches. Light—Simple—Efficient
Do your work with power instead of by hand. We also manufacture a Hand Operated Machine
Full description and prices on request.
PERFECTION MORTISER CO.
141 N. Water St., COLUMBUS, OHIO

THE GREAT BELL No. 42
NOTICE THIS
New Baffle Plate Radiator
Introduced on this furnace means a non-contaminant radiator—the greatest improvement made in any furnace for twenty years. It eliminates the possibility of a clogged or choked radiator. No cleaning out is ever required.
For size and weight this furnace has no equal on the market today. We make pattern in two sizes. Our line of pipe and pipeless furnaces is most complete.
Exceptional agency proposition for live-wire representatives in unoccupied territory.
Write at once
The Bell Furnace & Mfg. Co.
Northville, Michigan

INDISPENSABLE TO BUILDERS AND HOME OWNERS
A ventilator built into the wall by the brick mason for ventilating kitchens and any room in the house. Made with a round flue to connect with kitchen range hood or with a square flue with register face.
THE RIESNER VENTILATING BRICK
is made of cast iron, the size of a standard brick with a flueved face, weatherproof in the top, and a round flue for use with galvanized iron flue—WEATHERPROOF, DURABLE, ECONOMICAL.

Dealers should carry this ventilating brick in stock. We have a liberal proposition.
BENJAMIN RIESNER, 260 E. 78th St., NEW YORK CITY

C. H. & E.
Saw Rigs Elevators
Pumps Mortar Mixers
Hoists Engines

Write for our new catalog
C. H. & E. Manufacturing Co.
322 Mineral Street
Milwaukee, Wis.

Patent Applied For

INDISPENSABLE TO BUILDERS AND HOME OWNERS
ONE MAN CAN RUN IT

The Little Whirlwind Concrete Mixer

FROM FACTORY TO YOU—SAVE 46%

Only real practical small mixer producing same perfect work as most expensive big machine. Complete with hand and electric drive. A winner for the contractor or concrete worker. All steel and iron. Just like the big $100 mixer, only simpler. Just like the big $50 mixer, only cheaper. Just like the big $10 mixer, only better. Does your work in one-fifth time.

The Whirlwind Way Makes Mixing Pay

Saves its cost on one Capacity about 8 cubic ft. Mixes a batch in 30 sec. Does PERFECT work, wet or dry. Discharges direct to forms, wheels and back. Satisfaction IN 1 BACK. Reference: Any hardware, bank or store. Write for circular or order direct from this adv. and avoid delays.

In Business For Yourself with the

"Ideal" Floor Sander

Investigate Our Easy Payment Plan. Start in business for yourself and double your income. Floor surfacing offers a great opportunity. Our easy payment plan gives you the privilege of paying for an "Ideal" out of your profits. Five days' free trial—No obligation. Write us today.

BOETTCHER COMPANY
440 N. Peoria St. Chicago, Ill.

BARNES Electric Bench Scroll Saw

Portable:—
take it to the job!
Weight 80 lbs.
Will saw 2 inch Pine at 2 1/2 feet per minute—2 inch Maple at 1 1/2 feet per minute
Made by W. F. & John Barnes Co.
74 Ruby Street Rockford, Ill.

Look! Something You Have Been Waiting For!

Electric Floor Sanding Machine that is practical for the small apartment house work. Lightest machine on the market, total weight 140 lbs. Only machine that can be operated from the ordinary 3 amp. motor. Guaranteed to take up all scratches and blemishes—everlasting equipment that can be bought in the market today. "Quick Sander" or Wagner 60 degree fixture, Morse time chain drive, R.F. ball bearings and 30 ft. Margin rubber covered cable. Made by CAMPBELL MACHINE CO., INC., 39 Hayward St., P.O. Atlantic, Mass.

Carpenters and Contractors

Here's a Remarkable Machine

THE RACINE DUPLUX BANDSAW is not only the best machine built for wood cutting, it becomes a metal-cutting machine simply by shifting one lever. Cuts iron, brass, hard-steel, everything—quickly, accurately, economically.

Built Just Like Finest Machine Tools

Real equipment for superior to ordinary. Has variable speeds. Bull bearing mounted wheels. Can be operated from electric light socket anywhere. Ideal for contractors. Write for full descriptive bulletin.

Racine Tool & Machine Co., 15th St., Racine, Wisconsin Standard the World Over

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
No. 2 Hand Mitre Jack

This is the most useful machine ever used for mitering mouldings.
It cuts a perfect miter; no guess work.
Has adjustable jib to compensate for wear.
Cuts up to 2 1/2 inch.

"Equipped with Automatic Spring Back Handle."

LOU MARKWELL CO.,
174 FRANKLIN ST., NEW YORK
75 STEUART ST., SAN FRANCISCO

Get SHELDON'S Low Prices

A Sheldon mixer saves you money 2 ways—costs less, and is more easily transported and operated than a large mixer.
Mixes 3 1/2 cu. ft. per batch. Simply designed so there's practically no upkeep cost. Discharges into wheelbarrow. Shoveling height only 42 in.
All steel frame gives strength, compactness and light weight. New rubber tire trailer type is popular with contractors. Furnished on skids, if preferred.

WRITE TODAY for full details on complete line of 19 outfits, priced from $14.20 to $197.50. Send NOW!

The Sheldon Mfg. Co., Inc.
Box 1005, Nebraska, Neb.
Unexcelled for combination warm air and hot water heating.

CHAMPION
Powerful Heaters for any style of Hot Air Furnace. Auxiliary Boilers are positive fuel economizers. They are placed between fire and flue and absorb that heat that might otherwise get away before it has done its work. Rooms which heretofore could not be heated are very easily reached by Champion Auxiliary Boilers. Our system is better explained in a booklet we have prepared. It is yours for the asking.

May your boilers be Champions!

MELBYE BROS. COMPANY
1210 Webster Ave.
Chicago, Illinois

THE QUICKEST
EVER AND AS SAFE
AS THE EARTH UNDER
YOUR FEET.

MANUFACTURED BY
AJAX BUILDING BRACKET CO.
1551 Rydal Mount Road, Cleveland Heights, Ohio

Improved Sewage Disposal
City Comforts at Low Cost

Quick and clean disposal of household sewage can be attained with the Kaustine Super-Septic Tank. It has no moving parts, practically no attention. Operation without upset. Easily installed, causes no upset of other. Meets sanitation standards of Health Experts.

Kaustine Super-Septic Tank Co., Inc., Buffalo, N. Y.
Canadian Office & Factory—Dundas, Ont.

Kaustine Super-Septic Tanks
Sold and Installed by Plumbers Everywhere

PLANS for HOMES

Last word in builders' aids. Practical, up-to-date plan-books containing popular California all-climate styles, with illustrations and actual dollar-saving suggestions.

“All-American Homes” 30 Houses—7 to 10 Rooms $1.

“The New Colonials” 50 Houses—6 to 10 Rooms $1.

“South-West Stucco Homes” 75 Bungalows and Duplexes $1.

“West Coast Bungalows” 50 Houses—6 and 7 Rooms $1.

“Little Bungalows” 75 Houses—3, 4 and 5 Rooms $1.

Books and Blueprints sold with Money-Back Guarantee

E. W. STILLWELL & CO., Architects, 209 Calif. Bldg., Los Angeles

THE HOMER COAL CHUTE
A New Idea with a Practical
Door Lock
Homer Fireplace Dome
Dampers
Homer Chimney Cleanout
Doors
Homer Fireplace Ash Traps
HOMER FIREPLACE BASKET GRATES
Homer Andrews
Homer Fireplace Spark Guards
Homer Fireplace Tool Sets
Our line is complete, quality guaranteed

HOMER FURNACE CO.
COLDWATER, MICHIGAN

LA PLANT-CHOATE HOUSE-MOVING TRUCKS

Hundreds of Moving Contractors are making big money with LaPlant-Choate House Moving Equipment. LaPlant-Choate Trucks are a great improvement over the old wooden roller method. A building mounted on these trucks moves safely and quickly, under control. The oscillating fixture embodied in these trucks proves very practical and satisfying to the customer. It will pay you to write for Catalog B.

LA PLANT-CHOATE MFG. CO.
3115 First Avenue
Cedar Rapids, lowa

BE THE BOSS
DON'T ENVY HIM HIS HIGHER POWER AND PAY

"I have more than doubled my income during the past year," writes one of our students. Our Courses develop workers and mechanics into foremen, and foremen into managers. Applicable to ANY line of business or industry. A practical work-a-day form of teaching. Previous education not essential. Enrollments accepted only under money-back guarantee.

Clip this and mail it today to

TYREAN INSTITUTE
PALMER, MASS.

Tell me about your GUARANTEED Salary-Raising Courses.

Name...........................................

Address...........................................

Special Offer: $2.50 for any 3 books, $4.00 for all 5 books.

Clip this and mail it today to

TYREAN INSTITUTE
PALMER, MASS.

BE THE BOSS
DON'T ENVY HIM HIS HIGHER POWER AND PAY

"I have more than doubled my income during the past year," writes one of our students. Our Courses develop workers and mechanics into foremen, and foremen into managers. Applicable to ANY line of business or industry. A practical work-a-day form of teaching. Previous education not essential. Enrollments accepted only under money-back guarantee.
Investigate The Superior-Super!

It is built to handle all woodworking operations on the job or in the shop. Cross Cutting, Ripping, Dadoing, Mortising, Jointing, Tenoning, Boring, Sanding. It is easily transported from job to job. Can be used on any job anywhere, for it is gasoline engine driven. The Superior-Super Woodworker is the product of an old well established manufacturer of woodworking machines.

The Low Cost Will Surprise You

Write today for illustrated Catalogue

Jones Superior Machine, 1260 W. North Ave., Chicago

Steel Sidewalk Forms

Why buy lumber and pay carpenters' wages year after year, when Heltzel Steel Sidewalk Forms will last you 10, 12 or 15 years, and any unskilled laborer can set them? They save time, save money, and give a better job.

Write for Particulars

THE HELTZEL STEEL FORM & IRON CO.
WARREN, OHIO

It costs less to sand with the BARKER SANDER than by hand or large machine

Let us prove it

Metal retainer catches 99% of dust

Patented
June 2, 1925

R. L. BARKER & CO.
642 W. Washington Blvd., CHICAGO

We make two kinds of Galvanized Shingles as well as painted tin shingles

Cortright Galvanized Shingles come either Hand Dipped or stamped from sheets already galvanized. Cortright Painted Shingles are stamped from prime roofing tin and come painted red or green, as desired.

Both galvanized and painted Shingles are made in four patterns.

Send for literature

Cortright Metal Roofing Company
50 N. 23rd St., Philadelphia
528 S. Clark St., Chicago

NICHOLLS MFG. CO., Ottumwa, Iowa

 Builders Make Your Homes More Saleable

—More desirable because of being strictly modern.

Our advertising is telling more than half of you prospective home buyers about the San Equip line of sewage disposal equipment.

Write for Free Plan Sheets

San Equip Septic Tanks are rust-proof—corroderd, iron tanks—correct design—water-tight—unbreakable, ready to connect.

We ship for free inspection from the warehouse nearest you.

CHEMICAL TOILET CORP.
70-80 Free St., Syracuse, N. Y.
An Atlas Agency Is Profitable
Get in line for the fall season.
Earn more money installing Atlas Weatherstrips.
*Write today for exclusive territory*
Atlas Weatherstrip Co.
3943 West 16th Street
Chicago, Ill.

The Marvel Thermostat
When installing a thermostat in your new home, be satisfied with none but the best. The MARVEL is accurate, dependable and completely automatic. Unreservedly guaranteed.
*Write for booklet "N" and prices.*
American Thermostat Co.
226 Jelliiff Avenue
NEWARK (Est. 1909) NEW JERSEY

An Outstanding Value
The New
STEEL IRONING BOARD CABINET
Fits into any 2" tile or Pyrobar wall, or any 2" x 3" or 2" x 4" stud wall.
Saves from $1 to $5 over the cost of an ordinary wooden cabinet, installed, trimmed and finished. Reaches building complete with six screws, no trimming required.
Heavy furniture steel, nickelplated hinges and latches. Stationary sliding, dustproof doors. Durable baked finish in sparkling white, gray, stained walnut, or stained mahogany. Write for prices.
*MAJESTIC STEEL CABINET CO.*
4211 Sella Palena Ave., Chicago
"Household Steel Cabinet Headquarters"

The Marvel Thermostat
When installing a thermostat in your new home, be satisfied with none but the best. The MARVEL is accurate, dependable and completely automatic. Unreservedly guaranteed.
*Write for booklet "N" and prices.*
American Thermostat Co.
226 Jelliiff Avenue
NEWARK (Est. 1909) NEW JERSEY

Plasterite
A CHEMICALLY TREATED FIBRE
117 TIMES STRONGER THAN HAIR
40% CHEAPER
Assures
"BETTER PLASTERING"
*Write for Information*
THE PLASTERITE CO.
170 SUMMER ST.,
BOSTON, MASS.

Malia
Metal Weatherstrips
Rustproof
Fly Screens
PORCH ENCLOSURES
WRITE FOR PRICES
232 W. Mentor Street
Agents wanted throughout the country

Factory-Built Wood Bowstring Trusses
Most Economical Truss For GARAGES, HALLS, SHOPS
Shipped knock-down with each piece marked, easy to handle. No skill required to assemble. No extras to buy.

Ask for Agency Offer and Catalog
All Kinds of Heating—Hot Water—Steam—Hot Air—Pipeless—Pipe—Sewage Disposal—Water Supply—Plumbing—Low Prices.

Andrews Heating Co.
MINNEAPOLIS, MINN.
USE FAY ELECTRIC FLOOR MACHINE
Sanding — Waxing — Polishing
Dust evenly and quickly at 1/10 the time it takes by hand. Costs less per hour than any light sawdust. Weight 55 lbs.
Write for descriptive literature.
THE FAY COMPANY 514-16 W. 57th St., New York, N.Y.

Sell "BARNETT SYSTEM"
LIGHTNING RODS
Over 99%, pure copper
Protection Guaranteed to life and property against Lightning or money refunded
Every property owner a prospect. Write today for Agent’s wholesale prices, free cable samples and lightning booklet.
JOS. L. A. BARNETT & CO., Cedar Rapids, Iowa

The Most Economical Sash Holder
It Is Automatic
No Sash weights, cords, pulleys or balances necessary.
Send For Trial Set $1.25 prepaid.
HARDWARE SALES CO., 39 Church St., Room 446E, NEW YORK CITY

LIVING-STONE
The Perfect Bond
for Concrete
Contains no soil. Therefore cannot injure concrete or soil. Forms a bond stronger than the concrete itself.
Catalog on request.
LIVING-STONE CO., 1 E. Lee Street, Baltimore, Md.

“LIGHTING FIXTURES” READY TO HANG
Direct from the manufacturer. Completely wired including glassware. Send for new Catalogue No. 27 (just reduced prices).
Special proposition to dealers.
ERIE FIXTURE SUPPLY CO. Station B
ERIE, PA.

THE SLATINGTON-BANGOR SLATE SYNDICATE, Inc.
SLATINGTON, PENNA.
Miners and Shippers of
Black Roofing Slate
Natural Blackboard
Structural Slate
Electrical Slate
and Slate Products
Write us for prices

Hauser No. 26 Adjustable Screen and Storm Sash Hangers—will take care of any thickness of screen or casing. It will hold the frame tight against stops and will hang on top or swing on the side.
Recommended by many Architects and Builders.
Prices, Free Samples and Catalogues out on request.
MARTIN HAUSER MFG. CO. 413 Prescott Street Toledo, Ohio
ABC Weatherstrips are economical and durable. Are installed without removing the sash. Any carpenter can install them. Endorsed by leading architects, owners and builders. Send us the measurements, and we will furnish an estimate free.

HOFFBAUER COMPANY, Inc.
Telephone: Murray Hill 5374
101 Park Avenue, New York City

Mailo Box

The Modern Built-in
Mail Box

Write for full particulars, illustrated booklet and prices.

PENN-GREG
MFG. CO.
600 University Avenue
ST. PAUL, MINN.

BUILT-IN WOODWORK

Adds the touch of Refinement. Beauty that increases renting and selling values.

SEE OUR OFFERS

Bookcase Colonades—Sideboards, Medicine Cabinets, etc., are of Distinctive Design and give living comfort to any home.

BERTElsen ADJUSTABLE GRILLE CO.
2119 South Troy Street, CHICAGO

14 BURGLAR INSURANCE COS.

Recommend and Endorse
Hoffmann's Burglar Proof—Triplex Lock

LOCKS EVERY DOOR, SIDE, TOP AND BOTTOM. IF BURGLARS WANT TO ENTER MUST BREAK DOOR IN PIECES.

Tenants are invariably dissatisfied with locks provided, and detach such locks, replacing it by one of their own selection: by the successive application of different locks and boring holes for them, the door is weakened at the point where it should be the strongest. Hoffmann Triplex Lock avoids all difficulties: no latches, padlocks or bolts required. Can be used either as a rim lock or a mortise lock. Used on private house doors, private hall doors, swinging doors, office doors, garage doors, etc. Also locks double doors burglar proof.

Write for catalogue

HOFFMANN TRIPLEX LOCK CO.
89 Centre Street, N. Y. C.

Garage Necessities

Garage Door Bolt
Specially designed for garages, factories, warehouses and fire doors. Locks and unlocks top and bottom bolt with one turn of handle.

Garage Door Holder
Prevents accidents, broken head lights and fenders. Operated by hand or foot.

For prices and further information write today to

Phenix Mfg. Co.
No. 50 Holder No. 52
22 Center Street
Milwaukee, Wis.

MEASURE HARD-TO-GET-AT PLACES

For accurate, quick inside or outside measurements this rule is indispensable to carpenters, mechanics, engineers, architects, householders, etc. NIcked easily—no annoying folding. Any length, 2 to 5 feet.

MASTER RULE MFG. CO. 821 East 136th Street, New York City

Your Reputation As a Builder!

is enhanced by the sterling performance of ROUND OAK Heating Systems, stoves, gas ranges, etc. Our informative literature should be in the hands of every builder who wants to make the most of his investment for building homes for prospective and contracted purchases.

The Beckwith Company, Dowagiac, Mich.
FOREIGN TRADE—Concrete block building machines, steel molds for concrete burial vaults, etc. Catalog free. CONCRETE MACHINE CO., 5 North Main St., St. Louis, Mo.

TIME SHEETS, JOB TICKETS, ESTIMATING BLANKS, ILLUSTRATED STATIONERY, etc., for carpenters and builders. Large and small lots; reasonable. Prompt service. Samples and prices. L. FINE & SONS CO., Inc., Elm Avenue, Laurel Springs, N. J.

CARPENTERS, CONTRACTORS, BUILDERS, ETC.—Send for our Free Booklet, "How to Read Blue Prints." Tells how to make most money in the building trade. Every builder should have this information. Write today. Address: Dept. 2246, CHICAGO TECH., 118 East 26th St., Chicago, Ill.


BUILDERS—Here is a chance to learn how to draw plans for your buildings. Your spare time at home is enough. We furnish tools. Send for our "Free Trial Lesson in Drafting." Address: Dept. 2600, CHI. TECH., 118 East 26th St., Chicago, Ill.

HOME MECHANICS, ATTENTION!—We specialize in unusual cabinet hardware and mechanical devices for home furniture construction, copper shelf trimming, transfer designs, knocked down chests, tea wagon wheels, acrobats, wood and metal lamp shades, bridge lamp arms and all electrical fixtures, cane and porcelain table tops, upholstery supplies, finishing materials, office chair and power writer desks, casters, steel rails for wood beds, socks, hinges, catches, drawers, costumer hooks, smoking stand trimmings, etc. Most complete line of any country this class material. Send 10 cents stamps for Tenth Annual Catalog. "Hard- to-get" materials. THRUSTON MANUAL, TRAINING SUPPLY COMPANY, Anoka, Minn.

WANTED—In town of 10,000 Western Penna., young man with broad experience building work and acquainted with planing mill and machinery, to act as helper. Address in own handwriting and accompany with photo of self. State salary expected to start. Address WILSON & GREENE LUMBER CO., Syracuse, N. Y.

WANTED—Assistant Plan Service man not over 35 years of age with house carpentry experience, with ability to draw plans, detail, estimate and supervise the building of small house jobs. Married man with small family preferred. Good opening to right party. State age, experience, reference, salary wanted in first letter. Address WILSON & GREENE LUMBER CO., Syracuse, N. Y.

FOR SALE—Part or full interest in retail lumber yard and planing mill. Profitable business. Owner desires a change. Write T. E. OSBORNE, Box 108, Colusa, Cal.


HELP and Situations Wanted

FOR SALE—Concrete building block machines, steel molds for concrete burial vaults, etc. Catalog free. CONCRETE MACHINE CO., 5 North Main St., St. Louis, Mo.

TIME SHEETS, JOB TICKETS, ESTIMATING BLANKS, ILLUSTRATED STATIONERY, etc., for carpenters and builders. Large and small lots; reasonable. Prompt service. Samples and prices. L. FINE & SONS CO., Inc., Elm Avenue, Laurel Springs, N. J.

CARPENTERS, CONTRACTORS, BUILDERS, ETC.—Send for our Free Booklet, "How to Read Blue Prints." Tells how to make most money in the building trade. Every builder should have this information. Write today. Address: Dept. 2246, CHICAGO TECH., 118 East 26th St., Chicago, Ill.


BUILDERS—Here is a chance to learn how to draw plans for your buildings. Your spare time at home is enough. We furnish tools. Send for our "Free Trial Lesson in Drafting." Address: Dept. 2600, CHI. TECH., 118 East 26th St., Chicago, Ill.

HOME MECHANICS, ATTENTION!—We specialize in unusual cabinet hardware and mechanical devices for home furniture construction, copper shelf trimming, transfer designs, knocked down chests, tea wagon wheels, acrobats, wood and metal lamp shades, bridge lamp arms and all electrical fixtures, cane and porcelain table tops, upholstery supplies, finishing materials, office chair and power writer desks, casters, steel rails for wood beds, socks, hinges, catches, drawers, costumer hooks, smoking stand trimmings, etc. Most complete line of any country this class material. Send 10 cents stamps for Tenth Annual Catalog. "Hard- to-get" materials. THRUSTON MANUAL, TRAINING SUPPLY COMPANY, Anoka, Minn.

WANTED—In town of 10,000 Western Penna., young man with broad experience building work and acquainted with planing mill and machinery, to act as helper. Address in own handwriting and accompany with photo of self. State salary expected to start. Address WILSON & GREENE LUMBER CO., Syracuse, N. Y.

WANTED—Assistant Plan Service man not over 35 years of age with house carpentry experience, with ability to draw plans, detail, estimate and supervise the building of small house jobs. Married man with small family preferred. Good opening to right party. State age, experience, reference, salary wanted in first letter. Address WILSON & GREENE LUMBER CO., Syracuse, N. Y.

FOR SALE—Part or full interest in retail lumber yard and planing mill. Profitable business. Owner desires a change. Write T. E. OSBORNE, Box 108, Colusa, Cal.


HELP and Situations Wanted

Spanish Homes of California

Just off the Press! This collection of Southern California homes includes 50 photographs and 50 sketches and floor plans with exteriors and interiors selected by leading architects as the best in Spanish treatment. For Architects, Builders, and Home Owners Ask your news dealer or mail check or money order for $1.00 to THE ROY HILTON CO. Dept. A, 800 Kress Bldg., Long Beach, Calif., for price and special copies.


Faster Shingling—More Money
Carpenters and Builders! That's what it means when you use the SAYRE Shingling Hatchet
With positive gauge—Get one today! Gauge is positive—cannot slip, clamp on with ease—it readily changes. Uncaulked for fast shingling; ask for No. 144 with oval head, 169 points, milled. Price $3.00 postpaid.

L. A. Sayre Company, 334 Mulberry St., Newark, N. J.

Spanish Homes of California

Just off the Press! This collection of Southern California homes includes 50 photographs and 50 sketches and floor plans with exteriors and interiors selected by leading architects as the best in Spanish treatment. For Architects, Builders, and Home Owners Ask your news dealer or mail check or money order for $1.00 to THE ROY HILTON CO. Dept. A, 800 Kress Bldg., Long Beach, Calif., for price and special copies.

Make Your Basements Water Tight by using Bitu-Mortar Waterproofing Compound, Liquid, for Waterproofing cement coatings. Inexpensive and everlasting. Write for our catalog.

The Bitu-Mortar Waterproofing Co., Inc.
Engineers and Contractors
250 Madison Ave., New York, N. Y.

AMERICAN BUILDER
The Open Door to a Great Market
Covers the Entire Building Industry

Does the Impossible

For new who would have faster, more complete, more accurate, more automatic, more efficient, more practical results, wholesale the Mail Surveyed and added in addition make a string, straight, steady, projecting and water drained edge neatly finished. Always use Miller Drip Edge. Miller Drip Edge sold in 38 states for dealers. Your dealer supplies you if not stock write us giving his name.

MILLER & GLEASON, Div. D., OLEAN, N. Y.
"LOXO"

A Two Service Instrument

Instantaneous change from levels to vertical angles can be made with this instrument without lifting out of the wyes.

A simple, well made instrument. None other just like it. Low in price—light in weight.

Write for folder giving complete information.

B. L. MAKEPEACE, INC.

Manufacturers

387 Washington St.

Boston, Mass

THE JAMES SWAN COMPANY

28 Warren Street

NEW YORK

Awarded Medal of Honor on Mechanics' Tools at Panama-Pacific Exposition

Manufacturers of all kinds of

BITS, CHISELS, DRAW KNIVES, GOUGES, GIMLETS, AUGERS, NAIL SETS, SCREW DRIVERS, COUNTER-SINKS, BORING MACHINES and EXPANSIVE BITS

Buy Only Carpenters' Tools Bearing the Trade Mark which Stands for Quality

INVISIBOWL

CONCEALED-IN-A-WALL LAVATORY

A Real Space-Saving Unit

that adds beauty and distinction and can be installed in any wall. A built-in lavatory and cabinet occupying but four inches in depth, presenting the appearance of full length mirror when closed.

Ideal for Bed Rooms of homes. Other units suitable for Apartments, Office Buildings and Hotels.

Write for Free Literature. Special Discounts to Dealers, Builders and Plumbing Contractors

INVISIBOWL MANUFACTURING CORP.

38 South Dearborn Street

CHICAGO, ILL.

The EASY CHANGE

Combination Storm and Screen Door

2 IN 1

If your dealer can't supply you, write us and send his name.

COMBINATION DOOR COMPANY

FOND DU LAC - WIS.
A New Economy

With this new Milcor "Expansion" Corner Bead Setter, one man can set many more times as much Corner Bead as two men used to. Up to the time the Milcor Bead Setter was invented, it took two men to set Corner Bead even approximately straight or nearly true with plumb-line and level. And it was a slow job.

Now it is easy—speedy! One man does it. And true, straighter corners are assured. Real precision corners are made possible without any fumbling or waste of time. On big jobs, Milcor Bead Setters can be employed in series, speeding up the work to such extent that surprisingly large savings are made!

This new economy method means much to Plastering Contractors and to Building Contractors who do plastering. Bigger profits are certain, with Milcor Bead Setters on the job.

Makes Precision Corners Certain

THREE spirit-levels on the Milcor Bead Setter provide convenient means of setting the corner bead perfectly true—plumb from top to bottom and straight from side to side. On perpendicular wall corners, or on horizontal corners (over windows, passage-ways, ceiling beams, etc.) this Bead Setter is equally practical.

Nine spring-grips grasp the solid nose of the bead. When the bead is in proper position at the corner (as indicated by the spirit levels) the Plasterer fastens the bead in place. The grips on the Bead Setter are then easily disengaged from the Bead.

Even though the wall base at the corner may be considerably out of alignment, it is a simple matter to true up the plastered corner if Milcor "Expansion" Corner Bead is used. The 2 1/4-inch expanded metal wings of "Expansion" Bead provide such a wide grip on the corner that big adjustments can be made to straighten up bad corners. Use the Coupon. Order your Bead Setter or write for further information at once. Don't delay—first come—first served.

MILWAUKEE CORRUGATING CO., MILWAUKEE, WIS.
Chicago, Ill. Kansas City, Mo. La Crosse, Wis.

MILCROSS
"EXPANSION" CORNER BEAD SETTER
and its startlingly powerful and consistent performance demand that you install it. Gives you the most satisfactory mix of all.

Easy to run, easy to dump, always on the job, always a whale for more work. Capacity rated 9 cu. ft., maximum 10 cu. ft. of loose material. Plenty of over-load capacity for average block plant equipment.

9-ft. size

14-ft. size.

AMERICAN BUILDER (Covers the Entire Building Field)
Time Deals Kindly With Such Plastering

ST. JOHN’S CHAPEL is very beautiful now. But its charm will be still more appealing when mellowed and refined by time.

And thus will be fulfilled the dream of every designer—that his handiwork endure beautifully—when he himself has passed on.

Well-informed architects concede the value of Metal Lath in permanently preserving the beauty and pristine firmness of interior and exterior plastering.

And a great many prefer the NORTHWESTERN Diamond meshed laths as the most satisfactory base and reinforcing for both their plain and ornamental work.

May we send our "Recommended Specifications" with samples, including the new PLASTA-SAVER?

NORTH WESTERN EXPANDED METAL CO.
1203 Old Colony Building, CHICAGO

KNO-BURN
A flat, small diamond-meshed lath, perfect keying, stiff, yet readily formed. For all types of interior and exterior plastering. Sheets 24”x20”. Wt. lbs. sq. yd.—3.4, 3.0, 2.5, 2.2.

LONGSPAN
1/2” U-Rib lath. For suspended ceilings, partition work, in connection with steel pans, cored floors, etc. Very rigid. Ribs spaced 4” apart. Sheets 24”x20”. Wt. lbs. sq. yd.—4.0, 3.5, 3.0.

20TH CENTURY
Flat lath, diamond meshed, copper bearing. Especially adapted for warm, damp climates, sea coast, mid. centers, and with patent plaster, KNO-BURN mesh. Wt. lbs. sq. yd.—3.4, 2.5.

PLASTA-SAVER
1/4” Rib lath for interior work. Mortar saving qualities and ease of handling enables it to compete with wood lath and other interior bases. Sheets 24”x20”. Wt. lbs. sq. yd.—3.4.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER
300 AMERICAN BUILDER (Covers the Entire Building Field)

Complete Hot Water Plant ready for shipment with set of tools. Outfits complete as low as $300.00.

You make two big savings when you buy from us. 1st: You save one-third to one-half because of our wholesale factory-to-user price. 2nd: You save the cost of unnecessary waste and high labor because of our cut-to-fit plan and easy installing features which enables you to put in your own plumbing or heating systems.

FREE Planning Service

Send us a rough sketch or blue print of the arrangement of your rooms and we will figure the wholesale cost of your heating plant or plumbing system. We will show you many kinks and wrinkles where you can make savings that will surprise you. We furnish a heating plant or plumbing outfit for the exact job and we thread and mark all the larger pipes so that any handy man with the aid of our simplified plan can do the installing by our new easy method.

50 YEARS AND MILLION DOLLAR PLANTS

Behind Our Guarantee

Every Hardin-Lavin system is figured to eliminate long runs of piping, to save valuable time and unnecessary materials and expensive labor. Our catalog fully explains. The coupon will bring you a copy. You have the FREE help of our plumbing and heating engineers. They will work with you to get the best possible results at the lowest possible price.

Many years experience with all kinds of conditions and types of construction has equipped them for practical, money-saving service to builders, realtors, contractors, mechanics, institutions, home owners, etc. Write us about any plan or problem you have. We will help you without obligation—estimates FREE.

MAIL THE COUPON FOR FREE CATALOG

We are helping thousands to save money and to MAKE money. Our free bargain catalog explains how. Send for your copy today.

HARDIN-LAVIN CO.

When in Chicago visit our new plant at 120-130 W. Pershing Rd., CHICAGO. Our Bonded Guarantee and Label protect you. You risk nothing.

When writing advertisers please mention the American Builder.