WHY Fenestra Casements are helping sell 1932 Home Buyers

Only those houses that are equipped throughout with the most modern building materials will attract home buyers in 1932. You will need every available selling help this year. And it is here that Fenestra Casements do a double job — they sell from the outside and inside.

Plainly seen from the outside, they stop the passer-by. They act as a selling magnet to bring in the prospects. They immediately stamp the house as modern.

And once inside, your prospects get a close-up of Fenestra Casements—see how they flood the rooms with daylight, open wide without touching the inside screens, close snug-tight against storms, never warp, stick or rattle, wash easily from within — all advantages that sell.

And here are reasons why you can well afford to use Fenestra Casements. They reach the job COMPLETE — fitted, hinged, hung, painted, with Hardware and Screens fitted, ready to attach. As a result they save the builder the extra cost of hardware, sash cord and weights, weatherstrips, screen, etc. In addition, they save the cost of inside trim at head and jambs — no weight boxes to cover up. And they save the time and labor for fitting, hanging and installing windows, trim and screens, as well as priming and weatherstripping.

For complete information call "Fenestra Steel Window Company," in your own city, or write to:

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

Fenestra
FENNWROUGHT CASEMENTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
Johns-Manville Announces

**Triple Thick**

Johns-Manville *Triple-Thick* Home Insulation is three times as thick ... has three times the insulating value of the average 1" blanket and quilt materials ...

**AND COSTS NO MORE**

For the past three years, the now famous Johns-Manville "Rock Wool" Home Insulation pneumatically installed—has created new standards of home comfort in thousands of American homes. . . .

Now you can have this same superior insulation in "bat" form—convenient for hand packing. J-M *Triple-Thick* Home Insulation can be rapidly applied . . . requires no special tools or equipment.

No matter what type of house insulation you're using at present — J-M *Triple-Thick* Insulation will do a better job. Far superior in insulating value — it is fireproof, easier applied, more sanitary. It builds an invisible wall *within* the walls, with the insulating value of solid concrete 8 feet thick—is the most effective barrier against cold, against heat.

**J-M Triple-Thick Home Insulation has these Advantages:**

1. It is not just fire-resistant — it positively will not burn.
2. It is absolutely vermin-proof.
3. *Triple-Thick* Insulation — a light, fluffy "wool" blown from rock — will not settle, deteriorate, or change its physical characteristics in any way . . . is as everlasting as the rock from which it is made.
4. The "bats" fit snugly against the studs, therefore, the actual net covering capacity of *Triple-Thick* Insulation is greater than blanket or quilt material applied with a turn up.
5. When installed, *Triple-Thick* Insulation makes a solid wall of insulation 3 in. thick from floor to ceiling. The fibrous nature of the Rock Wool forms a natural closed joint that seals itself against air infiltration.
6. And remember, *Triple-Thick* Insulation is a J-M product — backed by the reputation of the largest producers of insulation materials in the world. Before we offered it to you we made sure that it would do all we claim for it — and more.
7. Four years' testing in our laboratories and in actual applications has failed to find a major limitation in this superior home insulation.
THE ISSUE OF APRIL, 1932

Johns-Manville Triple-Thick bats are 15 inches wide, 18 inches long and 3 inches thick. Each covers approximately two square feet of wall or ceiling area. Installation is simple and much faster than with other insulating materials. The bats can be cut with a butcher’s knife or saw or can be torn by hand to fit narrow studs or odd shaped places. They remain securely in place without a tie.

Johns-Manville Triple-Thick HOME INSULATION

Here is the most efficient—most economical—Insulation for the home . . .

TODAY, home owners are demanding full wall and ceiling insulation . . . and rightly so. J-M Home Insulation is that kind of insulation. It is offered you in a new convenient form in Triple-Thick Insulation.

This insulation will cut fuel bills from 20 to 35% — will reduce summer temperatures, indoors, from 6 to 15 degrees F. Letters from hundreds of home owners who are now using J-M Home Insulation vouch for these facts. Builders, architects, heating engineers, oil burner manufacturers and gas companies — all vitally interested in better house insulation — unite in testifying to this effect.

In terms of increased salability, alone, J-M Triple-Thick Insulation has a value that no progressive builder can afford to overlook. Send for complete details. The coupon attached makes it easy.

Johns-Manville, 292 Madison Avenue, New York City.

Please send me full details of J-M Triple-Thick Home Insulation in bat form.

Name: ________________________________

Address: ________________________________

City: ____________________ State: ________

When Writing Advertisers Please Mention THE AMERICAN BUILDER AND BUILDING AGE
It's always Fair Weather

to a "Roll-Up" Equipped Garage

Rain or snow, wind or sleet—it's all the same to Stanley "Roll-Up" Garage Door Equipment. All the working hardware is inside so the doors roll up smoothly and easily regardless of the weather. And best of all—Stanley "Roll-Up" Doors can be installed in as little or less time than ordinary garage doors.

Features of Stanley "Roll-Up" Garage Doors

The doors are of first quality, made in sections with rabbeted edges. Several styles are available in the popular 8' x 8', 8' x 7'6" and 8' x 7' sizes. Other sizes made to order.

Doors are locked by a dead bolt which engages in a slot in the track. This dead bolt furnished with standard rim cylinder—doors can be keyed alike or master keyed with the house door.

Ball bearing rollers.

Sturdy overhead track is braced by turnbuckles which hold it firmly in alignment. Track is suspended by chains requiring no special supports and making installation easy, regardless of the height of the ceiling.

Doors are drilled and mortised at the factory for application of hardware.

Advantages of "Roll-Up" Garage Doors

- No hardware visible or exposed to weather
- Doors easily opened or closed
- No wasted space either in garage or driveway
- Operation of doors unaffected by wind or snow
- Full width of garage opening available

Stanley "Roll-Up" Equipment is sold ONLY through your local dealer. See your regular source of supply for good hardware.

Full description on Stanley "Roll-Up" Equipment will be sent upon request.

THE STANLEY WORKS
New Britain, Conn.

STANLEY GARAGE HARDWARE
FOR EVERY TYPE OF DOOR
IT TAKES STEELTEX ... inside and outside TO BUILD THE SUPER-WALL

STEELTEX 38-16 is wrapped around in shingle fashion, and nailed direct to wood studding. STEELTEX has three-ply water-proofed membrane backing integral with wire reinforcing mesh.

Bricks are laid one inch away from STEELTEX 38-16. This one-inch space is filled in with bricklayer’s cement-mortar—the galvanized, 6-TIE wire reinforcing mesh of STEELTEX becomes embedded in this back-up slab.

Ribbed STEELTEX Lath holds the wet plaster with instant bonding action. Plaster flows under and around the galvanized copper-bearing wire reinforcing mesh which becomes completely embedded,—giving lifetime walls and ceilings.

The STEELTEX SUPER-WALL is constructed with brick, stone, or stucco finish, or a combination of two or all three, as desired.

The STEELTEX SUPER-WALL gives reinforced brick construction for the outside walls and reinforced plaster construction for the inside walls,—and in addition, provides insulation,—waterproofing,—damp-proofing,—is fire resistant,—has high sound resistance,—vermin proofness,—is economical in construction costs,—and yet only standard builders’ methods and materials are employed.

STEELTEX 38-16 is used for the exterior sheathing and reinforcement, while Ribbed STEELTEX Lath is the base and reinforcement for interior plaster. Inside and outside walls are not only blanketed against heat and cold with efficient insulating materials, but encased with an embedded network of steel wire (square welded mesh) which acts to take up the stresses and strains in every direction,—giving the entire structure greater strength than is obtained through ordinary methods.

Progressive Architects, Builders and Contractors realize the outstanding merits of the STEELTEX SUPER-WALL. Investigate these known facts. Don’t consider obsolete building systems when modern methods are available at the same costs. Write today for the illustrated folder about the STEELTEX SUPER-WALL. Mail the coupon below,—no obligation on your part.

NATIONAL STEEL FABRIC COMPANY, (Division of Pittsburgh Steel Co.)
Union Trust Building, Pittsburgh, Pennsylvania

Please send me literature detailing the STEELTEX SUPER-WALL CONSTRUCTION SYSTEM.

COMPANY

INDIVIDUAL

Street Address

CITY STATE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
INSTALLING the right equipment in your properties will go a long way toward making them more desirable and profitable. Because Magic Chef is the gas range of a woman’s dreams, its installation may prove the deciding factor in favor of your properties.

- Magic Chef is right because it represents the most advanced cooking appliance in the market today. It has a choice of models and a price range to meet every building requirement.
- Because Magic Chef is extensively advertised nationally, and universally accepted as the gas range of today, you can’t go wrong on its selection.
- Magic Chef will do its part to keep you “out of the red.”

**AMERICAN STOVE COMPANY**

*World's Largest Manufacturer of Gas Ranges*

NEW YORK • PHILADELPHIA • ATLANTA • CLEVELAND

CHICAGO • ST. LOUIS • SAN FRANCISCO • LOS ANGELES
The wallboard problem solved at last...and by REAL LUMBER!

This new 1/4" Douglas Fir Plywood Wallboard will not split, buckle, swell, crack, dent, or crumble — and gives you all the advantages of large size, easy handling, and low cost.

DOUGLAS FIR PLYWOOD is now available for walls and ceilings — as well as for cabinets, built-ins, and fixtures.

This new wallboard is REAL LUMBER, built up in 3 plies. It comes as large as 4 by 8 feet, sanded satinsmooth, ready to nail to wall studding or over old plaster. Douglas Fir Plywood works quickly and easily — free from the dust and grit of gypsum and plaster boards. It can be bought at retail for around 5c to 7c a square foot, depending on freight costs to the dealer.

Other thicknesses of Douglas Fir Plywood—3/8", 1/2", 3/4"—are economical for shelving, tables, closets, file cases, modern furniture, cabinets, and similar jobs.

Both the 1/4" wallboard and the thicker cabinet grades are stocked by most progressive building supply dealers. Send the coupon today for free sample and new working plans for profitable jobs.

DOUGLAS FIR PLYWOOD

$5000.00 for IDEAS!

This is not a contest, but an outright purchase offer for practical woodworking designs using Douglas Fir Plywood. Entries must be postmarked not later than August 15, 1932. Here's what we want:

1. A sketch, or plans, with approximate dimensions, for as many Douglas Fir Plywood uses as you care to submit. We will buy as many of your ideas as we can use.

2. You need not make finished or elaborate drawings. Clever "idea sketches" are enough — just so they indicate dimensions and show how your design is to be constructed.

3. You are not limited in the variety of uses you may suggest. For example, you may indicate Douglas Fir Plywood wall treatments for a whole room — such as an attic bedroom, a child's room, recreation room, dining room, kitchenette, kitchen, basement storage room, etc., or you may design entrance ways, hallways, and stairways — or Douglas Fir Plywood fixtures and built-ins such as wardrobes, breakfast nooks, bookcases, shelving, beds, store displays, fitting compartments, etc.

4. For every usable sketch employing Douglas Fir Plywood, we will pay you $50.00 each, provided returning your sketches if return postage accompanies them. If, in addition to your sketch, or plans, you care to mail us a photograph of your design as built, we will pay you $10.00 extra, or a total of $60.00 for each accepted "idea sketch." Each sketch purchased becomes the property of Douglas Fir Plywood Manufacturers with right to use it for advertising, publicity, or in any other way.

DOUGLAS FIR PLYWOOD

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
CLOCK HANGER OUTLET does away with straggling cord connections from clocks to nearest receptacles. At the same time gives firm support to the clock. Reception part is recessed, so plug cap is sunk flush with wall. This allows clock to hang flat over the outlet, with wire connection and receptacle wholly concealed. Increasing use of electric clocks makes this device most timely in your new buildings. Specify it for residences, modern offices, schools, hospitals and institutions wanting electric time. Write for data-sheet with complete listings.

THE ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONNECTICUT, U.S.A.
Carey Shingles include both asbestos-cement and asphalt types in all colors, styles and weights. Only the Carey line includes shingles with such selling advantages as the "Weather-Age" surface for asbestos-cement shingles, the Duplex Asbestos-Cement Shingle and the famous Asfaltslate Shingle, known for 26 years as "the shingle that never curls."

Careystone Siding is an asbestos-cement material, fire-proof and lasting as stone. It is supplied in gray, green, brown, red and blue-black colors and in a wide variety of styles. Carey Asphalt Siding is made of stone cemented to waterproof felt. It is furnished in brick patterns—red, buff or blended tapestry in color.

Modernizing these houses, and thousands like them with Carey Siding and Carey Shingles, created profitable business for Carey dealers and builders last year. And this business didn't depend upon new construction, for old houses must be protected, good times or bad. This year, for every new frame or stucco house which is built, over 20 old houses will be prospects for Carey Siding. For every new house built, 5 houses will be re-roofed.

We have developed a successful plan which secures this business—a plan which begins with the solicitation of the order, and ends with the financing of the long payment terms extended to the owner—two years if desired. We will gladly send full information to builders or dealers who wish to increase their profits—write today.

THE PHILIP CAREY COMPANY

Lockland, Cincinnati, Ohio

Branches in Principal Cities
To the 72% greater holding power of Reading Cut Nails, Reading now adds the outstanding advantages of CADMIUM PLATING — combining qualities of endurance and attractiveness unique in the nail industry!

Reading Cadmium Plated Cut Nails are available in sizes for every building need. Write us TODAY for quotations or further information.

READING IRON CO.
PHILADELPHIA
Today Frigidaire offers to the building industry a new development in air conditioning—the Four-Way Air Conditioner for homes, stores, offices, restaurants and other business places. It affords entirely new advantages which the building contractor will readily appreciate.

In summer the Frigidaire Air Conditioner reduces the oppressive humidity and circulates cool, clean air... keeping the atmosphere delightfully fresh and comfortable on the hottest days. In winter this same unit, when connected with the steam or hot water lines of the heating plant, functions just as a radiator. But in addition, it supplies the moisture so essential to health and comfort.

For years Frigidaire and General Motors engineers have been working to perfect this compact air conditioning unit. The experimental stage has been passed. The dream has become a reality. Frigidaire Air Conditioning Equipment is so efficient, so dependable, that each model carries a 3-year guarantee.

Write for literature and complete information today. Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.
CREATES THE FIRST IMPRESSION

The first thing that strikes the eye of the prospect when he sees the house, is glass. Because first impressions have so great an influence upon sales, it is vastly important that the glass be fine glass and that its clear, cheerful sparkle reflect the underlying quality of the home you offer for sale. The unusual and lasting brilliance of L-O-F Quality Glass is, therefore, a very tangible sales factor... doubly so because Libbey-Owens-Ford national advertising has emphasized the meaning of quality glass to the millions who form your market. Specify this fine glass in the homes you build to sell. For your protection the distinctive L-O-F label identifies each sheet of L-O-F "A" Quality Window Glass.

Libbey-Owens-Ford Quality Glass

Libbey-Owens-Ford Glass Company, Toledo, Ohio
Manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.
A MARBLE FINISH that WILL NOT fade nor stain

In attempting to achieve the solid dignity which has been associated with marble for centuries past, a compromise is often necessary. Either you must accept certain undesirable qualities found in the marble obtainable today—or you must use materials with special advantages of color permanence—Micarta, for instance.

Micarta designs in Micarta so faithfully reproduce the most beautiful examples of the native stone that close examination is required to detect the difference—and those differences favor the Micarta. Micarta is warm to the touch; it deadens sound; it will not crack nor chip; it will not discolor nor fade with age; and being non-porous, it will not absorb stains.

Micarta patterns are not limited to marbles. More than forty designs present a wide selection. Some of these are frank reproductions of materials now being used, but with qualities found only in Micarta. Others open up entirely new possibilities in interior decoration.

Have the Westinghouse representative show you samples of all the Micarta finishes now developed, or, if you prefer, let us send you a sample of the verde-green marble finish shown in this advertisement.

Westinghouse

MAIL THE COUPON

Westinghouse Electric & Mfg. Company
Room 2-N, Fourteenth Fl., Pittsburgh, Pa.

[□] Please have your representative show me samples of all the Micarta finishes.

[□] Please send me a sample of Micarta in the verde-green marble finish.

Name

Company

Address

City

State

[Stamp]
DRAGGED out of
the DARK

and made into
a SALESMAN!

The old fashioned fuse box under the cellar steps is gone! Its job is taken by a neat panel set into the kitchen wall where it becomes one of the conveniences of the house—one of its selling points.

You can make your specifications distinctive and swing bids your way by talking the advantages of fuseless home protection.

Modern house wiring is protected by the Westinghouse Nofuze Load Center. When the lights go out, a flip of the handle instantly restores service. Briefly, here are the advantages your clients will enjoy:

SAFETY
Tinker-proof and unfailing protection for the wiring system and electric appliances.

CONVENIENCE
No groping in the dark to find burned-out fuses. Service is instantly restored from the kitchen or other convenient spot by the flip of a handle.

ECONOMY
Shorter wire runs decrease wiring costs. No fuses to buy.

The coupon below will bring you complete information. Mail it today.
This OVERdoor installation shows the desirability of one wide OVERdoor where the driveway approach to the garage has a sharp turn.

A pleased customer for every installation—

when you push doors that satisfy

YOU know that in the long run you profit most when you furnish garage doors that satisfy. You can count on a pleased customer for every installation when you sell the BARCOL OVERdoor. This improved overhead type door embodies extra quality materials that your customers will like. The better construction used in making this door also will appeal to them. In design the OVERdoor is noticeably superior. It opens and closes easily, and is perfectly balanced at every point of its vertical travel. Its unique weatherproof-closing feature will not be found in any other upward-acting door.

These and the OVERdoor's several other advantages are well worth your study. In addition to its mechanical betterments the OVERdoor offers you a reasonably good profit on every sale. That also is of importance to you. We believe you will find in this product the ideal garage door—the door that will give your customers the utmost possible service and satisfaction and that will provide you with your own greatest ultimate profit. Why not write us today regarding the sale of the OVERdoor in your community?

BARBER-COLMAN COMPANY

General Offices and Plant: ROCKFORD, ILLINOIS, U. S. A.

Most customers would like to have this type of door — and will gladly pay for its extra quality and service.
A method is now available for cementing Formica sheet 1/16 thick direct to smooth plaster walls. With a cap molding and base this makes a most attractive treatment for wainscot. 

First cost is moderate. No upkeep or refinishing need be anticipated. The material can be cleaned with soap and water or with an organic solvent. It is very easy to keep clean.

The picture shows walls that have been covered in this way. Ask for the facts.

THE FORMICA INSULATION COMPANY
4620 Spring Grove Avenue, Cincinnati, Ohio
A New Window

That Reduces Installation Costs

• That does away with cords, pulleys, and weights.
• That is 5.26 times as weather-tight as the ordinary non-weather-stripped window, and at least ½ more weather-tight than the ordinary type of weather-stripped window.
• That is entirely Pre-Fit at the Factory.
• That is adaptable to any type of wall construction.
• That gives the added beauty and practicability of narrow trim and narrow mullions.
• That is complete with Pre-Fit storm sash (including the new Curtis Protectorvent) and Pre-Fit screen.
• That is shipped in weather-resisting, dust-proof cartons, assuring delivery of a bright, clean frame.
• That is low in price and high in quality.

SILENTITE Will Help You Sell Houses . . .

That's one of the big advantages of the SILENTITE Pre-Fit Window Units. It sells itself. It makes a real talking point out of windows. And you'll find a mighty receptive audience when you show home owners how unlikely it is for the SILENTITE Pre-Fit Window to stick or jamb, how it is free from rattles. And there's real selling talk in SILENTITE Weather-tightness, with all it means in comfort and fuel saving.

Contractors have already installed more than 2,500 SILENTITE Units in all parts of the country—they can tell you in terms of cold hard cash of the savings they've made in installation costs. If you would like some of these savings on your next job, get all the facts about SILENTITE now. Your Curtis dealer can give you complete information—or, if you prefer, just send us the coupon.

A Product of the Curtis Companies

Curts Bros., & Co., Clinton, Iowa
Curts & Yale Co., Chicago, Ill.
Curts & Yale-Purvis Co., Minneapolis, Minn.
Curts Door & Sash Co., Clinton, Iowa
Curts Woodwork Co., New York City

Curtis Compaines Service Bureau
440 Curtis Building, Clinton, Iowa

Please send me full information about the Curtis SILENTITE Pre-Fit Window Unit and the savings that you have made in its use.

Name
Address
City State

When writing advertisers please mention THE AMERICAN BUILDER AND BUILDING AGE
Here is one of the most important reasons why the popularity of Pennvernon Window Glass has increased so rapidly among architects, builders and home-owners: Through Pennvernon Glass, the scenes beyond it can be viewed clearly, with full definition of line, without distortion, and in true and natural colors. Briefly, Pennvernon Window Glass allows Nature to look like itself.

The explanation of Pennvernon's superiority in this respect is simple. It results from the special process of manufacture by which this better window glass is made. Pennvernon's exclusive method of manufacture gives it a remarkable flatness, clearness and freedom from distortion. And because Pennvernon is itself unusually free from color, it is able to transmit faithfully the true colors of Nature, neither changing nor dimming their brightness.

Sharper, clearer vision—but that's just one of Pennvernon's outstanding features. In addition, this glass has an extraordinary intrinsic beauty of its own—a brightness and brilliance of surface on both sides of the sheet that means much better reflection.

And these bright surfaces are so smooth and dense that they are highly impervious to wear and abrasion—giving Pennvernon longer life.

Investigate Pennvernon Window Glass. See for yourself what makes it such a fast selling, profitable glass to stock. It is available at the warehouses of the Pittsburgh Plate Glass Company in leading cities and through progressive glass jobbers. It can be had in single or double strength and in standard thicknesses up to $\frac{1}{16}$". Write for samples and our booklet on Pennvernon. Address Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Pa.
Primed
at the mill with Aluminum Paint
...these products give your house added saleability

Use aluminum mill-primed lumber throughout your house and this is what you stand to gain. (1) All woodwork is protected against moisture damage—rain, cellar damp, sweating, wet plaster. Thus warping, checking and similar trouble is definitely retarded. (2) Paint top-coats anchor better. (3) You give today's hard-to-please buyers full value for every dollar to be spent. (4) Your reputation as a careful builder gets another boost.

Today you can buy siding, roof sheathing and sub-flooring, moulding, shingles, trim, window sash and frames, and built-in fixtures that have been primed and back-painted at the mill with aluminum paint, the pigment portion of which is Alcoa Albron Powder made by Aluminum Company of America.

If your dealer does not handle this ready-primed and back-painted material we will direct you to a source of supply. Address ALUMINUM COMPANY of AMERICA;
2420 Oliver Building, PITTSBURGH, PENNA.

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT
INTERNATIONAL HARVESTER

Announces a

new 6-cylinder truck

International Harvester takes particular pride in announcing this new truck. Even to an organization which has made quality trucks for nearly thirty years, the Model A-3 is an outstanding example of both design and construction.

The Harvester organization presents the Model A-3 as reflecting the century-old reputation for quality that is behind all International products. It offers this lasting quality in a truck of smooth 6-cylinder power at the remarkably low chassis price of $795.

Look at this new truck... and do not hesitate to judge its value by what you see. For International appearance is an accurate indication of International performance... and the A-3 is no exception to this rule.

Here is a truck of great stamina... a fast truck... a powerful and dependable truck. It is beautiful both inside and out. And judged on whatever basis of cost figuring you may use, you will find it decidedly economical.

Go to a dealer's showroom, or to one of the 183 Company-owned branches in the United States and Canada. See the new Model A-3. Then test it in your own way on your own job. Then own it.

And remember that when you do own it, you can rely upon the famous Harvester Company service organization to make sure the Model A-3 will deliver the famous International service to you!

INTERNATIONAL HARVESTER COMPANY
606 S. Michigan Ave. OF AMERICA Chicago, Ill.

Model A-3 Features
4-speeds forward and 1 reverse
...powerful 6-cylinder, L-Head type engine, 3¼-inch bore x 4½-inch stroke... 11-inch single plate, vibration-dampened clutch... irreversible cam-and-lever steering gear... semi-elliptic auxiliary rear springs... 4-wheel, mechanical internal-expanding shoe type brakes... 2 wheelbases, 136 and 160 inches.

$795
for the 136-inch wheelbase chassis, standard equipment, f.o.b. factory

Goto a dealer's showroom, or to one of the 183 Company-owned branches in the United States and Canada. See the new Model A-3. Then test it in your own way on your own job. Then own it.

And remember that when you do own it, you can rely upon the famous Harvester Company service organization to make sure the Model A-3 will deliver the famous International service to you!

INTERNATIONAL HARVESTER COMPANY
606 S. Michigan Ave. OF AMERICA Chicago, Ill.

INTERNATIONAL TRUCKS
URING the past winter in many communities the local contractors, carpenters and other building tradesmen have been treated to a convincing lesson on how to get business. The Rochester Plan, the Muncie Plan and the other community plan drives to relieve unemployment, insofar as they have succeeded, have been organized on the basis of a consistent and thorough house-to-house canvass of home owners to persuade them to take advantage of present low building costs—and, at the same time, put men to work—by making needed repairs and betterments to their homes and other buildings.

These campaigns have centered around home maintenance and remodeling as affecting the greatest number of families and as offering the most justifiable avenue of investment for "hoarded" or other funds. There has been strong public backing for these campaigns for employment on home improvements. Press and pulpit and all community organizations have taken up the cry until now home repairs have acquired such a standing that the man who has his back porch repaired or a new bath tub put in is almost regarded as a public benefactor.

The men of the building industry—carpenters, plumbers, roofers, the contractors, dealers, architects—find themselves right now in the path of this surge of public sentiment. It is their opportunity to stimulate general business and at the same time to help themselves. Yet, how many are taking advantage of this opportunity in the aggressive, sales-creative way which the automobile industry, for instance, would if the same public backing were given the proposition of new car buying and old car modernizing?

This publication has maintained that one of the causes of the present depression is that the men of the home building industry have permitted their commodity, the modern home, to be outsold by motor cars and radios and other luxury lines. The public has been led to spend its money for these non-essentials, leaving little or none for investment in homes and in home improvements, until today America is economically out of balance. Many business leaders agree that community building and modernizing campaigns are needed as the surest means of re-establishing employment and normal prosperity.

This is a challenge to contractors and builders and to lumber and building material dealers to carry this work further. It is a rare opportunity to demonstrate leadership and sales ability. Contractors, builders and dealers are the men best qualified to plan and execute a community building drive; and a large part of the work will naturally fall to them. They should be in the forefront of the forces organizing in every locality to create sentiment for home improvements and they should immediately arrange to inspect and survey every house and every business building so as to determine what repairs and betterments are needed. This is work for men experienced in construction and competent to give owners sound advice as to what should be done.

Housing must be improved. The need is urgent. Dilapidated and insanitary houses cast a blight over many neighborhoods. Some call for condemnation proceedings and a wrecking crew, others justify extensive repairs. Every street has its examples of old style, outmoded architecture that no longer measures up to present day standards.

The new styles in homes and the many innovations in building materials and home equipment which 1932 offers the public also challenge builders to do a mighty job this year of bringing their communities up to date from a housing and architectural standpoint. Contractors and builders should use their organizing and selling ability. They are accustomed to seek out their clients and customers from among the general public, finding the man who will buy a home or will order one built, and the
home owner who needs his roof renewed or a sun porch built on; and this is the time of all times when they should be doing this. The present season calls for aggressive and creative selling of new homes and of home improvements. Architects and builders must redouble their efforts at planning and selling; and the supply men, also, must come out of their warehouses and help with this selling job if maximum results are to be secured.

The general business public is looking to the home building industry to get the money out of hiding and the men back to work. The 1932 models are ready, and the home-owning and home-seeking public is waiting. It is a challenging opportunity!

TAXATION OF REAL ESTATE AND MOTOR VEHICLES

An incident that occurred recently in the Chicago district emphasized a point that repeatedly has been made by the American Builder and Building Age—namely, that a larger part of the cost of building and maintaining highways should be paid with taxes collected from motor vehicles, and a smaller part with taxes collected from real estate.

Sheridan Road is the highway which begins at Lincoln Park in Chicago and runs northward along the beautiful shore of Lake Michigan through that city and through several of the finest residential suburbs in the country to Milwaukee. It was proposed by the Illinois state highway department partly to reconstruct Sheridan Road to make it safer and more suitable for through traffic. The village boards of five of the principal suburbs adopted resolutions opposing this plan. "We want to discourage, rather than to encourage, the use of Sheridan Road for through traffic," said their spokesman. This traffic, he said, should be diverted to routes some miles west of Lake Michigan. "The suburban home owners," he contended, "should be saved from the noise, fumes and hazards of through traffic."

Our governments have proceeded in the past upon the assumption that the construction of hard-surfaced highways benefits and increases the value of real estate, especially of that adjacent to them, and that therefore real estate should be taxed to provide funds for their construction and maintenance. Less than one-half of the money now spent upon the highways of the country is collected from motor vehicles in license fees and gasoline taxes, and more than one-half from general property; and taxes for highway purposes are among the most burdensome now borne by real estate. Thomas H. MacDonald, chief of the United States Bureau of Public Roads, in testifying recently before a Senate committee, contended that only 13,300 miles of "hard roads," or only about 15 per cent of the total mileage of important highways, should be supported by motor vehicle taxation. All other roads he classed as "land serving" and therefore as roads that should be provided and maintained by taxes on real estate—in other words, by taxes on the already grossly overtaxed farms and residential property of the country. In the state of Pennsylvania, for example, the mileage of rural roads—those outside of cities—is about 90,000, of which 25,000 miles are surfaced, and Mr. MacDonald contended that only about one-half of even this hard-surfaced mileage should be provided and maintained from motor vehicle taxes—in other words, that 76,700 out of the total of 90,000 miles should be provided and maintained from real estate taxes.

Destructive to Realty Values

Owners of real estate and all other persons who desire to see a revival of building construction, and especially of home building, should squarely and vigorously oppose the policy of taxation for highway purposes advocated by Mr. MacDonald, who evidently is much more anxious for the prosperity of the automobile industry than for a revival of the building industry. Throughout the country owners of real estate, including both farms and homes, are suffering severely from reckless government expenditures and the excessive taxation, especially of real estate, in which they have resulted. Sometimes real estate is benefited, but often it is actually injured, by highway development. Adjacent real estate consisting of homes is injured when the development of a highway results in a heavy traffic, consisting not only of pleasure vehicles but also of huge buses and trucks, passing by it constantly at all hours of the day and night. On the other hand, users of the highways are benefited, provided highway development is not carried to such an excess that even those who own motor vehicles cannot bear the taxes thereby made necessary.

Only Those Benefited Should Pay

Those who benefit by any public expenditure should, as nearly as possible, be made to bear all the taxation in which it results. The highways being built and maintained throughout the country are being provided almost entirely for the use of motor vehicles, and the more expensive for the use of buses and trucks. Therefore, the entire cost of building and maintaining them should be imposed upon the users of motor vehicles; and, as total motor vehicle taxes are not now sufficient to pay the entire cost, either expenditures upon highways should be reduced or the amount of taxes collected from motor vehicles as a whole should be largely increased.

Most owners of real estate also own automobiles. When motor vehicle taxes are made high enough in proportion to highway expenses, the owners of real estate who also own automobiles will pay their share of them as automobile owners. Real estate should not continue to be so taxed that its owners will continue to pay much more than their share of highway expenses, in order that those who own motor vehicles, but who do not own real estate, may continue to escape paying a large part of their reasonable share of highway expenses.
1—Tall pillars, fine Colonial details make this California home attractive. Photo by Mott.

2—Entrance detail of fire station and town hall at Mamaroneck, N. Y., showing careful design.

3—Illustrating the modern trend in city apartment design which emphasizes wide courts, trees, grass, sunshine.


5—Inviting entrance to public school at Hartly, Del., in which Colonial treatment is effective.

Needed in 1932...

Regardless of pessimists, there is a real need and a big market in the United States today for better small homes—modern apartments with courts and sunshine—healthful schools. Especially to the Modern Home—1932 Model, is this issue dedicated.
What the Well Dressed House Will Wear in 1932

Design specialists say—

The interesting combination of several materials in one house is a popular trend.

The public is more "design conscious" than ever before; builders are giving them better architecture.

Exteriors tend to be more harmonious, simple; there is less "gingerbread" and unnecessary ornamentation.

The big market yet untouched lies in the $1500 to $4000 residential field.

Regional types

Colonial architecture is most popular in the East with English a close second.

Middlewest builders still favor English, but also like Colonial and French.

Southwest and South still prefers the Spanish, modified to localities. English stucco houses growing more popular. Several new types, such as "Monterey" and "Pueblo" are attracting attention.

While house construction in many parts of the United States has been practically at a standstill, ideas as to architecture, planning and use of materials have been developing rapidly.

A survey of the activities of builders and architects in the important geographical districts of the country shows how the public's ideas on architecture have been changing.

Builders report that the public is more "design conscious" than ever before and that clients appreciate and are demanding houses of architectural variety and merit.

This year, therefore, builders are taking advantage of low material prices and a plentifulness of good architectural talent available at low cost to provide style appeal of a high order, combined with low sales price.

The general trend everywhere is toward roomy and convenient interior layouts in which waste space has been eliminated. Exteriors tend to make use of one of the popular period styles, such as English, Colonial, Spanish or French adapted to the needs and customs of the local community.

There is a tendency toward more simplicity of exterior in which good use of mass and geometrical forms, spacing of windows, and good composition replace the former striving for effect by use of unnecessary ornamentations or superficial gables, "gingerbread" trimming, etc.

Combinations of materials are growing in popularity. The variety and interest some builders formerly employed to catch the public eye by adding unnecessary and oftentimes grotesque exterior ornamentation is being achieved in a more permanently pleasing fashion by the intelligent and conservative combination of several materials.

By combining stone, brick, stucco, shingles, wide siding in various ways in keeping with the architectural style, monotony is avoided, and yet such work can be handled with very little increase in cost.

The survey of geographical sections shows certain types more popular than others. In the east and northeast, there is apparently a growing popular feeling among builders and their clients for the Colonial in its various forms, expressed by "Georgian," "Early American," "Dutch Colonial." The simplicity of Colonial, in which most of the exterior ornamentation is concentrated in one or two spots while the mass as a whole remains simple, is desirable.

The English type of architecture executed in brick and half-timber and also in combinations of brick, stucco and stone is a close runner-up to the Colonial in the east.

In the midwest and mid-north states, the English style continues to be most popular, although here, too, Colonial receives considerable attention. The French or Norman also is well liked.

Spanish and Spanish-Mexican types of architecture still predominate in the south and southwest; but a variety of English executed largely in stucco is growing in popularity in California. A more recent development has great possibilities is the so-called "Monterey" type of architecture, in which the principal elements of both Colonial and Spanish are united in a pleasing fashion. This type allows an interesting combination of materials, such as whitewashed brick and stucco, or brick and wide siding, that seems to have caught the public eye. An overhanging bracketed second story balcony is a characteristic feature of the "Monterey."

In certain areas of the southwest where the Aztec influence is apparent, the Spanish-Mexican style of architecture is modified to harmonize with rolling plains and desert country. This is sometimes called the "Pueblo" style, which is very suitable for such regions.

Styles moderne are being used for demonstration and show houses in several instances. Some of these are logical and pleasing, others classify as novelties, not to say freaks. The public in general does not take to them except in curiosity; and it is doubtful if this modern European style, especially the type resembling a shoe box on stilts, will ever be adopted generally by home builders in this country, or approved by our home buyers. The current newspaper talk of revolutionary mass production home building, using strange and new materials, is usually illustrated by architectural drawings in this outlandish style, but this is evidently for publicity purposes only—public acceptance still favoring strongly
The 1932 Model Homeland Bungalow

£9500

Designed and built by Ira C. Berns in Palos Verdes Estates, Calif., this house illustrates a Spanish type of good design and simple treatment that is very popular.

The traditional homely type of early American and English which for generations have pictured "home" to most of us.

There is a distinct trend everywhere toward larger use of pre-manufactured units, such as doors, windows, bookcases, trim, cupboards and other pre-cut units. This is an indication of better architectural style as such units are as a rule the result of the work of competent producers.

There is less deceit apparent in the use of materials, less attempt to disguise or misrepresent them. Wood and frame construction which continues to be most widely popular, is used frankly and simply, as are the other old standbys of brick, stucco and stone. New materials are being used without attempts to make them look like something they are not.

But no matter what style of architectural dress is adopted for the 1932 home, the interiors will be very completely supplied with accessories, appointments and items of mechanical equipment which will not only make these homes an interesting, convenient and comfortable place in which to live, but also will contribute definitely to their style and good appearance. Clean fuel heating plants, concealed radiation, air conditioning equipment, automatic refrigeration, artistic lighting, colored bathroom fixtures, convenient kitchens and dozens of other items of special equipment vie with each other for the attention of the home buyer. Each contributes to the desired end of achieving the really modern 1932 home.

DUTCH COLONIAL

Six rooms, bath, downstairs lavatory and attached garage. Exterior materials and designs are authentic, genuine reproductions of the original houses built by Dutch settlers in Northern New Jersey. Peculiar combinations of brick and shingle or red stone, stucco and shingle.

ENGLISH

Six or seven rooms, two baths, downstairs lavatory, attached one or two-car garage. Houses of this design, with rich exterior in textures of rough brick, rusticated siding and stucco, are among the most famous examples of architecture in rural England. These houses are available on Avenue corners or park frontages.

EARLY AMERICAN

Six rooms, bath, downstairs lavatory, open porch and attached garage. Authentic Colonial design with exterior in stucco reminiscent of the dignified simplicity of some trim old New England village. Note how the quaint dormers break the roof line with pleasing effect.

These three popular styles of architecture are featured in a new series being offered by developers of Radburn, N. J. Authentic design is again emphasized. Houses are sold for $10,800 with only 10 per cent down.
SKILLFUL PLANNING achieves LOW UNIT COSTS

The charm and economy of group housing is being more and more recognized. Outstanding examples of residential communities of this type exist in a few cities and they have met with popular acceptance.

It is likely that the economy of construction of group housing, its easy adaptation for striking landscape and interior court effects, and the quaint charm of its varied, yet unified group design, will recommend it to residential builders and community developers as one of the best types for the new residential period.

One of the most recent outstanding achievements of this type is that of C. K. Wells, Jr., Baltimore builder, at Middleton Court. It consists of twelve detached and semi-detached homes, designed in Charleston Colonial style, commodiously planned inside and well constructed of brick, painted with weather resisting white cement paint and capped by slate roofs. The group has been attractively laid out around a central garden court. It is reported that these homes have made a strong appeal among families seeking a first-class environment and able to carry homes that are priced at $14,250 to $17,750. Eight of them were sold in ten weeks.

Skillful planning made it possible for the builder to reduce his unit costs while at the same time maintaining a high quality residential appearance.

The court was laid out on a plot of ground measuring roughly 230 by 300 feet. Twelve houses were erected on this site, two detached and the others semi-detached. The layout was planned to give as much free space as possible.

The detached houses have one-story porches, four bedrooms and two baths. The semi-detached have two-
story porches, three bedrooms and two baths. Each house has a clubroom in basement and is provided with a two-car garage. Homes are equipped with ample closet space. Bathrooms are tiled and equipped with every convenience. Heat is supplied through concealed radiators by a two-pipe vapor system.

Year around comfort and economy are further insured by the thorough insulation of walls. Insulation is also used on ceilings and floors over garages. Each house is equipped with red oak hardwood floors throughout and there is an open fireplace in each living room. All exterior millwork is cypress. The doors are of simple Colonial design. Metal weatherstripping and copper screens are used. Plumbing fixtures are of high grade vitreous china, enamelware and brass.

Rooms are unusually large, airy and well-lighted. Each home has a living-room fireplace and an attractive bay in the far end of the living room.

The provision of a comfortable basement room is made possible through the use of a gas-fired boiler. This extra room is a popular feature. It is not costly to fit up—linoleum makes an ideal floor material and wood paneling produces an attractive effect.

The semi-detached houses have two-story porches, providing additional room for outdoor living in the summertime. Large maple trees have been planted around the homes. Variations in design between units add materially to the attractiveness and desirability of this well conceived community development.

Harmonious proportions, authentic Charleston Colonial architecture and efficient floor plans are features of Middleton Court homes. The porch is especially attractive. This type of group design lends privacy to each without sacrificing charm.
WHY they did it
Building permits were falling off; the building outlook was bad. People said the community was overbuilt, that money could not be obtained for financing homes.

WHAT they did
Ran a convincing series of advertisements in the local newspapers; increased sales effort and reduced other expenses. Emphasized low costs, good design, fine equipment, pride of home ownership.

RESULTS...
Increased volume of business, an average of $49,521 annually for the past four years. During the same period building permits for the city decreased 24 per cent.

DONT FOOL YOURSELF!
YOU ARE JUDGED BY YOUR HOME

Don't judge your home by its appearance. Don't judge it by the cost of the materials that were used to construct it.

Don't judge it by the way it was built. Don't judge it by the way it was decorated.

Take Advantage of Our Easy Financing Plan and Low Building Cost

**We Are Helping San Diego**

HAVING had $11,200 worth of homes under construction in the past thirty days and with $15,700 worth of new construction to be started in the next ten days.

NEVER have we been able to offer you homes with such large rooms; all tile rooms and two-ent garage for the above money.

Your home will be constructed complete for $4750. It is the home you are looking for.

First Floor Plan
- Living Room
- Two Bedrooms
- Kitchen
- Dining Room
- Bath

Second Floor Plan
- Two Bedrooms
- Bath

We are sure that you will appreciate the individuality and attractiveness of our homes. Each home has been designed and built to reflect the latest in modern design and efficiency.

The Dennstedt Co.
11 Fifth Ave. Hilcrest 6204

BETTER CONSTRUCTION AND LOWER PRICES

Samples of the aggressive newspaper advertising being used by Dennstedt to increase volume of business.
for the last four years. During the same period of time the building permits decreased about 24 per cent.

Our firm has in the past tried radio, magazine, direct mail, personal solicitation and newspaper advertising, and after giving each different kind credit for the inquiries received, our records disclose that newspaper display advertising, for the amount of money spent, produced the best results. We have had inquiries from practically every state in the Union.

Just recently we designed and constructed a home in San Diego for a business man of Topeka, Kansas, which was paid for in cash when completed. This was all accomplished by correspondence—no member of our organization having met the owner until he and his family arrived here to take possession.

After a prospect calls at the office, the "ad" has accomplished its purpose, and it is then up to the salesman to make the sale on the merits of service, construction, material and workmanship. We find this is best accomplished by taking the clients to inspect some homes under construction—as seeing is believing.

I would like to see a display ad in the newspapers by every contractor or builder, for I know the results would help the whole industry. Don't put in an ad once and expect immediate results, as the only fair way is to advertise at regular intervals. If you follow this method you will not be disappointed.

To bring back prosperity and relieve unemployment each contractor and builder should have for his motto, "Early to bed, early to rise, work like hell and advertise.”

Consider These 1932 Sales Methods

HOME INSPECTION SERVICE

A "help for homebuilders" service in which builder offers to inspect houses and make recommendations to prevent obsolescence or disrepair. Sell the idea that to preserve value, a dwelling must be periodically examined and minor repairs taken care of. Such contacts will lead to bigger work.

HOUSE TO HOUSE SELLING

Every employee and member of the firm to spend at least one-half of each day making personal calls to promote building, using arguments of reconstruction drive to "put idle money back into circulation".

CO-OPERATIVE COMMUNITY DRIVE

Organize or take part in a "Spend for the Home in 1932" campaign to arouse public interest in home building and improvement. See March American Builder and Building Age, page 26, for complete description of how such a drive may be successfully carried out.

MANUFACTURER AND DEALER HELPS

Many large manufacturers of building materials and equipment are offering planning, financing and selling helps for builders and dealers. Get in touch with your local representatives or write American Builder and Building Age.

NEWSPAPER ADVERTISING

Persistent advertising such as reported on this page by Dennstedt Co., accompanied by news articles and publicity.

DIRECT BY MAIL SELLING

Plan a series of short, plain-talk letters to rent payers covering subjects such as (1) build now while costs are low (2) new home designs (3) new home equipment (4) how building moves idle dollars (5) new inspection service (6) definite modernizing suggestions (7) a financial setup for one of your houses showing how rent pays for the home.

RADIO

Twice a week short programs interspersing music and brief talks on home building helps, to be broadcast from low cost local stations.

OTHER SELLING HELPS

Model homes, essay contests on home ownership, best house plan contests, photo contest, etc. Capitalize on the current federal, state and local drives to bring out idle dollars by starting a strong selling program. Work with local dealers, architects, realtors and others but remember that the builder is the ONE man fully qualified to do creative, successful selling of homes.
Getting Money for Modernizing

Another scheme that works well for remodeling and repair work is to grant loans for a 12 months' period, or as long as 18 or 24 months. Six per cent interest is charged on the monthly balance. On a modernizing job of $300, monthly payments amount to $27.11 over a twelve-month period.

One local financing method that has proven effective is to organize independent financial companies, separate from the builder's or dealer's business, which permit the builder or dealer to clear a name through the company without arousing the antagonism of the prospect in case a loan must be refused.

With a small revolving fund of $5,000 it is often possible to finance a great deal of remodeling and repair work. One man takes in more than $350 a month with a small fund for financing such work. After a down payment, a note is taken for the balance and 1 per cent a month is charged on the unpaid balance for small jobs under $1,000.

In another finance plan for remodeling, repair work, and small garage construction, the builder negotiates to make certain improvements not to exceed $500. The builder's price, or the balance left after the down payment, is divided into eleven equal monthly payments. The builder goes to the dealer with the customer with specifications for the repair job. It is explained to the customer that 6 per cent interest will be charged on the amount of the loan on the 12th month. The builder then suggests that if the customer will pay cash for the job he will give them 5 per cent discount on his contract price. If the customer still desires credit, however, (Continued on page 78)

**Home Designs**

**Recommended for 1932**

On this and following pages are shown Modern Homes—1932 Models, selected for their charm, salability and practical utility. They illustrate the trend toward better design as well as good construction.
The Best
Two Story House


Simplicity, beauty of proportion, and meticulous attention to detail mark this as a design of outstanding merit. The front is of shiplap siding. Exterior trim is of white pine. Volume is about 29,500 cubic feet.
Several Materials Combined

An appealing and harmonious assortment of materials such as is revealed in this English residence is all too rarely found. The nature of the site has permitted a long, low treatment of design.

The house below is suitable for narrow lot and is inexpensive to build, being easy to frame and of compact plan. Twenty houses of this type were erected in one locality by these New York builders.
New England Colonial

This is a design with a practical arrangement that is inexpensive and efficient; yet it is beautiful and well proportioned. Things to recommend it are the vestibule, coat closet, fireplace, porch, dining alcove, entrance to rear basement. The vaulted stoop and graceful arched porch give distinction without extravagance.
Brick and Stucco

West coast bungalow of white brick, DeLuxe Building Co.

One of the best of small Colonials carried out in brick in pleasing fashion. The wide windows, shutters, attractive door give character. Reverse floor plan at left on opposite page.

National Plan Service No. 716-B. (Plans opposite to left.)
Economy Homes for 1932

Three Bedrooms—Two Baths for $7,000
D. WENTWORTH WRIGHT, Architect

This Colonial cottage (floor plans on right) was specially designed for an Eastern speculative builder to provide a maximum of prospect appeal at a minimum of cost. It can be built for less than $7,000. The chimney is of white-washed brick and the bay is roofed with copper. An overhead garage door is provided. If desired, the entrance can be enclosed to provide a vestibule. The foundation is square and is inexpensive to lay.

Commodious Cape Cod Cottage for $6,500
R. D. EWELL, Architect

The Cape Cod design presents an excellent style for the inexpensive small home. Porch and entrance lines can be varied, if desired. The central chimney is a good feature. A large living room, downstairs lavatory, three good bedrooms and ample closet space and attached garage make this an attractive cottage.
in Popular Price Ranges •
for the Spring Market

SECOND FLOOR PLAN

FIRST FLOOR PLAN

Plenty of interior space, with the utmost economy of construction, is provided in this simply framed Dutch cottage with garage in the cellar. The dining room can be partitioned off if desired. The above photo shows how attractive these little cottages can be.

$4,500 House Has Combined Living and Dining Room
KEENE BROTHERS, Designers and Builders

Compact Design for Narrow Lot
Construction Cost About $8,000
WILLIAM C. HALBERT, Architect

This house can easily be built on a lot no wider than 40'. The plan is unusually compact, with four bedrooms and two baths, and can be economically framed. Downstairs, a basement playroom is provided, 25' by 12'. Specifications include a 1-pipe steam system with jacketed boiler, brass pipe throughout, kitchen sink 60" x 22", bathroom shower, tile wainscote, built-in baths, oak flooring, knotty pine wall finish in dining room, and white pine finish over living room fireplace with stock mantel of special Colonial design. The garage is put in the cellar and the porch is included within the main block of the house.
5 Good Exteriors
For Same Floor Plan

Designed around a compact plan, these exteriors are inexpensive but attractive. Spanish, English, Colonial and French types are represented. They will fit either a wide or narrow lot. For a wide lot the front door should face the street; for the narrow lot the chimney faces the street.
A New "One Room" Apartment

Of 179 Units, 170 Are Single Rooms

SHELTON APARTMENTS, Bridgeport, Conn.

WILLIAM F. CHATLOS, Builder and Owner

JOS. W. NORTHROP, Architect

This apartment was designed and constructed in order to supply what was thought to be an existing demand for less expensive living quarters, hence the unusually high percentage of single-room rentals. It was opened on January 1st and the renting proceeded faster than was anticipated. At the end of the first six weeks, more than 70 units had been rented and additional rooms were being taken at the rate of five or six per week, it was said. Monthly rentals for single rooms range from $30 to $36, according to location, while two-room suites rent for $47.50. The building has a frontage of 180 feet and covers a total of 28,000 square feet of ground. The construction is of brick and terra cotta with trimmings of white marble. This apartment is said to be one of the largest of its type in New England. A row of twenty-six brick garages has been built in the rear of the apartment and more units will be added in a short time. Individual storage rooms are provided in the basement. Garbage disposal is provided by means of modern incinerators installed in the building. The total cost of the Shelton Apartments was $350,000.

Without such a kitchen unit as this, a convenient one-room apartment would not be possible. In a compact space, it provides a complete kitchen cabinet, with enameled cupboards of generous size, an enameled drain board, sink, gas range, and electric refrigerator.
MODERN building materials and methods merged in modern architectural form is the formula for making a 1932 model store building, as applied by a Buffalo, New York, firm in building recently five new retail electrical homeware appliance stores and in altering sixteen leased and three system-owned stores for an electric power public utility system.

What are the modern building materials? They are such materials as aluminum, vitrolite, micarta, formica, flexwood, macotta, terrazzo, zeniththerm, monel metal,opal glass, stainless steel, chrome-plated brass, structural glazed tile, black and silver coated, smooth finished exterior face brick.

The question as to how these materials are structurally used can best be answered by a trip to and through one of these modern store buildings. It is a one or two-story structure with basement. Structural framing is of steel beams, girders and columns, wall bearing. Basement span is of three bays, first and second floor spans clear, with skylights at the second floor.

Roof and floor construction are of concrete on bar joists. Roofing material is either 20-year-bonded tar and gravel or asphalt. Roofing insulation is cork, 1½ inches thick. Foundation walls are of concrete. Exterior walls are of black and silver coated, smooth finished face brick, with tile back-up.

The use of metal spandrels without brick backing, but instead utilizing insulation less than one inch thick, with the same insulating properties as a 12-inch masonry wall, effects a real structural economy in masonry work, with gains in structural efficiency and effectiveness. Spandrel panels are of black vitrolite and green marble.

The building’s base is either of limestone or cut cast stone. Copings are of silver terra cotta and cornices of black and silver terra cotta. Thus the building’s exterior surface presents a soft-toned yet colorful, lustrous, harmonious ensemble in grays, blacks and silvers.

Stripping this surface, bringing it to glowing life, are vertical rows of lights concealed in flashed white opal glass pilasters that are framed and finned—either with chrome-plated brass or stainless steel. The black and silver terra cotta parapet is fluted to accommodate 150-watt floodlights in alternate flutes. The parapet’s central section is capped by a luminous glass fixture.

The most modern exterior illumination is the use of polished stainless steel troughs lighted from a reflector trough set in front of the fixture. Lamps are offset in adjoining reflector troughs to achieve the effect of pyramided columns of light.

Show windows in this modern store are trimmed in black, framed in white metal, furred with wood, and

The Interior of a Typical Modern Store Building Reveals Beautiful Lighting Effects and Soft Color Schemes that Are Carried Out in Combination with Materials.

Display Alcoves, Built Into the Store’s Interior, Are Used to Display Large Units Such as Ranges and Refrigerators and Release Valuable Floor Space for Showcases.
paned with ¾-inch plate glass. They are at least seven feet deep to accommodate such large display units as ranges and refrigerators.

What price the modern store building? Cost considerations must necessarily also take into consideration the size of the store. In standardizing their formula for the modern store building, Bley & Lyman, the architects, divide the structures into five sizes, as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Area</th>
<th>Height (Approximate Cubic Contents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4200</td>
<td>37'-2&quot; / 156,000</td>
</tr>
<tr>
<td>B</td>
<td>3360</td>
<td>36'-8&quot; / 123,000</td>
</tr>
<tr>
<td>C</td>
<td>2984</td>
<td>36'-2&quot; / 94,000</td>
</tr>
<tr>
<td>D</td>
<td>1872</td>
<td>24'-8&quot; / 45,000</td>
</tr>
<tr>
<td>E</td>
<td>1224</td>
<td>23'-8&quot; / 29,000</td>
</tr>
</tbody>
</table>

Based on building costs in August, 1931, the following tables record construction costs of these modern store buildings:

<table>
<thead>
<tr>
<th>TRADES</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Work</td>
<td>$64,800</td>
<td>$50,900</td>
<td>$39,500</td>
<td>$27,800</td>
<td>$18,000</td>
</tr>
<tr>
<td>Plumbing and Heating Work</td>
<td>$6,500</td>
<td>$5,200</td>
<td>$4,400</td>
<td>$4,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>Electric Work</td>
<td>5,000</td>
<td>4,900</td>
<td>3,800</td>
<td>3,600</td>
<td>2,480</td>
</tr>
<tr>
<td>Elevator and Doors</td>
<td>3,000</td>
<td>2,800</td>
<td>2,380</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Exterior and Interior Light Fixtures</td>
<td>6,000</td>
<td>5,000</td>
<td>3,500</td>
<td>2,000</td>
<td>1,000</td>
</tr>
<tr>
<td>TOTAL SEPARATE CONTRACTS</td>
<td>$21,000</td>
<td>$17,900</td>
<td>$14,080</td>
<td>$9,900</td>
<td>$6,780</td>
</tr>
<tr>
<td>TOTAL ESTIMATED COST OF BUILDING</td>
<td>$85,800</td>
<td>$68,800</td>
<td>$53,580</td>
<td>$37,700</td>
<td>$24,780</td>
</tr>
</tbody>
</table>

In general, alterations to existing buildings, to permit adequate and satisfactory display of merchandise and to provide for cashier's counter, demonstration kitchen, salesmen's room, toilets for both sexes, and adequate storage facilities run from $4,500 to $7,500.

The Modern Store at Night Is Illuminated by Vertical Rows of Lights Concealed in Glass Pilasters Framed and Finned with Chrome-plated Brass or Stainless Steel. The terra cotta parapet is fluted to accommodate 150-watt floodlights.
THE HOUSE OF THE MONTH

A Modern Home of 1932 With All The Old Colonial Charm

THE widespread popularity of Colonial homes this year is the result of a nationwide swing back to those styles of design that are full of native charm and which, at the same time, are economical to erect, compact in interior layout, and easily added to when family needs require expansion. The house which we present this month is a good example of the Modern Home of 1932 and represents a very careful selection from a number of different designs. This Colonial cottage was chosen because it most adequately filled all the requirements of attractiveness, faithfulness of design, convenience and compactness of interior layout, and economy of construction. The design as a whole, as well as the details, such as the bay in the front, should be most pleasing to the homeseeker of today. The interior provides just those features, and all the features, that people are looking for this spring, including a dining alcove and downstairs lavatory. The cost analysis of this home shows it to be inexpensive and economical.

WORKING DRAWINGS AND COST ESTIMATES ON FOLLOWING PAGES
**Estimating the Cost of Our "House of the Month"**

By G. William Bailey, Construction Manager, City Housing Corporation, New York

All of the following estimates include only bare costs of field labor and materials actually entering into the construction of a completed house built according to the plans of the April House of the Month. These estimates have been carefully prepared by me in all details and are based upon present labor and material prices within the suburban areas about New York City.

In all of these estimates proper allowance will have to be made to cover fees and permits, liability compensation and fire insurance, field supervision, overhead and profit to suit any particular set of conditions. Exterior grading, walks, driveways and planting have not been included. Quantities of work have been included for most items so that it will be easy for any builder or architect to compute a revised cost to suit any locality or set of conditions.

The various estimates, "A," "B," and "C" refer to detailed specifications listed and explained on the following page.

### Table: Estimates

<table>
<thead>
<tr>
<th>Estimate</th>
<th>A</th>
<th>B</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td><strong>1. EXCAVATIONS</strong></td>
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<td>Approximate Cubic Feet: 25,300 cu. ft.</td>
<td>$10,636.00</td>
<td>$8,792.00</td>
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(For detailed specifications and explanation of estimates see following page)
ON the preceding page is presented the complete cost analysis of the April "House of the Month." There are shown three separate estimates. Between the first and third estimates there is a wide range in cost. This is because Estimate "A" represents the best type of construction and workmanship with a high quality of materials and adequate equipment throughout; it represents the April "House of the Month" as constructed for an owner under an architect's field inspection by a first-class builder. The complete specifications on which this estimate was based are shown below.

This is how the reputable and competent building contractor builds and it is the type of construction which financial institutions must learn to know and sponsor. A builder of this type of house, who has been studying these cost analyses, recently made a comparative analysis of different types of construction on a Colonial house. All of his cubic foot costs ran around 50 cents per cubic foot. Yet right in this man's neighborhood, jerry-built construction can be erected for less than 30 cents per cubic foot. "How can they do it?" is the question he asks and it is one that the honest builder often puts to himself.

To give a comparison of jerry construction costs with those of legitimate construction, Estimate "C" is presented on the preceding page; it shows low prices but the construction behind these prices is to be avoided. From the standard specification printed below, this estimate (C) is an unjustifiable departure. Cheap materials and careless labor have been used, footings have been left out, framing lumber sizes have been reduced, bridging is eliminated, shingles are of poor quality, flooring is of sub-quality, electric outlets are inadequate, the heating system is unsatisfactory, the painting has been skimmed. All along the line, from the start, the construction is fundamentally lacking in substance.

"But," some builders will say, "there is sometimes a happy medium between the high quality, expensive job and cheap construction. I landed a job I'm building and still put up a decent house." This is true. Many builders will be able to make legitimate changes in the standard specifications shown below, reduce costs and still retain quality. How this is done by the reputable speculative builder is shown in Estimate "B." Quantity buying, efficient management and quantity production account for lower costs. There are some changes in specifications such as a 10" poured concrete foundation; No. 3 oak flooring selected for color; fewer electric outlets and fixtures, and a one-pipe low pressure steam system with balanced over-sized piping.

**STANDARD SPECIFICATIONS FOR APRIL "HOUSE OF THE MONTH" (Estimate A)**

**EXCAVATION:** Earth assumed 6'6" deep.

**FOUNDATION:** 12" Concrete blocks. 12" poured concrete footings. Blocks waterproofed outside with mastic trowel coat and inside with hydraulic cement full height. Basement frames and sills pointed and caulked.

**FRAMING:** 4"x6" sills and corner posts. Exterior and interior 2"x4" studs, 16" centers, doubled around all openings, bridged at least once in height. 6"x8" Y.P. girders. 2"x10" and 2"x8" floor joists, 16" centers, double bridged with 1/4"x3". 2"x8" second floor ceiling beams, 16" centers and bridged. 2"x6" roof rafters, 16" centers, framed to 2" ridges and collar beam all trim throughout grounded. 4" thick dry fill or tuck-in insulation, or board insulation.

**EXTERIOR WALLS:** 24" first quality red cedar shake shingles dipped in creosote stain to paint, laid irregular. Lapped waterproof paper over 3/4"x8" N.C. pine shiplapped siding laid diagonally.

**ROOFING:** 18" first quality red cedar shingles dipped in brown creosote stain laid 4 1/2" to weather over 1"x2" lath.

**GUTTERS, LEADERS, AND FLASHINGS:** Metal gutters. 16 oz. copper leaders and flashings at chimney, over louvre frames, steps, and base flashings at porches.


**EXTERIOR TRIM:** Cypress or best quality clear white pine. Upward-acting type garage door.

**INTERIOR FINISH:** Knotty pine trim natural finish, in living room, entrance hall, dining room, and dining alcove. Doors to match. Whitewood trim in all other rooms with birch 6-panel doors stained or painted.

**PLUMBING:** 54" double porcelain wash tray in cellar with connections for water and drainage for washing machine. Stainless colored plumbing fixtures with chromium plated fittings. Storage gas water heater—30 gallon capacity connected to indirect heater for winter use. Shut-off valves on all fixtures and risers. Outside hose bibs.

**HEATING:** Hot water system. Oil burning boiler with oil burner—275 gallon inside tank equipment.

**ELECTRIC WORK:** Bx armored cable, oversided house service, no fuse circuit breakers, door bells, two radio outlets with built-in aerial.

**EXTERIOR PAINTING:** Three (3) coats of genuine lead and pure linseed oil. Shingles painted dull white—shutters, aluminum wire for all sash, doors and porch enclosure. All windows and doors weather-stripped. Wide brass saddles for exterior doors.

**DECORATING:** Woodwork in living room, entrance hall dining room, and dining alcove finished natural and waxed. Three (3) coats oil paint and enamel finish on whitewood trim in other rooms. White coat plaster in all rooms painted 3 coats lead and oil paint stippled or wall papered. Ceilings kalsomined. Oak floors to receive 3 coats of floor wax. Cement plastered garage walls and ceiling painted.

**LAVATORY:** Two-toned colored faience tile floor and base. White coat plastered walls painted or papered in washable fabric.

**BATHROOM:** Two-toned colored faience tile floor and base. White coat plastered walls painted or papered in washable fabric.

**BASEMENT:** Floor and walls and all piping painted.

**EQUIPMENT:** 1/4" cypress screens, bronze copper or aluminum wire for all sash, doors and porch enclosure. All windows and doors weather-stripped. Wide brass saddles for exterior doors.
A complete set of drawings of the House of the Month is here presented in compact form. In addition to the usual section, construction details of sill and plate are shown. Note that the scale is 1/16" to the foot.
These floor plans of the House of the Month reveal a well-planned interior. The grouping around the central hall is nicely carried out and upstairs there is included a large storage space in addition to the three bedrooms and bath.
Model 1932 Interiors

Bookcases and fireplaces such as these form the centers of interest of houses of today. On the next three pages are other interiors that will add salability to 1932 homes.

1—Corner fireplace with tile treatment; A. C. Leonard, builder. 2—Interesting paneling is backing for fireplace; Janss Investment Co., builders. 3—Simple fireplace and bookcase treatment, Paul Williams, architect. 4—Fine Colonial interior with careful wood detailing. 5—A friendly corner detail of fireplace, door and bookcase; C. E. McFayden, builder.
The New Kitchens

**SIZE.** recommended minimum is 6'6'' x 8'. Other popular sizes are 6'6'' x 10'6'', 7' x 12', 7' x 8'. Height of sink, 34''. Drainboard at left, or on both sides of sink. Stove, table, sink to be closely grouped.

**FLOORS,** to be of linoleum, cork, rubber or composition supported by resilient mat. Must be quiet, durable, comfortable.

**WIRING,** must be thorough, including outlets at table height near refrigerator, cabinet, ironing board, work table. Lights above sink, work table and in center of room. Outlets for clock, fan, dishwasher.

**EQUIPMENT AND SPECIALTIES,** should include modern gas or electric range, oven regulator, telephone, electric fan, broom closet, ironing board, incinerator, package receiver, dishwashing sink, mixing faucet, two kitchen cabinets, automatic refrigerator, breakfast nook, safety rear door, storage and vegetable bins, electric clock, concealed radiator.
Bathrooms for 1932

SIZE, recommended minimum is 5' x 5' for single entry room, 5' x 7' for between two rooms, 4'6" x 7' for rectangular; 4' x 9' for narrowest possible arrangement. Outside window, adequate heat, colorful interior are important.

LIGHTING, should be especially good, with adjustable light fixture on either side of mirror. Several outlets at table height needed for electrical devices used in bathroom. Door switch is recommended.

EQUIPMENT AND SPECIALTIES, should include fixtures in colors, shower, special shower curtains or shower stall, medicine cabinet with mirror, towel and linen cabinet, towel bars, soap holder, paper holder, improved toilet seat, adequate water controls, tile floor and walls, hooks, swinging cabinet on back of door, concealed or recessed radiators.

TWO bathrooms are recommended for the modern home. The added sales appeal of the extra bathroom is large and usually justifies extra cost.

1—Attractive faience-colored tile bathroom. 2—Compact arrangement with recessed shower, old ivory fixtures, blue tile floor. 3—Well lighted, well planned room; note outlet near cabinet. 4—Dressing table lavatory, octagonal chromium fixtures. 5—Recessed mirror with indirect lighting and convenient electric switch and plug.
HOW TO MAKE DRY BASEMENTS

BASEMENTS of 1932 homes must be dry. The growing use of this formerly wasted space for recreational and business purposes makes dryness a necessity.

Modern homes tend to be more compact, better planned and with every inch of space usable and livable. There is no room in a modern home for a basement that, because of unsightliness or dampness, cannot be used just as any other part of the house.

The subject of dry basements has been discussed for many years, but even to this day a great many active builders neglect the obvious necessities they should practice to secure a dry basement.

Because of the excellent quality obtainable in concrete by use of modern materials and modern scientific methods, dry watertight basements are so easy to produce that is is criminal neglect for any other kind to be allowed to slip by. Monolithic concrete produces the driest and best basements at reasonable cost. The secret of success lies in making the concrete thoroughly waterproof by use of waterproofed cement or good standard portland cement to which an integral waterproofing compound has been added.

Integral waterproofing compounds in the form of powder or paste are easy to secure, reasonable in cost and easy to use. They are mixed, in proper proportion recommended by the manufacturers, with standard portland cement on the job, and they produce a concrete that is thoroughly impervious to water.

It is now possible to secure also a highly satisfactory waterproofed portland cement into which the proper amount of integral waterproofing compound has been added.

Integral waterproofing compounds in the form of powder or paste are easy to secure, reasonable in cost and easy to use. They are mixed, in proper proportion recommended by the manufacturers, with standard portland cement on the job, and they produce a concrete that is thoroughly impervious to water.

A good basement must start out with a satisfactory concrete footing. Where the footing is placed on soft or uneven subsoil, it may settle unless properly reinforced and produce cracks in the basement wall. An adequate footing, adequately strengthened with reinforcing rods, is therefore recommended as the first step in securing a dry basement.

A good standard mix for residential basements is 1 part of waterproofed cement to 2 of clean, hard sand and 4 parts of coarse aggregate. Just enough water should be used in mixing to obtain a plastic, workable consistency which can be economically placed. An excess of water should be avoided.

Concrete should be thoroughly spaded into place well around reinforcing steel and against the forms, so as to secure maximum density by forcing out air and breaking up water and stone pockets, preventing honeycombed places.

Where two-course basement floors are to be used the slab should be thick enough and sufficiently reinforced to resist the upward pressure of any water that may gather under the floors. Concrete should be no leaner than a 1:2:4 proportion, mixed with a minimum amount of water and properly placed upon a well tamped cinder or rock fill which has been saturated before the concrete is poured.

Whether the 1-inch or 2-inch finished topping of a two-course floor should be waterproofed will depend upon the use the floor will have. Oftentimes it is sufficient to waterproof only the slab.

Richer mixes should be used where greater strength is required or where the exposure to water is quite severe such as sea water work, swimming pools, tanks or reservoirs.

Placing of drain tiles around the outside of foundation walls to take off water is an important item and should not be neglected. However, such tiles should connect with an adequate drain that will carry the water off, or their effectiveness is lost.

Gutters and leaders should not be placed so that they pour water during heavy rainstorms upon earth close to the basement wall. Care should be taken to see that leader drains connect to an adequate drainage system which discharges into the roadway or to a storm water drain.

How to make an old leaky cellar watertight will be told in the May Builder—The Editor.
Inexpensive Wood Paneling Construction

By W. E. Griffie

Development of plywood and other new materials has greatly increased interest in paneling so that it plays an important part in the homes of 1932. Paneling may be applied in several ways, the most economical being directly to wood stud walls and partitions. Application over matched boards is recommended for greater insulation.

Erection of grounds and furring for a base to nail paneling to and bring wall out to line is first step. Time spent in setting the grounds so that they are in perfect alignment will be saved several times over when the stiles, rails, and moldings are being fitted. Strips used for grounds and furring should be of 1 x 4 lumber, applied horizontally, and spaced according to the location of the rails in the paneling.

If plastering is to be used and the location and design of the paneling is determined before the room is plastered the strips can be applied directly to the stud or masonry with the plastering coming out almost flush with their surface. If the stripping is to be done over plaster the strips should be the same thickness as the door and window casings. Then the stiles of the paneling can be lapped over the outer edges of the casings, and the joints finished with or without a cove molding as desired. This construction is shown in Figure 5. Figure 6 shows a section, below the cap, of paneling applied over lumber sheathing.

When the strips have been nailed directly to the stud the plywood panels can be laid right up to the door and window casings, and the joints finished with the same molding which is used on the stiles and rails of the rest of the paneling.

The stiles and rails may be laid out either before or after the panels are applied, as shown in Figures 1, 2 and 3. The construction shown in Figures 1 and 2 is to be preferred as it allows the panels to swell or shrink slightly without distortion. Application of stiles and rails over the paneling, as in Figure 3, is recommended only for large panels which are to be nailed directly to the stud. The omission of sheathing or plaster is poor economy except in warm climates or cheaply constructed summer homes. In such cases the panels should be laid over a good grade of building paper to protect them from moisture.

A raised molding with a shallow lip at the point where it meets the panel is shown in Figure 1. This is particularly desirable when a paint or enamel finish is to be used as it conceals the line which may show if painted paneling shrinks and opens up slightly.

Plain butt joints between the stiles and rails will stay in place if the lumber is dry and the joints are tightly fitted, though lapped joints are better. The latter are considerably more expensive to cut and fit, however. Nailing should be done so that the nails will be covered by the moldings. This is easy when raised moldings like those in Figures 1 and 2 are used.

After the framing has been nailed on, the panels are cut to fit loosely in the openings. The panels should be cut about 3/8" smaller in width and height than the openings so that slight expansion of the framing or panels will not cause buckling. For the same reason it is desirable to stain and fill the panels before they are fastened in so that shrinkage will not expose un-
finished lines along the moldings. Perhaps the stock panels can be stained on the front and primed on the back before they are delivered to the job or cut to size. Staining at that time may cost a little more than it would later but is apt to help the looks of the finished paneling considerably.

Moldings are mitered at the corners and nailed to the stiles and rails, not to the panels. The panels are held flat so that they cannot warp but are not secured to the framing by any nails. The use of moldings rather than moulded stiles and rails which must be coped into each other cuts the labor cost considerably.

Figure 4 shows a section through skeleton paneling made by nailing framing to the plaster and moulding the opening thus formed. A flush rather than a raised molding is used so that it will fit the irregularities in the plaster. Canvas is pasted to the walls before the paneling is applied to conceal any future plaster cracks and to provide a good base for decorations.

One of the most important precautions to take in building paneling on the job is to see that the walls and lumber are well dried so that swelling and shrinking caused by changes in the moisture content of the lumber will not cause the joints to open up. If the paneling is being put in a new building it will pay to prime the backs of panels and strips with a heavy coat of lead and oil or, better yet, an aluminum primer made by stirring two pounds of “varnish grade” aluminum bronze powder in a gallon of gloss oil. Careful protection from excess moisture will often mean the difference between really beautiful paneling and paneling which discourages a second glance.

**Advance Made in Improved Wall Construction**

NEW materials—and improvement in the uses of old—have done much to improve wall construction of residences. Among these improvements may be mentioned increased use of braced frame, of structural insulation or wall board, of water proofed concrete masonry, better stucco and brick, and the new type steel reinforced walls.

Included in the last named is one that has made considerable progress during the past year which is known as the super-wall system, based on the use of a reinforced 2" x 2" electric welded wire mesh backed with heavy paper or insulation. This combination of wire and backing is nailed directly to studs as shown in the accompanying illustration. The stucco wall thus produced is very strong and permanent. The system is equally adaptable to brick veneer construction.

In this type of wall, plaster is laid on a reinforced 2" x 2" electric welded wire mesh backed with paper. The framework of the house is thus completely encased in a network of steel. This wall provides great structural strength, is water proof, fire and vermin proof. It provides also thorough insulation and sound deadening.

The quantity of rustproof nails required is small and the extra cost low. For an average seven room house it is estimated that 200 pounds will cover all the various requirements at an extra cost not to exceed $5.00. They save their cost many times over.

**Rustproof Nails Important in Homes**

AMONG the outstanding new and improved nails now being offered builders are the zinc coated type, cut iron nails, aluminum nails and special non-splitting nails.

Rustproof nails, if used on the 1932 home wherever severe exposure is encountered, will reduce its upkeep cost over the years and free it from those unsightly rust streaks which give the appearance of cheapness and shoddy construction.

However, for new work it is better to place the studding back before they are delivered to the job or cut to size. Staining at that time may cost a little more than it would later but is apt to help the looks of the finished paneling considerably.

视角的新型建筑构造，显示如何在两侧铺设加强钢构。这种构造具有极大的结构强度，是水、火和虫害的防护。它还提供了全面的隔热和隔音效果。

锈蚀的钉子，如果用于1932年的房屋，无论在何处受到严重暴露，都将降低其维护成本，并使其免于那些令人不快的锈蚀痕迹，这些痕迹会破坏房屋的廉价外观和质量。

重要的是，锈蚀钉子的需求量很小，且额外成本很低。对于一个平均七间房的房屋，估计200磅的钉子将覆盖所有这些要求，额外成本不超过$5.00。它们在使用过程中可以节省很多成本。

**FOR APPLYING THE ROOF**—A roof cannot last longer than the nails which hold it in place. Rusty nails not only destroy themselves but also rot and destroy the shingles and roofing around the nail holes. The holes enlarge and here and there a shingle is lifted over the nail head. Then the roof is gone—it leaks and must be repaired. Ordinary nails will shorten the life of a roof. But rustproof nails will greatly increase the life of a roof. Nails heavily coated with zinc are not only everlasting in themselves but preserve the shingles or roofing around the nail holes due to the chemical effect of the zinc.

**FOR NAILING WOOD SIDING, SHINGLE SIDEWALLS, EXTERIOR TRIM, ETC.—**On many homes now in existence, the siding, the shingle side walls and other exterior carpentry work is rust streaked and loose because of rusty nails. This condition reduces the re-sale value of a home because it gives the general appearance of cheapness. And it places a repair burden on the owner who may impair his financing.
Rustproof nails can be used at very little extra cost for siding, shingles, mouldings, casings, metal corners, porch floors and trim, lattice work, garage doors, etc. Sash and door companies will also assemble millwork with rustproof nails and dowels upon request.

FOR NAILING METAL LATH—Cracked stucco and pebble dash exteriors are often the result of using rustable nails to apply the metal lath. Moisture soaks through the stucco in long periods of wet weather and, having no quick means of evaporating, attacks the nails and weakens them. Then the combined weight of the lath and stucco, estimated at 7 to 10 pounds per nail, is sufficient to bend or break the nails. The lath then sags and the stucco cracks. Rustproof nails, the extra large head kind, are permanent and quick to use, both for exterior and interior metal lath.

Generally speaking, rust resisting nails fall into two classifications: First, those made entirely from some rust resisting metal such as copper, zinc or aluminum, or wrought iron; Second, those made from iron or steel and then coated on the outside with some rust resisting metal such as zinc.

Solid copper and solid zinc nails require no explanation. But when choosing a coated nail it is well to remember that the length of time a coated nail will resist rust depends upon the amount of coating on it, the kind of coating on it, and the character (meaning density, etc.) of the coating. It is well therefore to select a good grade having a heavy and satisfactory coating.

The Red Cedar Shingle Bureau of Seattle, Washington, has just completed a very thorough study of coated nails and solid-metal nails. Their recommendation is:

"Numerous experiments have conclusively proven the wisdom and economy of high grade nails; and maximum service may be assured by using hot-dipped zinc coated cut nails and hot-dipped zinc coated steel and copper nails and pure copper or zinc nails."

Rustproof nails are only one of the many ways to reduce the upkeep cost and to maintain the good appearance of the 1932 home. They have the very great advantage of doing a large amount of good at low cost. The cut iron nail is playing an increasingly important part in building. It is especially popular for floor work. As a cut nail is driven it cuts and depresses the fibers of the wood, automatically locking itself with the greatest possible tenacity. A cylindrical shape when driven into the wood spreads rather than cuts the fibers and makes for itself an aperture the diameter of which is the same at the top as at the bottom. Under expansion and contraction stresses wire nails will work loose, their heads will protrude and being composed of less metal than the cut nail of the same pennyweight, they are less rigid and less apt to penetrate hard or semi-hard woods.

Homes Need Bigger Better Equipped Garages

The 1932 home needs the best kind of a garage possible under modern construction methods and using the modern equipment available. This is one feature that in the past has been greatly neglected. The house with an adequate 2-car garage has a sales appeal and a selling value of increased extent.

Greatest improvement during the past year has been made in garage doors. The old fashioned door that took several people a long time to open, and that never could be opened after a snow storm is being replaced.

Among the requirements of these new garage doors are included: to stay in any position placed; to operate quickly and easily; not to wedge or jam in ice or snow; must fit tightly at top, sides and bottom; must not twist, pull or sag out of shape; must not occupy valuable floor space; must provide adequately wide opening; may be locked or unlocked from either side; those upward acting to be counterbalanced or weighted to move easily in all positions; must harmonize architecturally.

A push of the button and the garage door quietly and quickly opens.
Extensive Wiring Demanded by 1932 Electrical Homes

If electrical developments of the coming ten years are as rapid and revolutionary as those of the past decade, wiring requirements of houses will be greatly affected. Builders must therefore not only take care of the extensive needs of the present but plan for the future.

Great advance in concealed, indirect and tube lighting is to be expected. A host of new types of equipment and electrical devices are forecast.

One recent invention of much importance is the automatic circuit breaker unit intended to replace fuses and fuse plugs. It will eliminate inconvenience and a danger that has long been a menace.

A survey by the President’s Conference on Home Building shows that most houses are inadequately wired. Overloading of circuits is common, as is shortage of convenience, lighting and switch outlets.

Cost data on wiring were assembled during the survey. The following average costs are suggested.

<table>
<thead>
<tr>
<th>Per Cent of Structure Cost for Wiring Installation and</th>
<th>Average Cost per Outlet</th>
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<tbody>
<tr>
<td>Living Room. One ceiling outlet, controlled from at</td>
<td>$3.75 2.3% $2.85 2.6% $2.72</td>
</tr>
<tr>
<td>doorways. Rooms having two important doorways more</td>
<td></td>
</tr>
<tr>
<td>than 10 feet apart require two switches controlling</td>
<td></td>
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<tr>
<td>the ceiling lights; one at each doorway. Unusually</td>
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<tr>
<td>large rooms whose length is more than one and one-</td>
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<tr>
<td>half times the width are equipped with two ceiling</td>
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<tr>
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<tr>
<td>is some very specific reason for doing so, it is usually advisable to</td>
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Greater advance planning, in which all possible electrical needs of the family are considered, is recommended. Suggested placing and planning of outlets follow.

Front Entrance. Two side outlets wherever architectural arrangement permits the use of two lighting fixtures; otherwise one side or ceiling outlet. In the case of a single side outlet it is desirable to place it on the door-opening side. One single-pole switch for operating the lights. One or more convenience outlets, switch controlled. Also one outlet for an illuminated house number with its own switch control.

Entrance Hall. One ceiling outlet and one switch. If this is the only outlet in the ceiling of hall, a second switch to operate this outlet is to be placed in the second floor hall. At least one convenience outlet for 12 feet of baseboard for portable lamps, vacuum cleaner, floor polisher, etc.

Living Room. One ceiling outlet, controlled from at least one wall switch. Rooms having two important doorways more than 10 feet apart require two switches controlling the ceiling lights; one at each doorway. Unusually large rooms whose length is more than one and one-half times the width are equipped with two ceiling outlets. Wall brackets are primarily decorative-unless semi-indirect or indirect lighting fixtures are to be used. Brackets usually create the most pleasing appearance when used in balanced pairs. Unless there is some very specific reason for doing so, it is usually advisable to

How a thoroughly modern electric home should be wired. Note complete basement and laundry installation, adequate number of new type two-circuit receptacles permitting individual as well as central switch lighting. Also radio plugs, electric clock hangar, fan and refrigerator outlet, garage wiring, etc.
keep wall brackets off of the center of wall spaces, for their monopoly of these positions usually interferes with the placing of furniture, pictures and hangings. It is advisable to have wall brackets collectively connected to a single wall switch. Convenience outlets should be located approximately every 12 feet apart, and to provide for radio sets, telephone tables, small tables, etc., at least one outlet should be provided in every wall space 3 feet or more in length. An outlet in the mantel is highly desirable for the electric clock, picture lighting, decorative mantel lamps or light ornaments.

**Dining Room.** One ceiling outlet, preferably with two circuits for multiple lighting effect fixtures. Rooms having two doorways more than 10 feet apart require switches at both doorways for controlling the central fixture. A minimum of two convenience outlets is recommended (an outlet in the floor may be considered as one of the two outlets) plus outlets for each additional wall space adaptable to the use of buffet or serving table. As in the case of the living room, wall-bracket fixtures are primarily for decorative or secondary lighting. Their use cannot be relied upon to replace the center fixtures unless the brackets selected are semi-indirect or indirect types.

**Breakfast Room.** One ceiling outlet placed over the center of the table operated by a single wall switch. When the breakfast room is located between two rooms and two doors occur, switches at each of these doors controlling the ceiling fixture are recommended when the doors are more than 10 feet apart. At least one convenience outlet is required. In rooms where the table is placed against the walls this outlet would be immediately above the table and in this wall.

**Kitchen.** One ceiling outlet for average kitchens; long narrow kitchens require two. Kitchens having two important doorways more than 10 feet apart require wall switches at each of these doorways controlling the ceiling outlet. Where there are more than two important doorways all separated by 10 feet or more, additional switches are installed at these doors for the control of the ceiling fixture. Ceiling outlets or brackets over work spaces and storage spaces are important for the lighting of these areas. These outlets are controlled by wall switches or pull chain switches. Convenience outlets at sink, ironing board and other work areas. These are usually placed 3 to 4 feet above the floor. Convenience outlets for refrigerator, electric clock, dishwasher, and ventilating fan are also of first importance.

**Hallways and passageways** require at least one ceiling outlet. The placing of outlets for the lighting of stairways at both the bottom and top ends should be borne in mind. Additional outlets for every 15 feet of length of hall or passageway should be provided. Wall switches for these outlets so that passage can be made with light shed at all times and also so that lights behind can be turned off without retracing steps to do so are important. Doorways more than 10 feet apart should have switches located at them for the controlling of hall lights.

**Bedrooms** require one ceiling light controlled by one wall switch. Provide one convenience outlet for every 12 feet of baseboard and not more than 12 feet apart.

**Bathrooms.** One ceiling outlet plus two wall outlets, one on each side of the mirror. The wall outlets at the mirror are to be approximately 60 inches above the floor. Two wall switches at the entrance door are to be provided; one for controlling the ceiling outlet and the other the wall outlets at the mirror. Shower stalls and recessed bathtub alcoves require ceiling outlets. The wall switches for the control of these outlets should be outside of the shower or tub compartment. An outlet for a built-in bathroom air-heater should be considered. A convenience outlet, 3 to 4 feet above the floor and to the right of the washstand should be included, where its installation is in accord with local ordinance.

**Closets** in practically every case require an outlet in the ceiling or over the doorway. Exceptions are primarily those where the closet is extremely shallow. The outlet may be controlled by a pull chain switch or automatic door switch.

**Basement** requirements are met by placing ceiling outlets at the foot of the steps, controlled by a wall switch at the head of the steps; ceiling outlets in each enclosed space such as the coal room, fruit, storage space, etc., controlled by wall switches at the entrance doors to these spaces or by pull chain switches when the outlets are within easy reach of the door; a single outlet in the ceiling about 3 feet from the wall over the work bench. If work benches are over 6 feet long, two such outlets are recommended. Outlets for heat regulating devices, for a trouble lamp, bell-ringing transformer, for oil-burning furnaces, at the work bench for the electric soldering iron or glue-pot are all points of the installation to be considered.

**Laundry or laundry section** requires one ceiling outlet directly over the laundry trays, also one ceiling outlet or convenience outlet for the ironer. One ceiling outlet 3 feet in front of the center of laundry trays for clothes washer. This outlet should be equipped with a pendant type receptacle hung 5½ feet from the floor. One convenience outlet on a separate circuit of No. 12B and S gauge for heavier devices.

**Garage** requirements consist of one ceiling outlet over hood of car and one ceiling outlet at the rear of car controlled by wall switch at garage doors. In the case of double garages, one ceiling outlet over the hood of each car and one between and at the rear of the cars. One lighting outlet on the exterior of the garage with controlling wall switch at the garage entrance door and a second controlling switch at some point in the house, usually the kitchen. One convenience outlet on the center of the rear wall, 4 feet above the floor.
Power Equipment Plays Important Role In Cutting Construction Costs

New hand saws are light but powerful and speed work such as this to a high degree.

One of the important recommendations of the recent President's Conference on Home Building was that contractors study costs and results of use of labor saving equipment. "Contrary to general opinion," it was reported, "portable forms, ready-mixed concrete, plaster mixers, power drills, paint spraying equipment, etc., are used comparatively little."

This was unfortunately too true at the time but it seems hardly possible that it is a condition that can continue into the future. To compete in the building market of 1932, extensive use of cost cutting, labor saving machinery cannot be avoided.

Recent improvements and developments in contractor's equipment have been extensive. Many new models of electric saws, sanders, drills, paint sprays and earth handling and hauling equipment have been announced.

There is a tendency toward fewer moving or breakable parts, greater ruggedness and strength, improved efficiency, speed, and, of high importance, lower costs.

Greatest improvements are shown in hand, table and portable saws, light weight sanding machines, and motor trucks. Some other new developments include electric hole cutters, or hole saws; complete compact home workshops that make the builder able to extend his activities during winter; lines of "unbreakable" hand tools, improved material lifts.

New combination power tools which are light and powerful and may be put to a variety of purposes with different attachments are important.

Interviews with builders who use or have used power...
At left—advance in excavating and earth hauling equipment has been great. At right—using a hand power saw to cut tile quickly and accurately.

equipment are illuminating. A New Jersey contractor moved 185 yards of dirt per day at an average cost of 26 cents. A Chicago builder reports a saving of $68 per day through using an electric saw; he also used an electric plane which permitted fitting and hanging 18 doors in 8 hours. By using an electric mortiser he cut 48 lock mortises in three hours, or a saving of 64 cents per lock. Another builder who put up 12 houses and four factories in a year estimated his saving through use of a power saw at $2,000. Such figures as these merely re-emphasize the fact that savings can be achieved.

A field in which great technical progress has been made and which offers unexplored opportunities is that of sanding equipment. Probably no branch of craftsman's work is as little developed and encouraged as that most important one—the resurfacing and refinishing of old floors. An educational program to develop this field is needed. It is suggested that to further this business a more extensive rental service be built up by painters, paint dealers, lumber dealers and professional floor surface companies. The new machines, being light enough to make transportation easy, favor this development.

Notching joists for conduits with an electric hand saw.

Above—electric drills and hammers are constantly useful. At left—how one contractor cuts costs with a tractor.
PRACTICAL JOB POINTERS

A reader's exchange of tested ideas and methods, taken from their own building experience. Two dollars will be paid for each contribution published in this department.

Makes a tight window

A HARDWOOD weatherstrip which has proven very effective in making wood casement windows weathertight is detailed herewith. It is set into the sash so as to touch the back of a plow in the frame, the plow being enough wider than the strip so as to provide space on each side in which air can circulate. Wind-driven rain will not penetrate past this strip because the moving air which gets to the space around it is caused to whirl backwards. The hinged side of the sash should have the strip set in the center of the sash as shown in Figure 1. The other three sides should be made as shown in Figures 2 and 3. Application of the weatherstrip to a new narrow-stile type of sash with dove-tailed corner construction developed by the millwork specialists of the West Coast Lumbermen's Association is shown.—S. H. Evans, 404 E. Howell, Seattle, Wash.

Panel drop ceiling for attic

W HEN one desires to have an extra room or two in the attic and has not sufficient head room to allow an 8 ft. ceiling without breaking into the wall surface, a good suggestion is to place beams below the tie beams, and at even or regular intervals. Place 2" by 4" beams (on spans less than 8'-0" or 2"x6" on spans 8'-0" to 10 ft.) endwise, so that the bottom will be the underside of the ceiling beam. Place each beam exactly 16 1/4" apart or between beams, so that the ceiling panels, (which are made of wall board) may be cut from a 48 inch unit. Cutting it into 3 equal parts, you will have each piece 16 inches by 8 ft. long. Nail the moulding, forming the panel at the bottom edge of the ceiling beam, so as to form the under side of the panel, then drop the 16" panel into place. It will be supported by the moulding as shown in illustration. The same operation is done for each panel and when complete the ceiling will have a series of panels 16" wide and 8 ft. or 9 ft. long. There are many pleasing effects which may be had by using different types of mouldings. A good moulding to use is one having a fillet then an ogee. If a soffit effect is desired, then nail a strip of wood ¼ inch thick and 2 inches wide directly on the ceiling beam and then apply the moulding.—W. F. Reutter, 524 Kipp, Teaneck, N. J.
From a carpenter's wife

AM a carpenter's daughter; also a carpenter's wife, and I am sending an idea I have used for years. Simply sew on two buttons, good and strong, to the carpenter's apron. To these attach the straps from an old pair of suspenders. This makes a really strong place for the hammer to go and it will outlast the apron. Perhaps bachelor readers can get their sweethearts to do this for them.—CELINA GARDNER, Stony Creek, N. Y.

Simple aid in lock-setting

THAT necessity is the mother of invention, seems to prove itself in the discovery that a useful and inexpensive tool may be made from an automobile spring. Take a thin leaf, 18 inches long 2 inches wide, with an arch of 1 1/4 inches. Square and thin it at the end. To hold the door steady while setting a lock, place the spring on the floor beside the door. With the weight of the foot, flatten the spring and pull the door over it. When the spring is released, it holds the door fast while the work is being done.

This tool is very helpful in lifting mouldings of all kinds. They never split when so removed. It is also a help in tearing off old wooden shingles.—MYRON FLINTJER, Leavenworth, Kansas.

One lock clothes cabinet

INSTEAD of locking each locker in a clothes cabinet, our firm locks all six to each cabinet with a single lock. This does away with individual keys that are so easily lost. As shown in the illustration, a steel bar is bent and swivelled on an eyebolt at each end. A hasp is placed in the center and when the bar is lifted a padlock locks the whole cabinet.—H. Moore, Hamilton, Ont.

Form for concrete tank

A METHOD of making a form that can be removed easily is shown at the right. The corner studs should be nailed with six penny finishing nails, and the end sections of the form should not be nailed to the corner studs at all. The end sections can be held in place by the interior bracing. The side sections are to be made with a vertical strip one-quarter inch wider than the thickness of the end sections, and tacked to the corner stud (but not to the end section) with just enough small nails to keep it in place. After the form is set up and thoroughly braced, it is ready for concreting.

To fit a curve

IN FITTING flooring to the curve of a bathtub or of a rounded stair riser, a perfect fit may easily be obtained by the following method. To fit board A to curve C: Lay the board several inches away from the curve and engage groove of A with tongue of B. Set compass at any convenient distance D, then scribe line as shown on A. Be careful to hold the compass always in the same plane as the line of the flooring, i. e. both contact points of the compass move simultaneously.—RICHARD B. FOX, Mt. Pleasant, Penna.
Profits in Locally Produced Units

By W. E. DUNN, Veteran Concrete Products Man.

In the thirty years I have been actively engaged in the manufacture of concrete products and production machinery, I have seen no time so favorable as right now for local enterprise to organize itself for the manufacture of masonry units to supply local building requirements.

The community drives for increasing local employment have strengthened the sentiment for trading at home and for using home produced commodities. Lower costs are now more interesting than in the recent boom times, so that the substantial saving in freight and haulage effected by the local production of heavy units is a great advantage. And, finally, the trend toward permanent and fire-safe construction has greatly widened the market for the output of the local products plant.

Many, even among experienced builders, fail to realize the variety and the amount of concrete products that can be utilized in the construction and adornment of the modern home. Recently I checked over the fairly good sized job pictured in the accompanying photograph, and was myself surprised at the total which this job consumed. I have listed the items; they total $2,202 delivered to the site! Their local production gave employment to ten local men for more than a month!

In line with the many community drives to increase local employment, no doubt builders and dealers will be considering the starting of products plants in places that in the past have had to depend on out-of-town materials, shipped in.

In starting a local industry, the essentials are low material cost, suitable local labor, and efficient machinery. All these are available almost everywhere. The primary market is the territory within trucking distance of the plant. Local manufacturing permits direct distribution from yard to job quickly. Large stocks are unnecessary because production can be quickly adjusted to supply any demand.

Local Producer of Heavy Units Has Big Advantage

My advice to any local group considering present-day opportunities is to select a product with a sufficient market—a heavy product in the mason material line. It has outstanding advantages, because a shipped-in product necessarily has freight and handling costs added to it. In local manufacturing this is not the case; you can undersell competition. You also manufacture for less in a small plant—less overhead and contingent expenses—as compared to a big factory. You are able to close all the gaps, as compared to the manufacturer working at a distance.

The perfecting of machinery for making building commodities places the local manufacturer on the same basis as the big producer having a large factory. Moreover, the maintenance of standard quality in his product is under his personal supervision.

The local manufacturing of building commodities will be welcomed by more individuals if they are assured of greater protection among themselves. Equipment manufacturers should provide an arrangement whereby the respective local plants are given protection against the invasion of a competitive manufacturer making the same product. This can nicely be arranged by allotting certain territorial zones where the commodity manufacturer operates. It would mean an outstanding boom to such local manufacturer.

Some may have the mistaken idea that expensive buildings, large space, etc., are necessary to start a local enterprise. I can name many, many plants, now industries of prominence, that started making building commodities locally, having only such facilities as happened to be on their premises. They expanded from earnings. On the other hand, this field of activity is now of such a nature that more pretentious installations of equipment are justified, together with bigger housing facilities.

There is a worth while opportunity for the ambitious man or group of men in every locality in local manufacturing.
LOWEST PRICE IN HISTORY
SIMPLEST SANDER EVER BUILT
STURDY-EFFICIENT-FOOL PROOF

REID-WAY
FLOOR ACE
$9950
CASH

Here, Mr. Profit-Seeker, is the greatest floor sander value ever offered. A price that has never been paralleled—a floor sander that upsets all production and efficiency standards in the light floor sander field.

ONLY ONE MOVING PART
The famous Reid-Way sanding drum motor is used in the Floor Ace. A simple fool-proof unit—so dependable that every machine carries an unqualified 12-months guarantee. It is light enough to be easily carried by one person. Heavy enough to hug the floor. Price is no longer a barrier. Write for specifications and an explanation of our easy purchase plan.

PROFIT IN RENTALS
Twenty to thirty days' rental will pay for a Floor Ace. Every rental customer will require sandpaper, filler, varnish and wax—all sold at a profit. The Reid-Way Floor Ace is so simple a woman can operate it. Sturdy enough to stand the rough handling of rental service. Rental advertising material is furnished free to every purchaser. Don't miss this sure-hit proposition.

THE REID-WAY CORPORATION
2949 FIRST AVENUE
CEDAR RAPIDS, IOWA
Home Loan Bank Bill Making Progress

PROSPECTS for the passage of the home loan mortgage bank bill have revived recently as the result of pressure from the Administration after a period of inaction in Congress which had seemed to forecast a triumph for the opposition.

As reported in last month’s AMERICAN BUILDER AND BUILDING AGE, a sub-committee of the Senate committee on banking and currency had completed hearings on the bill in February and had taken no action toward a report to the full committee, while the House committee had not yet taken up consideration on the bill. But on March ninth, Secretary Lamont held an executive conference with the Senate sub-committee, at which he presented evidence as to the need for the bill, after which Senator Watson, chairman of the sub-committee, stated to the press that the sub-committee was “going to bring out some kind of a home loan bank bill.” Later it was announced that a sub-committee of the House banking committee would conduct independent hearings on the bill.

2,000 Communities Need Housing

Further impetus was given on March 12 when Representative Steagall and the ranking members of the House banking and currency committee of both parties conferred with the president at the White House. The president called to the attention of the members a report just compiled by the department of commerce showing 2,000 communities in need of additional housing, which would benefit by the enactment of the proposed legislation. At the same time the president said, thousands of home owners who have mortgages on their homes will be saved from foreclosures if aided promptly.

With the statement “every day’s delay in the passage of the home loan bank bill means additional homes lost to their owners”, proponents of the bill closed their case March 21 at the House hearing.

Further arguments were presented to show value of the bill. It would stop growing foreclosures, stop rising interest rates for home financing funds. It would check demoralization of home owners, “giving to bring out some kind of a home loan bank bill.”

To Make New Window Device

THE Heintz Manufacturing Company of Philadelphia has announced start of production of a window converter formerly made in Detroit under the name Car-Kra Windoware. The device attaches to new or old double hung windows, providing a tight window that operates up and down smoothly on metal slides and that tilts inward at a touch.

An efficient weatherstrip is included in the installation.

Independent Lock Expands

ANNOUNCEMENT has been made of the purchase by Independent Lock company, Fitchburg, Mass., of the Lockwood Mfg. Co. of Norwalk, Conn. The name “Lockwood” will be retained and full line continued.

Lumber Priming Shows Increase

INCREASED interest in the protection of wood so that it is delivered to the customer with proper moisture content is indicated by the growing use of aluminum paint as a primer, according to recent data issued by Aluminum Company of America.

Among the companies which are utilizing aluminum paint for various patterns of siding and ceiling are:

- Brocks Scelion Corp., Foley, Florida.
- C. A. Mann Lbr. Co., Troy, Ohio.

Lumber firms which are employing aluminum paint for frames, sash, and other miscellaneous items include:

- Keil Corporation, Bayport, Minn.
- Central Lbr. Co., Charlotte, N. C.
- Deer Park Lbr. Co., Deer Park, Wash.
- Frederick Kaiser Co., Philadelphia.
- Gate City Sash & Door Co., Ft. Lauderdale, Fla.
- Mahoney Lbr. Co., Jacksonvile, Fla.
- C. F. Mayruee Planing Mill, Terre Haute, Ind.
- Walter H. Schenk Co., Chicago, Ill.
- Seibert & Kalbuss Co., La Crosse, Wis.
- Spencer Lbr. Co., Gastonia, N. C.
- United Sash & Door Co., Wichita, Kansas.

Originally introduced as a priming coat for siding, the use of aluminum paint is now extended to priming at the mill such items as frames, sash, flooring, trim, etc.

Protection is afforded by a film of aluminum which is opaque to light and stops passage of the harmful ultra-violet rays which cause oxidation.

If left unprotected, lumber does not retain the proper moisture content. By coating all sides with aluminum paint immediately after seasoning, change in moisture content is prevented; in effect, the aluminum film “seals” the lumber, according to the report.
See what GMT offers, before buying new truck equipment

It will pay you to make a new comparison of hauling equipment values before you buy additional units. Welcome the General Motors Truck representative, who is quoting remarkably low prices on trucks and trailers to fit each need. Take advantage of the advisory service he offers, to help you select the types of equipment most economical for your purposes. Consider the extra satisfaction in dealing with one of the world's largest manufacturers devoted exclusively to the production of commercial vehicles. This year, General Motors Truck passes on to you enormous savings made possible by the Company's strategic purchasing power—its great engineering resources—and its up-to-date manufacturing facilities. Be certain to investigate the new General Motors Truck values before you buy trucks or trailers.

GENERAL MOTORS TRUCK CO., PONTIAC, MICH.
(A subsidiary of Yellow Truck & Coach Mfg. Company)

Time Payments Available Through Our Own Y.M.A.C.

Send booklet, "Cutting Distribution Costs with Motor Trucks"

Name ___________________________    Address ___________________________

Business ________________________    Send 20-D
Building Survey Stimulates Work

A drive to stimulate building and modernizing is being carried on by the realty board, chamber of commerce, and building interests of Battle Creek, Michigan. First step was a thorough survey of vacant properties, conducted by teams of workers. This indicated that the city is not unduly overbuilt.

It was shown that in one section of 81 vacant houses listed more than 80 per cent were old and in extremely poor condition.

"Most of the houses that are not rented are poorly located or run down, cheap and out of date," one of the canvassers reported.

Following this survey inspection cards, illustrated above, were made. Owners of vacant houses were then interviewed, the property examined, and needed repairs and improvements listed on the cards.

Owners are urged to carry out recommended improvements, and as each house is reconditioned, an official card is posted on the property stating that it is in good condition and approved by the realty board.

The drive is expected to develop much new building and employment.

Rehabilitation of Philadelphia Slum Areas Is Planned

BUILDERS, architects and realtors of Philadelphia are discussing the rehabilitation of slum areas on a business, as well as a sociological basis, according to recent announcement from that city. Leaders who have been active in considering the matter are Joseph J. Greenberg, member of the City Planning Commission; D. Knickerbocker Boyd, fellow of the American Institute of Architects; and Thomas F. Armstrong, president of the Master Builders and Employers Association.

The construction of large modern apartment buildings of concrete, three to five floors in height, with ramps between floors, is one proposal that has been looked upon with favor. The plan is to acquire a block at a time, then erect the new structure around the perimeter of the block with a large court in the center. It is believed that such apartments could be economically constructed at present material and labor costs for about $1.50 per square foot. With abatements of taxes for a period of years allowed by the municipality, it should be possible to rent such apartments at extremely low rentals yet be able to pay financial backers 6 per cent on their investment, according to sponsors of plan.

New Selling Company

MEDUSA Products Company has been organized as a subsidiary of the Medusa Portland Cement Company and will function as the selling company for Medusa Portland Cement Paint; Medusa Floor Coating and Primer; as well as the entire line of Rust-proof coating and technical paints manufactured by the Studebaker Chemical Company of Elyria, Ohio, for which they will be exclusive distributors. These products include Rust-poxy, Aluminoy, A. W. A. Paint, and a non-penetrating wall size for fresh plaster.

Executive and general offices of the Medusa Products Company will be located at 1002 Engineers Building, Cleveland, Ohio.

Westchester Home Show

The county of Westchester, New York, will hold its second annual home show from April 27 to May 3 in the Westchester County Center building in White Plains, N. Y. The County Society of Architects will display model houses and working drawings. Materials, building products and home equipment of all kinds will be on display.

CURRENT CONSTRUCTION FIGURES

Awards Increased in February

A gain of almost five per cent in construction awards over January was recorded during the month of February. Six territories reporting gains were the Southeastern, Chicago, Central Northwest Kansas City, New Orleans and Texas.

Total construction volume as based on contracts awarded during February continued low however, and were less than in February, 1931.

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Contracts Awarded</th>
<th>Total Volume January</th>
<th>Total Volume February</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York, N. Y.</td>
<td>189,850</td>
<td>$22,734,900</td>
<td>$20,302,850</td>
</tr>
<tr>
<td>Detroit, Mich.</td>
<td>30,195</td>
<td>$3,583,200</td>
<td>$3,190,300</td>
</tr>
<tr>
<td>Cincinnati, Ohio</td>
<td>24,650</td>
<td>$2,925,800</td>
<td>$2,655,800</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>25,675</td>
<td>$2,688,300</td>
<td>$2,624,300</td>
</tr>
<tr>
<td>Austin, Texas</td>
<td>19,850</td>
<td>$1,730,300</td>
<td>$1,649,800</td>
</tr>
<tr>
<td>Dallas, Texas</td>
<td>17,950</td>
<td>$1,583,200</td>
<td>$1,507,200</td>
</tr>
<tr>
<td>Chicago, Ill.</td>
<td>19,950</td>
<td>$1,730,300</td>
<td>$1,649,800</td>
</tr>
<tr>
<td>St. Louis, Mo.</td>
<td>18,950</td>
<td>$1,683,200</td>
<td>$1,593,200</td>
</tr>
<tr>
<td>Minneapolis, Minn.</td>
<td>15,950</td>
<td>$1,383,200</td>
<td>$1,293,200</td>
</tr>
<tr>
<td>Milwaukee, Wis.</td>
<td>13,950</td>
<td>$1,183,200</td>
<td>$1,093,200</td>
</tr>
<tr>
<td>Cincinnati, Ohio</td>
<td>12,950</td>
<td>$1,283,200</td>
<td>$1,193,200</td>
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<tr>
<td>Cleveland, Ohio</td>
<td>11,950</td>
<td>$1,283,200</td>
<td>$1,193,200</td>
</tr>
<tr>
<td>St. Louis, Mo.</td>
<td>10,950</td>
<td>$1,083,200</td>
<td>$993,200</td>
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<tr>
<td>Dallas, Texas</td>
<td>9,950</td>
<td>$883,200</td>
<td>$793,200</td>
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<tr>
<td>St. Louis, Mo.</td>
<td>8,950</td>
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<td>$693,200</td>
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<td>Kansas City, Mo.</td>
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<td>$593,200</td>
</tr>
<tr>
<td>St. Louis, Mo.</td>
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<td>$493,200</td>
</tr>
<tr>
<td>Minneapolis, Minn.</td>
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<td>$483,200</td>
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<tr>
<td>Milwaukee, Wis.</td>
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<tr>
<td>St. Louis, Mo.</td>
<td>1,950</td>
<td>$93,200</td>
<td>$0</td>
</tr>
</tbody>
</table>

OWNER: is urged to modernize according to needs shown.
Free

A demonstration and test of this remarkable new SKILSAW on your own work without charge or obligation. Before you start any work this Spring try new model "S" SKILSAW. We can show you how its amazing performance will mean EXTRA profits for you on every job. Mail this coupon NOW to SKILSAW INC., 3338 Elston Avenue, Chicago.

☐ Yes, I will watch a demonstration.
☐ No, just send me complete information about this Model "S" SKILSAW without obligation.

NAME ____________________________
ADDRESS ____________________________
CITY ____________________________ STATE ____________________________

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
Many 1932 Home Improvements Announced

New Products Give Added Sales Appeal, Better Service from Basement to Attic. For Further Data About These Items Write American Builder Information Exchange, 105 West Adams, Chicago.

DOOR CLOSET—One of the most interesting of the recent products for the modern home is the new storage compartment shown at the right which fits on the back of any door. Made of steel, rigid, attractive, this door closet provides a new place for many special items. In the bathroom, in the kitchen, it is extremely handy. A buffet type provides storage for bottles, foods, etc. Closet fits any door, is 3½ to 4½" deep, 7½" high. It will be a welcome addition to any home, and provides a new note in convenience, neatness and efficiency.

INSULATED STOVE—Gas stoves for the modern home should be selected not on a price but on a quality basis. A fully insulated, beautifully designed and improved gas range adds a tremendous lot to the salability of the house.

A new line of gas ranges has just been announced that is the last word in quality. In the first place these stoves are things of beauty. They are heavily insulated as shown in the accompanying illustration.

Other outstanding features include a new patented non-clog burner of aluminum alloy; a sanitary burner tray that protects against boil-overs; a clever automatic lighter that starts the burner simply by turning on the gas; smooth sanitary oven lining that is easy to keep clean; reversible broiler pan and roaster of heavy enameled ware; efficient oven heat regulator wheel which controls time and temperature—an especially popular feature with housewives.

COPPER PATINA—Considering the many uses to which copper is put in the modern home, this recent discovery will be of great interest to homebuilders as well as contractors handling larger work. The copper industry has solved Nature's mysterious process for giving copper and its alloys the permanent green coloration or patina that is so attractive in long weathered pieces.

Over a long period of time many attempts have been made to duplicate by artificial means the pleasing green patina, without success. Science has triumphed and production methods for commercial utilization of the new treatment are being rapidly developed. The patina produced by the new process is identical with that produced by natural weathering which gives charm to ancient copper roofs, bronze statuary, etc.

DOORS READY TO INSTALL—An outstanding contribution to good homes is a new, permanently finished cabinet-wood veneer door, supplied ready to install. The result of long scientific research, this is a new door using a new principle of veneered door construction and finishing. Exceptional durability is built into it, with many plies firmly welded together under tremendous pressure. It is thus proof against swelling, shrinking, warping or twisting.

High grade, cabinet veneers of mahogany or American walnut are welded to an improved core with a new waterproof cement and given a new finish which is said to be harder than varnish and as smooth as polished glass. The finish is waterproof and proof against heat or sun, acids, alcohol, salt water, etc.

Doors are available in a complete line of standard sizes, designs, woods, and finishes, and are unconditionally guaranteed by the manufacturer.

CLOTHES CLOSET FIXTURES—That important part of the home, the clothes closet, has received needed attention by a firm that has brought out a new line of convenience fixtures intended to meet needs of the modern wardrobe and provide for the tidiness of closets.

The clothes rack shown below is one of seven new devices including a roller bearing clothing carrier which can be pulled out of the closet into the light of the room. Included also are a clever shoe rack that provides a place for shoes to be kept off the floor; a hat rack; a trousers hanger that holds four pairs of trousers at one time and keeps them in press; a hat-holder with twin adjustable arms; and a stationary garment bracket that increases space for handling garments. Fixtures are strongly built, cadmium plated.

This handy door cabinet provides valuable storage space where it is most needed.
A damp or wet basement is unsanitary, unhealthy and practically useless. To prevent wet walls and dampness below and above grade use Medusa Waterproofed Portland Cements for all concrete, mortar and stucco. The cost is negligible. Medusa Waterproofed Portland Cements, white and gray, contain Medusa Waterproofing Powder ground in at the mill. These Waterproofed Portland Cements have been Successful for 22 Years. For full information on waterproofing and damp-proofing old or new basements, write us for the book “How To Make Good Waterproofed Concrete.” It will be sent to you without obligation or cost.

MEDUSA PORTLAND CEMENT COMPANY
1092 Engineers Bldg. Dept. Z Cleveland, Ohio
New and Improved
Devices for Better Homes

CONCEALED RADIATOR — Radiators that are concealed, recessed, or produced in compact, good-looking form, are popular in modern homes. An interesting example of the improved, concealed type is the one shown in the accompanying illustration, which uses an elliptical copper tube in a convector form. This is a feature essential for one-pipe systems.

This radiator can be installed anywhere in the room and may be plastered in or placed under windows, which is a popular location. The illustration shows such an installation, having front grilles, damper, and access door. It is efficient and economical, both as to original cost and upkeep.

The concealed or recessed radiator is a big space saver and a strong selling point in the modern home.

WEATHER-TIGHT WINDOWS — A simple new device that combines the functions of sash-holder and weather stripping is one of the latest specialties for windows. Its manufacturers claim that it permanently eliminates rattles, leaks, or sticking under all weather conditions.

The device consists of three brass strips, one brass parting strip, and a few spring tension screws for each side of the sash. The tension spring screws are adjusted according to the weight of the sash when installed and assure permanently perfect friction control.

It is claimed that swelling and shrinking of sash and frame cannot affect window operation.

Elimination of weight boxes, fuel saving, low cost, and ease of installation in new or old homes are advantages pointed out.

AIR CONDITIONING REGISTER — Now we have registers, intakes and flush frames designed expressly for forced air heating of various kinds. Of pleasing design, these registers have a silent valve control which withstands forced air pressure.

A newly developed operating device holds the louver positive in any desired position or angle.

A special floor register with narrow mesh that will not admit French heels is also provided.
It takes a "whiter" glass to transmit more daylight and Lustraglass is the "whitest" of all glass made for windows.

Tests prove that Lustraglass transmits more daylight. It also transmits ultraviolet sun rays, yet it costs no more than any good window glass.

Lustraglass is a superior product in every respect... flatter, clearer and more lustrous. It offers the contractor an opportunity to add new sales appeal to buildings... Our Lustraglass Booklet—A-430, containing a complete table of ultra-violet ray transmission, should be in your file—Write for it.

The label shown at the left appears on every light of genuine Lustraglass. Lustraglass is packed with paper between the lights to prevent scratching and marring the surface of the glass.

American Window Glass Co.

Also Makers of Armor-lite Scatter-Proof and Bullet-Proof Glass, Tintoglass, Picture Glass, Photographic Dry Plate Glass, *2" and *3" Crystal Sheet, Ground and Chipped Glass and Bulb Edge Glass.

1600 Farmers Bank Building - Pittsburgh, Pa.
The Builder needs Sisalkraft on every job—

1. FOR SHEATHING. Because its unbroken protection thoroughly insulates a house against cold, wind and dust. Because it goes in place with no waste, no rips or holes and with less labor than flimsy paper.

2. FOR FLOORING. Because its toughness and flexibility permit carrying it up under baseboards, providing a complete air and dust stop at the floor line. Because there is no creeping, bulging or tearing when crowding floor boards into place.

3. FOR CONCRETE SLABS. Because it is the one paper that can really protect newly laid floors, sidewalks, drives, etc., against too rapid drying and the consequent cracking and dusting.

Stocked by dealers in rolls 3, 4, 5, 6 and 7 ft. wide. Its almost unbelievable strength and toughness make it ideal for literally hundreds of other uses. Ask your dealer for further information.

THE SISALKRAFT CO.
205 W. Wacker Drive (Canal Station) Chicago, Ill.

Under and Protecting Concrete

Cold air enters double-walled heating chamber through opening at floor level, is heated and returned to room.

New Rolling Screen for Double Hung Windows

A NEW screen that rolls up out of the way and out of sight when not needed has been designed to screen the lower half of double-hung windows. Installed on the outside, the screen is a great improvement over the unsightly home-made frame type of the past and is a welcome addition to the 1932 home. The screen rolls up and down like a window shade. It eliminates difficulties of removing and putting up old-type screens, painting, repairing.

Details of new screen which rolls out of sight like a window-shade. Screens lower half of double-hung windows.

Patented features make these rolling screens thoroughly insect tight. Lugs fastened in the edges of the wire cloth slide in guides that lock the wire at the sides so that there is no sagging or bagging. Screens are rigid and permanent and are guaranteed for ten years.

A floating roller eliminates dragging and wearing of wire cloth on the screen casing. A special feature permits the screens to adjust themselves to swelling or shrinking of the woodwork, insuring easy operation. The wire cloth is reinforced with triple selvages, and will out-live the ten-year guarantee.

Because of its convenience, permanence, and sightliness, this type of screen should be ranked as one of the foremost improvements available for the 1932 home.

GUARANTEED FIRE-PLACE—Because the fire-place plays such an important part in the modern home it must be very good. A correctly-operating and useful fire-place can be assured by the use of a scientifically designed, metal form around which the decorative masonry is built. This is really a complete fire-place, ready to install, and includes correctly-designed fire-box, down draft shelf, damper, and smoke dome. Because it simplifies construction and saves material and labor costs, it is very inexpensive to install.

The outstanding feature of this fire-place is the method with which it circulates heat throughout the room. Heat that was previously wasted is conserved and used. Cold air is drawn from the floor, heated in the double-walled chamber surrounding the fire, and circulated out into the room.

Curing Under and Protecting Concrete

AB4 Gray
Build a
Guaranteed Fireplace
Smokeless Circulates the Heat.

Mail the coupon today and learn how you can guarantee the success of every fireplace you build. And at the same time add to the comfort and selling value of the home.

This new method of fireplace construction is made possible by the Heatilator—a double-walled metal form, around which any style of fireplace can easily be built. This unit takes cold air from the room, passes it around the fire, and sends it out warm and healthful, to circulate over the entire room. Saves furnace operation during cool spring and fall weather. Only heat required for homes in mild climates. Ideal for summer cottages, cabins and camps.

A perfect fireplace is guaranteed; there will be no disappointments, no smoking with the scientifically constructed Heatilator. The small additional investment is offset by savings in labor, materials, and fuel. We'll gladly send you full details of this modern fireplace. Just fill in and mail the coupon today.

THE HEATILATOR CO., 634 East Brighton Ave., Syracuse, N.Y.

Jobs come easier with this profit-making material!

... It gives your remodeling and new building jobs 2 times the VALUE of common "insulated" construction

WANT to cash in on some quick profits in remodeling and building—right now? Then—take the sure way that hundreds of live contractors and carpenters are using.

Go to your lumber dealer. Ask him to show you the way to line up house owners who must have remodeling or improvement work done on their homes—now—while waiting to build new ones.

They are remodeling because they want more comfort—added cozy rooms! Clinch these jobs for yourself! How? Simply show your customers how you'll give them double value—and real house comfort—with Balsam-Wool. That's what people want these days.

Tell your customers how Balsam-Wool gives—
(a) 2 times the value of common "insulated" construction
(b) Makes attics, sun rooms, new extensions several times as efficient as without insulation, against stifling summer heat and winter cold

Remember—your lumber dealer can and will help you land these jobs. Ask him—today. Learn how others are making profits, landing jobs, with Balsam-Wool. Fill in, mail the coupon below. Act now.

Wood Conversion Co. Dept. H-8, Cloquet, Minn.

Send me facts and figures on how I land real money-making jobs. Name ____________________________

Address ____________________________

Balsam-Wool Blanket
THICK... FLEXIBLE INSULATION... EFFICIENT

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
JAEGER offers MORE for YOUR MONEY---

---in "Dual-Mix" Tilters at $169 up:
half-bag trailers and 3½S, 7S, 10S power loaders with double the mixing action of any other tilter made.

---in Non-Tilters that Outperform all Others: from SPEED KING 7S trailer to 56S, a size and type to fit your job and handle it to best advantage.

---and in Improved PUMPS at LOWER PRICES
From the 2", 10,000 gallon SPEED BOY Self-Priming Centrifugal ($181, f.o.b. Columbus), Jeager Pumps offer improved performance at remarkably low prices—an opportunity to save real money on your drainage work this year.
Self-Priming Centrifugals, Convertible Diaphragms (at no extra cost), Plunger Lift and Force, Standard Centrifugals—all sizes. Attractive prices on Hoists, Placing Equipment

Get this Catalog before Buying

THE JAEGER MACHINE COMPANY, 521 Dublin Ave., Columbus, Ohio
Send latest catalogs and prices on Jeager Mixers, Pumps, Hoists, Jeager-Centwood Placing Equipment.

Kitchen Cabinet
Saves Time and Steps

THE 1932 kitchens are more modern than ever, and here is a new cabinet that is the last word. As shown below, it provides a surprisingly large storage space combined with a table which will seat five people comfortably. When closed it is neat, attractive, and occupies very little space.

Getting down to figures, this new model offers 35 square feet of shelf storage space and 15 square feet of drawer space plus a dining unit table. It returns the equivalent of 50 square feet of floor space, while occupying a wall space of only 63 by 85 inches. When closed it is 18" deep.

Women will appreciate the space-saving and step-saving qualities of such a cabinet as this. Foodstuffs and other kitchen items are conveniently within reach and yet can be kept neatly out of sight.

Financing the 1932 Home
(Continued from page 36)

the prospect gives a note. If the cost of the job is $300.00, down payment is $25.00, leaving a balance of $275.00 which is paid for in eleven monthly payments of $25.00 each. The twelfth payment is for $16.50 to cover interest charges at 6 per cent on $275.00. The note is discounted by the dealer through a finance corporation.

The final answer to the problem of financing homes must be a well regulated, central mortgage banking system. Until the day when this is achieved, the local builders who can obtain first mortgage money can best arrange their second mortgage financing through local companies organized by local building interests, as described.
PROSPER Thru LOCAL Manufacturing

NOW, as never before, are opportunities offered you in profitable manufacturing activities. You have a ready-made, low-cost, and absolutely certain local market for the products you can make in your territory. You need only equip yourself with modern equipment to produce local materials and utilized local labor. And—now—Dunn Line-Production Equipment at lowest prices ever.

Make DUNBRIK for Less Than $6.00 per Thousand
Brick is the most stable building unit of all time. You can now make DUNBRIK—a superior brick—with American Line-Production Machinery. Turn low-cost local materials and utilized labor into a profit for yourself. You operate on an exclusive basis. Your low production cost gives you the "whip-hand" over competition. Your exclusive sales territory, trained, and experienced salesmen now start you, enabling you to leadership in a stable industry. Get complete facts today.

Make DUNTEX—The World's Most Beautiful Roof
A very market installation now starts you manufacturing DUNTEX Roof Tiled. Machine now available—Line-Production—of tiling capacities that will fit your requirements. You produce roof tiles in all colors and shapes. Your locality will welcome the opportunity of being able to buy roof tiles at a price within the reach of every builder. Get complete information on this profit-maker.

Make COLORCRETE Ornamental Products
The beautification of homes, yards, gardens, conservatories, etc., has become a recognized phase—so widespread and popular that the local manufacturers of slate, stone, copper, garden furniture, step-stone stones, etc., offer outstanding opportunities. This is true for not only one and next time, but an opportunity which will time can be denied. Now you can furnish decorative gardening—also an opportunity to start an industry with a chance to the Coloring Process. They sell themselves. Small investment in small equipment starts you in a profitable and fascinating business. Get complete details.

Send for ILLUSTRATED BOOKLET TODAY

Other Local Manufacturing Opportunities
[...] As equipment "headquarters" for local manufacturing, in many lines, we offer equipment for the making of Dunite, block, tile, brick, drain-tile, sewer pipe, culverts, trimstone, art novelties, etc., etc. Write us. It may mean your first step to prosperity.

W. E. DUNN MFG. And Affiliated Companies
650 W. 23rd Street HOLLAND, MICHIGAN

AMERICAN STEEL SHEETS for EVERY PURPOSE

High Grade Sheets and Terne Plates adapted to all modern Building Construction Uses—Roofing and Siding, Gutters, Spouts, Eaves Trough, Flashings, Ventilators, Terne Roofs, Heating and Ventilating Systems, and all general sheet metal work.

KEYSTONE COPPER STEEL gives Maximum Service and Rust Resistance

This Company manufactures a complete line of Black Sheets, Apollo Best Bloom Galvanized Sheets, Galvanothall Sheets, Heavy-Coated Galvanized Sheets, and Sheets for Special Purposes; also Keystone Rust Resisting Copper Steel Sheets.

American Sheet and Tin Plate Company
GENERAL OFFICES: Frick Building, PITTSBURGH, PA.
SELL
Your Customers
This Low Cost Lasting Beauty


Are you building a house of Colonial type? Then give its shingled roof and sides the true seashore tones of weathered gray with Cabot's Creosote Shingle and Wood Stains. These real weathered grays are found only in Cabot's Stains.

Are you building a modern bungalow or cottage? These famous stains in bright colors will beautify and keep it beautiful, at low cost . . . Wood lasts years longer when Cabot Stains are used because genuine, refined creosote, "best wood preservative known," is the vehicle. A house at Cohasset, Mass., had shingle roof and sides stained with Cabot's Creosote Shingle and Wood Stains in 1892. At this time, all shingles are in good condition and all are in place. Cabot's Creosote Stains cost less than paint, and are quickly and easily put on.

Send for color card and full information.

Cabot's Creosote Shingle and Wood Stains

Made by the makers of Cabot's Creosote Stained Shingles and Cabot's Colophanes—Modern Scientific Colors for all Paint Uses.

Samuel Becht
141 Milk St., Boston, Mass.
Gentlemen: Please send me Color card of Cabot's Creosote Shingle and Wood Stains.

Name
Address

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Have You Heard About—

A new portable fireplace that beautifies the home . . . A new porcelain finish roofing tile made by fusing colorful porcelain to rust-resisting iron . . . A glazing and caulking gun which makes it easy to apply a new non-staining caulking compound around tile, brick chimneys, coping and woodwork, etc. . . .

A remote control for overhead type of garage door that opens when you sound your horn or touch an electric switch button . . . A copper radiator with heating unit resembling an automobile radiator in construction, and operating on low steam pressure . . . A cushioned flooring of tongue-and-groove construction which comes in reversible squares, which can be used as structural or top flooring . . . A new mortise lock that can be installed with only one auger cut . . . A new garage door hinge that holds doors open at 90 or 120 degrees and releases them by thumb latch on inside . . . An improved asbestos shingle cutter, portable, light weight, low priced, with 27-inch cutter blade . . . A new wiring calculator for instantly computing interior and conduit wiring problems, amperes, feet of wire, size of wire, percentage drop, and motor calculations . . .

Curb gutter blocks which provide frostproof, attractive driveways . . . . A double-acting checking floor hinge which works when swung in two directions . . . An automatic garage door that withstood the equivalent of 86 years of actual service . . .

A flush valve closet that operates on 1/2-inch or 3/4-inch supply pipe, which is silent acting and uses only 2 1/2 gallons of water . . . A new residence boiler of welded steel which is quick heating and uses little fuel . . . An electric garage door control that unlocks, opens, closes, locks and lights garage at touch of a switch . . . An improved steel floor of solid steel decking which is strong enough for builders to work upon before placing concrete . . . A cast iron boiler exclusively built for oil burning heating systems for the home . . . A new sash cord saddle that is installed by boring a 1-inch hole, driving saddle in and securing with a nail; noiseless and easy operating . . .

A strength computing slide-rule which can solve any beam problem in 6 seconds.

SWING SPOUT FAUCET—To make it possible to fill and wash tall dishes under a kitchen faucet a new type has been developed which has a five-inch elevated swing spout that curves upward.

Designed especially for use on low back sinks, these faucets provide a clearance of 12", enough for the tallest pails or dishes. They are made of the best red brass, engineered for life-time service and finished with a heavy coating of chromium.

The self-draining, removable soap dish attached to the top of the fixture is of twice-fired vitreous china, easily cleaned and guaranteed not to craze or discolor. The fixtures are thoroughly modern in design, and properly enhance the stream-line beauty of the 1932 efficiency sinks.
THE ISSUE OF APRIL, 1932

Edge Floors Faster

New Porter-Cable Dustless Edge Edger revolutionizes floor edging. No longer necessary to hand scrape. Finishes right up to baseboard faster and leaves better finish. Varnish no handicap. One contractor says, "Very well satisfied with your E. T. for strength and dependability it can't be beat. Every floor man ought to own one... (He is making money on jobs others won't touch.) This is what you have been looking for. Make us prove it by demonstrating. Write today.

Ten Electric Saws!

Full line of hand power saws, Slide and Table saws to pick from. Some style will fit your needs and pay for itself on first job. $85.00 and up. You'll never know what a hand power saw really can do until you've owned a Porter-Cable. Think of ripping 3" stock at rate of 14 ft. per min. or cross-cutting a 2"x12" in two seconds! Our type K-9 guaranteed to cut that fast! Other exclusive features you will want to know about, so ask for a free bulletin—no obligation.

Dustless Hand Sanding

New powerful Take-About Sander has vacuum dust system and perfect balance. Eliminates planing, scraping and sanding on doors, sash, trim, tables, edges of floors, closets, cabinets and built-in furniture. Just plug into wall socket, the belt does the work. Secures perfect finish 5-10 times faster. One owner says, "Two men sanded 1200 linear feet of casing in 4½ hours. I nearly paid for Sander on this job alone." 4 sizes to choose from. Ask for a no-obligation demonstration and double-check the savings yourself.

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deserve

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634 No. 13th St.
EASTON, PA.
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and
1500 So. Western Ave.
CHICAGO, ILL.

A treat to the eye and a treat to the check book!

Edwards

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BEAUTY need not be expensive ... Edwards Metal Spanish Tile offers gorgeous roofing effects ... row upon row of graceful, undulating curves, massive and beautiful. Edwards Metal Shingles of ornate or simple design sweep in symmetrical lines across the expanse of roof. Far or near Edwards tile or shingle roofs are always a treat to the eye and a treat to the check book.

No special roof structure is required for Edwards Metal Spanish Tile or Shingles. They have all the massive beauty of clay tile or slate at a fraction of the weight and cost. Easy to apply. Joints interlock assuring perfect alignment and leak-tite protection.

Made in Galvanized Steel, terra cotta (tin) sheet zinc or pure copper. Proof against fire, lightning, wind and weather. Reduce upkeep and insurance.

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Beautiful interior decorative treatment, easily applied. Heavy metal, deeply embossed with beautiful period and modern designs. Ideal for homes, in basements, attics, kitchens, etc., for Halls, Theatres, Hospitals, Stores, Hotels, etc. Fireproof, sanitary, economical, beautiful. Write for illustrated catalogue showing installations in all parts of the world.

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Cincinnati, Ohio

World's largest manufacturers of sheet metal building materials

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IN A MODERN WAY!

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Here's a BRAND NEW Source of IMMEDIATE PROFITS FOR YOU.

Every housewife wants CLOSIDOR on sight!

In every section of the country, CLOSIDOR takes—because no housewife ever did have enough closet space. CLOSIDOR solves the problem by providing a special place for special things. Creates order and efficiency hitherto unknown. CLOSIDOR—a closet on your door—is attached in a jiffy to either side of any standard door. Whether it's a home or an apartment—old or new—large or small, CLOSIDOR is a very minor item of expense, yet a dynamic factor for salability of your entire construction or repair contract. To the present home owner CLOSIDORS sell on presentation. As an independent item therefore, especially at these times, CLOSIDOR opens up a NEW SOURCE of IMMEDIATE PROFITS for YOU!

See CLOSIDORS Displayed in Leading Lumber Yards, Building Supply and Hardware Stores

• FIVE NEW MODELS FOR

Bathrooms, Kitchens, Buffets, Wardrobes

Panicure STEEL throughout. Shelves, hooks, etc., permanently spot-welded. Chromated plated spring locks. Ball Bearing finish inside and outside. Ivory Color; easily painted over in any color at will. 7 ½ high, up to 4 ½ deep, wide for every windowed door. LOW PRICE $17. (Rental Budget: $23.50) Slightly higher west of the Mississippi River.

Bulbs to last a lifetime.

For further details contact American Builder Information Exchange, 105 West Adams, Chicago.

COMPACT SAW—Power tools, and especially power saws and sanders, will play an important part in cutting building costs this year. A compact new saw measuring only 20" overall is attracting much attention. Expert engineering permits use of a ½ horsepower motor developing a torque to a 9" saw blade, which will rip 12" of 12" lumber in 20 seconds, or cross-cut 2" of 2" lumber in 5 seconds.

The new saw has a cutting capacity 3" deep and is equipped with a tilting base that permits beveling full 2" lumber at 45 degrees. It has perfect balance, which is so essential to easy handling and control. Features include die-cast aluminum frame, ball-bearings, easy adjustment, instant disposal of sawdust. Weight is only 24 lbs.

LOW-PRICED SANDER—In answer to the growing demand for a low-priced floor sander, a prominent manufacturer has developed a simple one-moving-part machine. Probably the most interesting feature is the ingenious development of the self contained motor sanding drum. (See small illustration.) This is a very simple form of electric motor for single phase use. Yet, due to the entire absence of driving mechanism, 100 per cent of the power is available for productive work.

Operation of the sander drum is explained as follows: If you held the pulley of an ordinary motor stationary and the frame was free to move it would revolve around the armature. This is what happens in this new floor sander.

The armature carries all of the windings and is held stationary while the fields, which are of the well known squirrel cage construction and contain no windings, are built into

(Continued on page 84)
**INSULMESH**

**THE PLASTER BASE THAT DEADENS SOUND, INSULATES AND REINFORCES**

Quality plaster work can be obtained at low cost where Insulmash is used. The overlapping steel mesh becomes imbedded in the plaster and prevents cracking. The corrugated board backing provides a perfect ½" air-cell insulation. The rigid Insulmash sheets are easily handled, quickly installed and economically plastered. Write for sample and price.

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Warehouses and Offices in Principal Cities
Dealers Everywhere

**MAKE BIG MONEY**

**Finishing Floors**

Thousands of dollars will be spent during Spring house-cleaning time for refinishing old floors. Why not get your share? With our tested plan—the popular American Method—this work is easy to get... and it pays well.

To get started in this profitable business requires no experience, extra help or office space. All you need is the well known "American" sander which can be secured with a small down payment. We even furnish FREE a complete set of advertising material that gets the business. Right now is the best time to get started, so mail the coupon at once for complete details.

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Please send complete information about:

- [ ] Getting into the floor sanding business.
- [ ] American Sanderplane Edger.

Name:
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City:
State:

**SUBMIT your sketch to Us!**

We will gladly develop a design from your rough sketch and quote an interesting price. Remember we sell direct to you from our factory and save you money on balconies, grilles, stair rails, gates and iron fence.

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Prices were never lower, quality never higher; all work guaranteed against defect or we replace without charge.

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**RANSOME 10-S**

**Standard Building MIXER**

Improved Design—Simpler

More Portable

Send for Bulletin 118A

Ransome Concrete Machinery Co.
1850—Service for 82 Years—1932
DUNELLEN NEW JERSEY

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
New Devices Make
Builder's Work Easier

(Continued from page 82)

the form of a drum to carry the sandpaper and revolve at the rate of 1800 revolutions per minute around the stationary armature.

The drum is six inches in width and seven inches in diameter. The entire machine weighs only fifty pounds, making it heavy enough to hug the floor and yet light enough to be carried very easily by one person. It operates as easily as a vacuum cleaner, making it an ideal machine for rental purposes.

LIGHT WEIGHT TAPE-RULE—This new pocket-size rule, no larger than a watch, combines the utility of a rule with the convenience of a steel tape.

The \( \frac{3}{8} \) wide blade can be projected unsupported to walls or into openings like a rule. It will also accurately measure circles in odd shapes. Tape is of super-quality tempered steel, stiffened by special forming. It has dark background with markings in sharp contrast, most readable. Inches are graduated to 16ths; and zero falls at inside of solid hook, which is a very handy feature. Accurate butt end measurements can be taken from the shoulders of the hook.

The case is chromium plated, has rounded edges, and is strong and compact. The blade is manually withdrawn and automatically returned by pressing a push button. Operation is rapid and safe. Weight 3 ounces.

New tape combines good qualities of rigid rule and steel tape. Is compact and light weight.

DUSTLESS PORTABLE SANDER—A new machine is announced which will do its share to open up the increasingly great territory for sanding profits. This sander weighs only 48 pounds and is very easy to operate. The manufacturers state that it will sand from 800 to 1600 feet of floor in eight hours. Because of its light weight, easy portability and the fact that it operates from the ordinary electric outlet, it is reported to be very economical and convenient to use. Its small, compact size and special design also make it possible to sand right up to quarter-rounds. Improvements have been made in the method of inserting new paper. The drum opening is extra large, permitting easy access and only three screws need be loosened and then tightened with a screwdriver in order to remove worn sheet and replace it with a new one.

Light weight and ease of operation are claimed for this new floor sander.
A GOOD NAME... 
NOW TAKES ON ADDED VALUE

VENTO
PUTTYLESS
STEEL
BASEMENT
WINDOWS

ALWAYS preferred—the use of VENTO Puttyless Steel Basement sash now becomes well nigh indispensable. To fully satisfy your critical buyers of today you need the extra quality and the numerous extra conveniences that Vento alone affords.

Write for Catalog and Prices

VENTO STEEL SASH CO.
Puttyless Windows for Basements
242 Michigan Ave.
Muskegon, Michigan

LOWER SCAFFOLD COSTS

Now, savings in cost are more important than ever. Put your scaffolding lumber dollars into Steel Trouble-Saver Brackets and you'll save money two ways... (1) you'll save on labor, because Trouble-Savers go up quicker with less labor cost; (2) you'll save on material because these angle steel brackets never wear out in hard service.

No other bracket can approach Trouble-Savers in safety, in simplicity of operation in long life. Three kinds to select from—Nail Attached Brackets that hook on four nails; Studding Brackets that hook around the studding; and Bolt Brackets that bolt on a 2 x 4 across studdings. We manufacture a complete line of steel scaffolding. Write today for new low prices.

"TROUBLE SAVER"
Steel Scaffolding

The Steel Scaffolding Co., Inc.
402 East Missouri St.
Evansville, Indiana

Send me by return mail, complete description, illustrations and new low prices on Trouble-Saver Scaffolding checked at right.

Name
St. and No.
City and State.
I am a (State kind) Contractor.

NEW LOW PRICES NOW IN EFFECT

THE Dreadnaught 6 has almost overnight set up a new measuring stick for sander value and efficiency. Faster cutting—greater power—less cost to buy and to operate—produces a finer finished floor at less cost per square foot than any other sander, big or little. The Dreadnaught 6 is making new and unusual profits for contractors and builders everywhere—you should know its story, see it out-perform on your own jobs. Ask us to send you complete details today!

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Send me full details on the new Dreadnaught 6.

Send details on Vacuum Portable Sander.

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State

AMERICAN
SAW MILL MACHINERY CO.
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Hackettstown, N. J.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
LETTERS
from Our Readers

Condemns "Chicken Wire" Construction

St. Louis, Missouri.

To the Editor:

Referring to the article in your March issue, "Demonstrating Quality Work," I know from experience over a period of fifteen years in the stucco business that the type of construction described is generally referred to as "Jerry building."

In many sections of the country where chicken wire has been used in this manner the constructions have failed,—and the building departments no longer permit its use.

H. H. ROBINSON.
With National Steel Fabric Co.

Prohibited in Many Cities

Chicago, Illinois.

To the Editor:

In your March issue there is an illustrated article headed "Demonstrating Quality Work." These photographs show the use of chicken wire in stucco construction. I am surprised that a magazine with the reputation of the American Builder would publish such an article when an investigation of this type of construction will show that it is prohibited by many building ordinances throughout the country.

Even the temporary exhibition buildings that were contemplated in the east recently did not permit the use of chicken wire in stucco construction. The specifications for wire fabric definitely stated that it should be welded wire fabric.

H. M. WILSON.

Wants Specifications

Lansdale, Pennsylvania.

To the Editor:

May I congratulate you on your excellent presentations of your feature "The House of the Month"?

Each issue certainly grows more in value to any builder who is interested in better home construction. Information of this kind cannot fail to be appreciated by your subscribers and the builders as a whole.

I am sure that a schedule of materials and a complete specification of them would very materially add to this feature.

People studying these feature homes, I feel, are interested in knowing what kind of interior trim is recommended and the specifications for the paint and stain work.

In this manner they indirectly educate themselves to better standards of building.

ROY W. SCHWEIKER.
Vice President, Franklin Pottery, Inc.

More on Labor Saving Machines

Slater, Missouri.

To the Editor:

I would like to refer to the article of E. A. Ludlam in the March issue concerning unemployment and machinery. His views as expressed in this article are by no means my views on this subject.

That many jobs have been created by labor saving machinery cannot be disputed because with machinery, the cost was not prohibitive, whereas it would have been without it. Take, for instance, the automobile. Do away with machinery, then try to produce an automobile and figure the cost of it. This would begin with the mining of the ore, and other products that go to make it, and extend to the producing of each and every piece until it would be complete. Who would be able to buy it after it was completed? Then can we not say that machinery has made possible this particular product. Take it away and you also take away the livelihood of the many that are selling these automobiles, those that are repairing them, those that keep the filling stations, those that drive the trucks and buses, those that build the highways, and many others. What an army are kept busy, because machinery made it possible that such a thing could be produced with reasonable cost.

E. E. CRUEA, Contractor and Builder.

You are invited to write your views on any subject of interest to the building industry. 300 words should be enough!

Educating to Better Building

St. Paul, Minnesota.

To the Editor:

We are very much interested in your March publication pertaining to the "House of the Month" and the estimates of costs. We are of the opinion that here is one way of bringing to the attention of the prospective home owner information which is really worth while and something he should have when he is considering the building or purchasing of an already built home.

We are of the opinion that this kind of information could be put into the hands of the local newspapers to be printed on their building pages so as to impress the average buyer of a home and make him understand there is a decided difference in quality and that when he buys price and price alone he is only fooling himself. We are taking this up locally with our papers and will endeavor to have them print some information pertaining to this particular issue and information which you are giving.

Will you allow us to suggest that you continue with this kind of information, which also should get into the hands of the mortgage loan companies so as to overcome the one outstanding difficulty which the home building industry is in today—that of a fair loan with a proper basis of loan values. No doubt you are familiar that the large majority of the loan companies today are loaning on the basis of cubical content and figuring all of the values on the same cost per cubic foot. In other words, putting a premium on poor construction.

We want to congratulate you on the interest you are taking in this particular thing and know that a continuance of this kind of publication will be highly appreciated by all high class home building contractors and ultimately furnish the information so necessary for the prospective home owner.

CONRAD HAMM, Home Builder.

Would Do Away with Sub-Contractor

Villa Park, Illinois.

To the Editor:

In order to get home building costs down where they should be to create demand, there must be a reduction in the labor cost. This can be done in two ways:

1. Either by reducing the time required to complete the job, or
2. By reducing wages.

It might be possible to get more work done per day per man; but spending up is not consistent with good construction. However, in some trades, a certain amount of work is considered a day's work, regardless of the number of hours required to do it. What must be done in order to get residence construction costs down is to eliminate as far as possible the sub-contractor. The unions must give the general contractor the right to hire any mechanic he requires to complete the job. At present there are only two or three trades which allow the general contractor to hire direct.

A great deal of money could be saved in this way, although on larger work it would probably still be advisable to employ the sub-contractors.

A general contractor of small residences, or on alter- (Continued on page 88)
THE ISSUE OF APRIL, 1932

IT'S NEW — IT'S A KNOCKOUT!

Send us 60 Cents or Ask Your Hardware Dealer.

3 1/2" Wide... 35¢ Long

Consistent, sturdy, easy, accurate. Nothing else like it.

SAND'S-STEVENS No. 555 Line & Surface LEVEL

For general construction work, read-hour and stove dam work-shops, etc. Made of hard drawn hexagonal aluminum tubing; nickel silver end screws. Made for easy leveling. Quickly fixed to line. Special construction prevents accidental detachment from line.

"Sand's Levels Tell The Truth!"

SAND'S LEVEL & TOOL CO., Inc. Dept. "G" 612 Grand DETROIT, MICH.

Don’t Pass This Up
MAKE MONEY NOW

The new improved Schluter makes easy work of finishing old or new floors. You can start a profitable business of your own right now. The speed with which this machine turns out perfect floors is amazing. Your low bids and superior workmanship will land you every contract.

Every old and new building is a prospect. Write us today for complete details. Let us tell you how you can make this machine pay for itself while you are using it and give you a handsome profit at the same time.

LINCOLN-SCHLUETER FLOOR-MACHINERY CO., INC. 2312 W. Grand Avenue CHICAGO, ILLINOIS

"Will it be waterproof?"
"Will it be strong enough?"
"Will it harden quickly?"

These are "concrete" questions that are answered quickly and simply by the use of "Anti-Hydro", for many years the recognized integral waterproofer.

The fact that it hastens hardening, increases strength and carries a 25-year guarantee on the maintenance of waterproofed concrete on supervised jobs are additional reasons why it should be used on concrete masonry.

BUSY BUILDERS
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Save surveyor's fees, avoid costly errors of old methods by getting our free book on laying out lots, leveling foundations, running property lines, etc. Shows how inexperienced builder can make new profits with our "Universal" Level-Transit. Emphasized superior is simplicity, strength, accuracy, and convenience. Can be learned in 80 minutes. No experience required.

Ten Days' Trial Free
Complete with case, strap and lock, macho detector, plumb bob, adjusting box, ready for work, 810 with work, instructions, and monthly payments. Money refunded if not satisfactory. Particulars free.

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Branch Offices: Chicago... Detroit... St. Louis

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
LETTERS
from Our Readers

(Continued from page 86)

ation work, if he knows his business, should be able to handle all of the trades. He should know what any tradesman can do in a day and also know how it should be done. Why, then, give a profit to the sub-contractor? For years the general contractor, who is usually the carpenter contractor, has been the goat for the other trades. He takes the kicks and also pays for correcting them and usually has to wait for his money long after the sub-contractors are paid.

I would also like to suggest a radical change in the unions. I would suggest a national union of all trade mechanics. In addition to this, I believe any mechanic should do anything on the job that the contractor wants done. Naturally it would not pay to attempt to make a mason out of a carpenter, or vice versa, but there are occasions when much time is lost because the mechanics are bound by their union rules to stick strictly to their own line of work. This idea is revolutionary, but such ideas are the order of the day.

ROBERT L. MCKEE

Planning Factory Built House
Kansas City, Missouri.

To the Editor:
Will you kindly note in your publication that we are desirous of receiving full information and descriptive literature of any materials that may be included in the construction of homes? We are building a factory-fabricated, sectional house and as soon as several points at present in question are settled, we will have a very interesting announcement to make for the building industry.

EVERETT M. OXLEY
With Universal Homes Corp.

Wants Plans for Low-Cost Houses
Washington, New Jersey.

To the Editor:
I am foreman of a lumber yard. This question of cheaper houses is constantly coming up. You publish many fine plans; but the cost is too high. In our town of 5,000 people, lots can be purchased for $300 on a fairly good street with all conveniences except gas. We have many men here earning $25.00 a week and they have to live and pay rent not over $25.00 per month. Now can you suggest plans for a house of five rooms and bath with light and furnace (pipeless) that can be built and sold for $4,000 including $300 for lot and $75.00 for sidewalk?

HAROLD W. DAVIS

Mass Housing and Higher Standards
Cleveland, Ohio.

To the Editor:
The feeling that there is something radically wrong with home building has produced a number of valuable suggestions, also a large volume of uninformed criticism and generalizing comparisons that are not so good.

“When we build houses as we build autos,” is the opening phrase of a popular curbstone speech, usually delivered by a man who never built either.

This comparison of home building with motor car manufacture needs a little de-bunking, much as we hate to disturb the mental picture of those who see a long assembly line of new homes, proceeding along a conveyor, while the successive trades do their stuff—an allowance of perhaps four minutes for the masonry, ten minutes for the carpentry, thirty seconds for the plumbing and so on.

A house a minute is a lovely goal to work toward and if houses could be delivered complete to lots perhaps 500 miles

(Continued to page 90)
Classified Advertising

RATES:
Small letters 50¢ per word.
Capital letters $1 per word.
Minimum twenty words.

To Insure Insertion Remittance Must Accompany Order

COPPER RANGE BOILERS—ELECTRIC WATER HEATERS
with "built-in" Copper tank. Write COPPER BOILER & HEATER WORKS, 526 Jay St., Manitowoc, Wis.

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PATENTS AND TRADE MARKS—Protect your inventive ideas.
Prompt, Expert Personal Service. Write for full information.

This Book Will Save You Many Times Its Cost!

Every problem presented in this manual was selected for its value as a time saver for doing some special job. Everything about the building is covered from constructing forms for concrete foundations, through framing and roof works, floor construction and finish, interior trim, fitting and hanging doors, etc., plastering to applying stucco to the finished building.

The chapter on Kinks and Wrinkles alone will save you the price of the book.

AMERICAN BUILDER AND BUILDING AGE
30 Church Street
NEW YORK

Model 24
MARCO
TELEFOLD
STAIRWAY

$24.00
EXPRESS PAID
TO YOUR DOOR

NEAT—STRONG—SIMPLE.
Now no one can afford to be without a Marco Stairway to the attic.
Write for free catalog, Dept. AA,
The Marschke Co.
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NO DEPOSIT REQUIRED
AND 10 DAYS FREE TRIAL
NO EXPENSE
NO OBLIGATION TO PURCHASE

A New Instrument
use like a transit — — — — — adjuster like a Wye Level

Telescope can be adjusted like a Wye Level. Horizontal circle entirely protected. Horizontal circle with vertical reading to single minute. Tilt 110°. Clamp and tangent to telescopic axis can lean each time in leveling. Write today without obligation to Dept. F6 for complete information about this offer and our new Illustrated Catalog Free.

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Makers of Sterling Surveying Instruments

TUBEHANKS
AN EXCLUSIVE FEATURE OF
ALL SILVER LAKE PRODUCTS

SILVER LAKE COMPANY
NEWTONVILLE MASSACHUSETTS

FREE COMBINATION BOOK AND CATALOG

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Thousands of Dollars saved on this Authoritative 4-color, highly illustrated book. Solve all plans, specification problems for this new model. Kitchens, dining rooms, etc. Honest Patterns—Selected Colors. A valuable book for every contractor and this seller. We'll send it to you for 10¢—sent on your first order. Structures or estimates always given truly.

LOYD FLOOR & WALL TILE CO.
6064 Kansas City, Mo.
away there would be nothing to interfere with its realization. But houses cannot be considered nor constructed apart from the lots on which they stand. Such steps as may now be taken in quantity production are valuable only in developing new outlying areas—while the crying need is for the re-development of dilapidated central districts.

While economy is being rightly stressed, the solution of America's building problems lies in progressively better and more livable homes—not in learning to put up with lower standards.

Henry D. Thoreau in his cabin at Walden, Gandhi in his austere ashram, or Xenophon's ten thousand camping under the stars are examples of what men can do, in a spirit of sacrifice, rather than what men want to do. There is no more easily available, low cost habitation than a tent.

But in this day and country there is no reason why people should be compelled or expected to limit their desires to such humble standards. Some of the agitators for factory-built standards overlook this fact.

To argue for contentment with lower standards, rather than progressive improvement, is to reverse western psychology and thus further upset our economic system.

Building, we believe, will always be building—rather than mass production. Increase in factory fabrication of certain units, such as stairways, fireplaces, partitions, roof and floor sections may, some day, come on the job in semi-completed shape. But recourse to new material and methods will be in the nature of evolution rather than revolution. Too many obvious improvements remain untried for us to see only sweeping innovations.

Better organization and a unified sense of responsibility toward the owner can do a great deal to give the latter what he has lacked—real consideration for his pocket book.
**CLASSIFIED DIRECTORY AND BUYERS' GUIDE**

**This list of manufacturers is presented so that readers of AMERICAN BUILDER AND BUILDING AGE may quickly identify and locate manufacturers of building products, specialties, and contractor's equipment. The arrangement is alphabetical, by product headings; under each product heading the manufacturer's names are listed alphabetically. At the right of each name will be found the page number of the manufacturer's advertisement in this issue. The manufacturers listed below will be pleased to furnish complete information regarding any products which they manufacture, in addition to the products advertised in this issue. Readers are urged to write these manufacturers for names and addresses of nearest dealers, catalogs and prices.**

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- **Concrete:** Medusa Portland Cement Co.
- **Concrete:** Pittsburgh Plate Glass Co.
- **Concrete:** Rickerston Mineral Color Works.
- **Concrete:** The Stanley Chemical Co.

#### Metal
- **Aluminum:** Aluminum Co. of America.
- **Stainless Steel:** Reading Iron Co.

#### Wood
- **Furniture:** Weyerhaeuser Sales Co.
- **Flooring:** Pittsburgh Plate Glass Co.

#### Glass
- **Building:** The Edwards Mfg. Co.
- **Building:** Truscon Steel Co.

#### Plastics
- **Conductive:** American Floor Surfacing Machine Co.
- **Conductive:** Key Batten Co.

#### Nails
- **Concrete:** Contemporary Nails, Inc.

#### Woodworking
- **Products:** Truscon Steel Co.

#### Electrical
- **Equipment:** Arrow-Hart & Hegeman Elec. Co.

#### Concrete
- **Concrete:** Rickerston Mineral Color Works.
- **Concrete:** The Stanley Chemical Co.

#### Plywood
- **Plywood:** Weyerhaeuser Sales Co.

#### Plumbing
- **Fittings:** American Sheet and Plate Co.

#### Seeds
- **Seeds:** David White Co., Inc.

#### General
- **Machinery:** Parks Woodworking Machinery Co.
- **Machinery:** Weston & Audsger, Inc.
- **Machinery:** Ransome Concrete Machinery Co.

#### Other
- **Rents:** Cincinnati Iron Fence Co., Inc.
- **Rents:** National Steel Fabric Co.

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**Note:** The list above represents a sample of the products and companies listed in the document. The full list is extensive and includes a wide variety of building materials and equipment.
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DELCO Light Electric Plants, General Electric Co., Cedar Rapids, Iowa.
DELCO Vacuum Cleaners, Fans, Radio Range (Oil Burners), Pumpco, Delco Appliance Corp., Rochester, N. Y.
DIRECT ACTION Electric Range, American Stove Co., St. Louis, Mo.
DURLETAS Woodworking Machinery, Heston & Anderson, Des Moines, Iowa.
DREADNAUGHT Combination Sanders, Dustless Six Floor Machines, Dustless Eight Floor Machines, Charles Sanding Machine Co., Muskogee, Ok.
ECONOMY Kitchens Units, Farley & Loetscher Mfg. Co., Dubuque, Iowa.
EDGE-ITE Bath Room Cabinets, Henkel "EDGE-ITE" Corp., Chicago, Ill.
ETERNITY Asbestos Shingles, Lamorta, Corrugated Sheeta, Various, The Division of the Ruberoid Co., New York, N. Y.
ETERNITY Asbestos-Cement Products, The Ruberoid Co., New York, N. Y.
EVER-BEADY Combination Woodworkers, Porter-Cable-Hutchinson Corp., Syracuse, N. Y.
FERROGLAD Insulation, Trusten Steel Co., Youngstown, Ohio.
FILICENT Keyboard Insulation, Thermal Insulation, Flash-Ix-Sum Insulating Co., St. Paul, Minn.
FLEXIBLE-CAVOS Sockets and Connectors, General Electric Co., Schenectady, N. Y.
FUGICIA Insulating Materials, Formica Insulation Co., Cincinnati, Ohio.
FRIGIDAIRE Refrigerators & Ice Cream Cabinets, Frigidaire Corp., Dayton, Ohio.
G & E Levels, Geier & Bluhm, Inc., Troy, N. Y.
HOLLOWSPUN Bales, Poles, Distribution and Trolley, Pacific Electric Co., Los Angeles, Calif.
HEATILATOR Fireplace, Heatilator Co., Syracuse, N. Y.
HIGHTOP Early Strength Cement, Louisvile Cement Co., Louisville, Ky.
HOLLYWOOD Insulating Materials, Formica Insulation Co., Cincinnati, Ohio.
IN-CEL-WOOD Lath, Board, Cornell Wood Products Co., Chicago, III.
INJECTION Planter Base and Wallboard, Insulite Co., Minneapolis, Minn.
INSULMILL Planter Base, Trusten Steel Co., Youngstown, Ohio.
IRGAROL Roofing Coating, Longs Roofing Co., Chicago, Ill.
JAGGER LAKEWOOD Chutes, Mast Hoists, Hoppers, Towers, The Jagger Machine Co., Columbus, Ohio.
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PUBLICATIONS listed on these pages may be secured by filling in their numbers on the coupon and sending to AMERICAN BUILDER AND BUILDING AGE. W. Adams St., Chicago.

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1—"How to Make Good Waterproofed Concrete," 28 pages of practical directions, by the Medusa Portland Cement Co., Cleveland, O.

2—"Concrete Masonry Construction, for Builders and Architects," 28 pages of notes illustrated with working drawings by the Portland Cement Assn., Chicago, Ill.

3—"Cutting the Traffic Knot," a 14-page data of road building and related data by the Universal Atlas Cement Co., Chicago, Ill.

4—"If Your Cellar Leaks," information on correcting dampness in any cellar by repairing same on the inside; the Anti-Hydro Waterproofing Co., Newark, N. J.


6—"Lime Mortar; its Relation to Water- proofing Departments of slates and recommendations by the National Lime Assn., Washington, D. C.

7—"Building Economy and the Modern Brickbuilder," an illustrated magazine published every other month by the Common Brick Manufacturers Assn. of America, Cleveland, O.


10—"Distinctive Homes of Iloc Ripl- stones," a 28-page data of luxurious hones, interesting the natures of modern examples of limestone ve- neer, design, cost, etc., by the Indiana Limestone Co., Bedford, Ind.

ROOFINGS


14—"CeA-A-Res Shake Details," a por- folio of data on Winthrop asphalted cedar shakes, with names and sales of several leading asphalt shingle manufacturers; The Beckman-Dawson Roofing Co., Chicago, III.

15—"Copper; its Effect upon Steel for Roofs," 32 pages of data of copper-lagash-sanded shingles, by the Beckman-Dawson Roofing Co., Chicago, Ill.


18—"Building Economy and the Modern Brickpeople," an illustrated magazine published every other month by the Common Brick Manufacturers Assn. of America, Cleveland, O.


22—"Selling the Job Applied," how to make more money and do work better by or- ganizing teamwork between dealers and contractors for promoting financing and selling new roofs, by the John-Manville Co., New York City.

23—"Cape Cod"; a portfolio of asbestos cement shingles, by the John-Manville Co., New York City.

24—"Roofs of Blended Beauty," a port- folio of design plans showing Carey Asbestos Cement Shingles, by the Philip Carey Co., Lockland, Cincinnati, O.

STEEL PRODUCTS

25—"Truscon Ferroclad Structural Pan- els"; details and specifications for use of insulated sheet metal panels, the Truscon Steel Co., Youngstown, O.

26—"Columns, featuring Union Metal columns for entrances, garden orna- ments and street lighting; The Union Metal Manufacturing Co., Canton, O.

27—"Mesker Bowstring Steel Roof Trusses," presenting valuable design data for basements, warehouses, factories, barns and stores, issued by The Schwab Safe Co., Lafayette, Ind.

28—"Light Slab Construction," 32 pages of design data using Bostwick lath and reinforcing; The Bostwick Steel Lath Co., Niles, O.

29—"Wrought Steel Balconies, Rails and Grilles," intriguing designs in stock or- namental wrought iron sections, by the Cin- cinnati Iron Fence Co., Cincinnati, O.

30—"Protection from Fire and Theft," featuring the fireproof vault doors, vault construction and installation details of The Schwab Safe Co., Lafayette, Ind.

31—"The Donley Catalog, Fifteenth Edition," 32 pages of Donley devices includ- ing fireplace construction, garage rece-ivers, coal chutes, package receivers, etc., issued by The Donley Brothers Co., Cleveland, O.

32—"Covert Fireplace Construction," 32 pages of design drawings for fireplace construction and reinforcing; The Bostwick Steel Lath Co., Niles, O.

33—"Protection from Fire and Theft," featuring the fireproof vault doors, vault construction and installation details of The Schwab Safe Co., Lafayette, Ind.

34—"The Donley Catalog, Fifteenth Edition," 32 pages of Donley devices includ- ing fireplace construction, garage rece-ivers, coal chutes, package receivers, etc., issued by The Donley Brothers Co., Cleveland, O.

35—"Kawneer Store Fronts, Windows, and 

36—"Monel Metal in Modern Architec- ture"; an illustrated pamphlet on orna- mental metal work and kitchen fixtures of Monel Metal issued by the Architec- tural Service Department of The Inter- national Nickel Co., Inc., New York City.


38—"Reading Puddled Iron Pipes"; where and how to use this pipe that lasts; the Reading Iron Co., Reading, Pa.


40—"Truscon Residence Casements with Casement Screens," 32 pages of photographs and detailed drawings issued by the Truscon Steel Co., Youngstown, O.

41—"Vento Steel Windows—General Cat- alog"; complete line for basements, warehouses, garages, factories, barns and stores, issued by Vento Steel Sash Co., Lockland, Cincinnati, O.

42—"Sealair In-swinging Window," de- tails of the new window for homes, apartments and hotels developed by The Kawneer Co., Niles, Mich.

43—"Steel Windows by International," presenting the line of industrial and basement windows offered by the International Steel & Iron Co., Evans- ville, Ind.

44—"Milcor Fireproof Hollow Metal Windows"; folder illustrating the line of hollow metal windows offered by the Milcor Steel Co., Minneapolis, Minn.

45—"Crittall Norman Casements"; a sketch book of designs issued by the Norman Casement Window Co., Detroit, Mich.

46—"Lupton Steel Products"; a con- tained catalog of the line of windows for homes and industrial plants issued by the Lupton Engineering Co., Philadelphia, Pa.


48—"Curtis Windows," a 32-page photograph and working details of the windows and doors by the Curtis Companies, Inc., Clinton, Ia.

49—"High Quality Windows and Doors," a 32-page of photographs and working details of the windows and doors by the Curtis Companies, Inc., Clinton, Ia.

50—"Curtis Windows," a 32-page photograph and working details of the windows and doors by the Curtis Companies, Inc., Clinton, Ia.


52—"Cromar Oak Floors," presents Cromar factory-finished oak floors offered by the Cromar Co., Williamsport, Pa.

53—"Laying, Finishing and Care of Oak Floors"; a 32-page photograph of information about the Oak Flooring Mfrs. Assn. of the United States, Memphis, Tenn.

54—"Frames of Quality" illustrates and describes the weather tight window frames offered by the Reading Iron Co., Reading, Pa.

55—"Pine Craft Weather Proof Frames" presents window frame details for all forms of construction as offered by the White Pine Sash Co., Spokane, Wash.

56—"The Original Master Casement," a complete unit of sash, frames, and casement, and new glazing is featured in a news bulletin from the Anderson Master Frame Corporation, Dayton, Minn.

57—"Silentite Pre-Fit Frame, Window, and Door"; a complete line of windows and doors including the latest information on details explaining this revolutionary window design by the Curtis Companies, Clinton, Ia.
INSULATIONS


102—"Just Between You and the Weather"; how summer heat and winter cold are made of houses; U. S. Mineral Wool Co., Woonsocket, R.I.


104—"Silakraft Reinforced Building Paper"; many important uses for this versatile building material outlined by the Silakraft Co., Chicago, Ill.


106—"Money-Making Jobs," suggests opportunities in the home insulation field; Wood Conversion Co., Cloquet, Minn.

HOME EQUIPMENT

111—"Closhor"; an ingenious auxiliary cooking equipment, by the Servidor Co., New York City.

112—"Dahquist Copper Bollers"; circulars featuring the automatic electric hot water heaters developed by the Dahquist Mfg. Co., South Boston, Mass.

114—"Planning for Home Telephone Communications" as to the leatherbound handbook of 52 pages, offered by the American Telephone and Telegraph Co., New York City.


120—"The Sunny Side of the House," a portfolio of remodeling suggestions showing what can be done by building on glazed porches, bay windows and solaria; the American Window Glass Co., New York City.

131—"Contractors' Catalog of Woodworking and Sanding Machines" by the Porter-Cable-Hutchinson Co., Syracuse, N. Y.

CONTRACTORS' EQUIPMENT

132—Catalog of Saw Mill and Woodworking Machinery, featuring the complete line of the American Saw Mill Machinery Co., Hackettstown, N. J.

133—"Parks 'Carpenter Shop Special'"; photographs and specifications of this machine, developed by The Parks Woodworking Machine Co., Cincinnati, O., and handbooks on the manufacture of contract work are offered by the same.

134—"Skilsaw—the Perfected Electric Hand Saw"; pamphlet showing the many uses of this equipment; Skilsaw, Inc., Chicago, III.

135—"Dahlquist Copper Boilers"; circulars featuring the automatic electric hot water heaters developed by the Dahlquist Mfg. Co., South Boston, Mass.


137—"Steel Scaffolding" features the product of the Steel Scaffolding Co., Everett, Wash.

138—"International Trucks in the Coal, Coke, Ice, Lumber and Building Materials Industries"; 32 pages of photographic and descriptive material giving facts on the sander with only one moving part, perfected by The ideway Corp., Cedar Rapids, Ia.

REQUEST FOR CATALOGS

To get any of the catalogs described in this section, put down the number or title and send coupon to AMERICAN BUILDER and BUILDING AGE, 105 W. Adams St., Chicago.

Please send the following catalogs:

Name ___________________________ Business ___________________________

Address ___________________________
ROMAN Bronze, Revere Copper & Brass Co., New York, N. Y.
REMINDO Combined § Switch and Buzzer, General Electric Co., Schenectady, N. Y.
RECLAMING Roofings and Building Products, The Ruberoid Co., New York, N. Y.

ROMAN Bronze, Revere Copper & Brass Co., New York, N. Y.
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RECLAMING Roofings and Building Products, The Ruberoid Co., New York, N. Y.

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ROMAN Bronze, Revere Copper & Brass Co., New York, N. Y.
REMINDO Combined § Switch and Buzzer, General Electric Co., Schenectady, N. Y.
RECLAMING Roofings and Building Products, The Ruberoid Co., New York, N. Y.
The growing use of steel in modern home building is not a fad. There are many decided advantages in its favor. For instance, consider the specific case of floors constructed with Kalmantruss Steel Joists and Accessories. A few of the worth-while benefits are as follows:

These Steel Joists eliminate shrinkage that causes cracking in plaster partitions and the opening up of unsightly, dirt-catching cracks between floor and wood base.

A stronger, stiffer floor is obtained, Kalman Steel Joists, braced with Kalman Rigid Bridging, practically eliminate vibration in floors and plaster cracks in ceilings.

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Kalmantruss Steel Joists and Accessories are convenient to use, economical, and easily and quickly erected.

Detailed information will gladly be furnished in regard to these and the many other advantages obtained by using Kalmantruss Steel Joists and Accessories. Communicate with any of the district offices listed below.

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SUBSIDIARY OF BETHLEHEM STEEL CORPORATION
General Offices: Bethlehem, Pa.
District Offices: Albany, Atlanta, Baltimore, Boston, Buffalo, Chicago, Columbus, Detroit, Houston, Milwaukee, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Syracuse, Washington, D.C.
Export Distributor: Bethlehem Steel Export Corporation, 25 Broadway, New York City.
Built-in telephone convenience returns three definite dividends. It attracts prospects, converts them into customers, and keeps them content with their purchases. Of the three, the last is not least important. The builder of the home pictured on this page employed telephone convenience to such good advantage that its owner says: "—complete and fully adequate telephone service has brought to my home a genuine comfort and convenience; and the pleasure of knowing that my family can use the telephone without wasting time by taking many unnecessary steps."

Telephone convenience is provided for in the residence of Mr. F. T. Holliday, 5665 Sunset Ave., Indianapolis, Ind., by built-in conduit connecting nine outlets, including one in the basement and one in the third-floor servants' quarters. H. L. Simons, Architect and Builder, Indianapolis.

Telephone convenience is easily and economically arranged by including telephone conduit in walls and floors during construction. It conceals wiring, protects against most-service interruptions, and permits telephone outlets to be located wherever they're wanted throughout the house. Plan for it in new and remodeled residences. The local telephone company will advise and assist you, without charge. Just call the Business Office.
### NOTICE TO ADVERTISERS

Forms for the May Number of the American Builder and Building Age will close promptly on April 15. New copy, changes, orders for omissions of advertisements must reach our business office, 105 W. Adams St., Chicago, not later than the above date. If new copy is not received by the 15th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts.

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$1,000 FOR $1.00

What would you give for a proven method of getting building work in your community?

A complete typewritten campaign with advertising copy all laid out, post cards and letter prepared and full instructions for their use. Also instructions for the proper handling of your prospects from this time you get your copy on the above.

Pollard's PLAN FOR BRINGING BUSINESS TO BUILDERS.

The publishers paid several thousands dollars for this timely work, but you may buy it for only $1.00. Join us for it now and see how quickly it helps you get business.

Pollard's Plan for Bringing Business to Builders

These days everyone business before spending $1.00, but no live builder will regret the investment of that sum in this completely outlined scheme for creating business in your community.

Nationally known sales specialists have made a careful study of the best methods of securing building jobs and have prepared copy for advertisements written in form letters and postcards and given complete instructions on how to get your prospective customer and how to handle him clear through to the finish of the job. Nothing is left to your imagination—it's all in black and white, just as if the plan had been prepared especially for you at a cost of a couple of thousand dollars.

Send $1.00 for this tested plan now, and see how quickly it produces for you.

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### FAST COLORS that sell fast

Ricketson's colors, made in large variety of shades, retain their original tones for ages—Easily applied, economical to use. These are vital factors for fast selling.

Pollard's Plan for Bringing Business to Builders

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### MORTAR CEMENT PLASTER

Ricketson's colors, made in large variety of shades, retain their original tones for ages—Easily applied, economical to use. These are vital factors for fast selling.

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### MASTER WOODWORKER MFG. CO.

Brush & Congress Sta, Detroit, Mich.

Please send me details of your machines as follows:

- **MASTER WOODWORKER**: The original Universal Woodworker with overhead cross cut and underswing rip. Unequaled, with its many labor saving features for use in the Shop, Lumber Yard or on the Job.
- **THE SAWMASTER**: The latest and most modern direct drive cutting machine, only direct drive machine having overhead crosscut and underswing rip. Cuts with great speed and accuracy, wood, tile, brick, etc. Very portable, accurate and easily operated.
- **MASTER FLOOR SANDER**: A regular full-man sander with plenty of power suited for real service.

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### WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE
SETTING NEW STANDARDS DAILY

In every industry, for every kind of hauling problem, Firestone Gum-Dipped Tires are making new records every day, setting new standards for safety, long mileage and low costs.

Firestone construction features make these records possible:

Gum-Dipping saturates and insulates every cotton fibre of every cord with live rubber and transforms the cotton cords into a tough, strong sinewy unit.

Two Extra Cord Plies Under the Tread give 56% stronger bond between tread and cord body, and 26% greater protection against punctures and blowouts.

Scientifically Designed Non-Skid gives extra safety and longer non-skid wear.

All these are Firestone Extra Values that you can get at no extra cost.

Your Firestone dealer will show you how to reduce the operating costs of your trucks and increase your tire mileage. See him today.

Listen to the Voice of Firestone every Monday night over N. B. C. nationwide network.

Firestone
NON-SKID TYPE
TRUCK BALLOON

TIRES - TUBES - BATTERIES - RIMS - BRAKE LINING - SPARK PLUGS - ACCESSORIES

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