

**AMERICAN BUILDER  
AND BUILDING AGE**

**IS THE BUSINESS  
JOURNAL OF THE  
ACTIVE MEN OF THE  
BUILDING INDUSTRY**

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# AMERICAN BUILDER AND BUILDING AGE

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**MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS  
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**WINDOWS**  
*worthy*  
**OF YOUR**  
**FINEST**  
**CREATIONS**

**I**N designing any structure, whether home, office building, or public institution, you give a generous amount of careful consideration to its windows. Their spacing, location, shape and size are important factors in the beauty of the finished edifice. And equally important is the glass with which these windows are glazed.

Windows glazed with Pennvernon Glass are worthy of your finest creations. For Pennvernon is a window glass which approaches the polished perfection of plate glass more nearly than any other sheet glass.

The exclusive Pennvernon method

of manufacture imparts to this glass three qualities which distinguish it from ordinary window glass. First, a brilliant, lustrous finish on both sides of the sheet that gives Pennvernon far greater beauty and reflection, and enables the glass to be glazed either side out. Second, a remarkable transparency and freedom from defects which guarantees clean-cut, undistorted vision. And third, a new denseness and smoothness of surface which results in better

resistance to wear and abrasion, and consequently, in longer lasting beauty.

Make sure of windows worthy of the buildings you design. Specify Pennvernon Window Glass. It is available in single or double strength, and in thicknesses of  $\frac{3}{16}$ " and  $\frac{1}{2}$ ", at the warehouses of the Pittsburgh Plate Glass Company in all principal cities, and through progressive glass jobbers and leading sash and door manufacturers. Write us for samples to examine. Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Penna.

**PENNVERNON**  
**WINDOW GLASS**



# AMERICAN BUILDER

and Building Age

## WHAT ARE YOU CONTRIBUTING TOWARD A CHEAPER, BETTER HOME?

THE head of one of our largest automobile companies recently stated that the public demands a lower priced car for 1933. He said further that all of the automobile producers are bending their efforts in that direction. The automobile people have spent vast sums of money for research and have kept in close touch with consumer demands. The thought advanced by this manufacturer should carry great weight with the producers of homes.

Home building has not yet come under the management of a single head, nor has it become nationalized. The hundreds of producers of building materials and the thousands of distributors and fabricators operating independently in the communities throughout the country do not have the benefit of co-ordinated effort. A product here and a designer or fabricator there may have developed a valuable idea of general interest to the building industry and to the public. The AMERICAN BUILDER always has and will continue to put these ideas before the industry. Its leadership in circulation and influence gives it an opportunity and responsibility of unusual importance at this time.

Tell us what you've done to help the building industry cope with other modernized industries in meeting public demand in 1933 and the future.

## CONSTRUCTION CENSUS

IN 1929 the Bureau of the Census started to gather the facts which comprise the first Census of the Construction Industry. From releases received to date it is evident that a great work has been accomplished by Dr. Alanson D. Morehouse and his staff in charge of this work,—a work of value to the manufacturer of building products, as well as to architects, builders, contractors, dealers and others interested or engaged in construction work.

What is happening to the Census of the Construction Industry during this time of political turmoil? Have the politicians decided to allow this really valuable governmental service to lapse in favor of jobs for needy relatives and favored insiders? We would like very much to know what provision has been made in the budget to continue this work, so valuable to an industry,

which holds place in the front line of our battle against economic ills.

The provision of shelter is probably the second oldest activity of mankind; yet, in the matter of statistics, our great building industry was entirely overlooked prior to the 1930 Census. By continuing the Census of the Construction Industry much of the guesswork of former years may be eliminated, at an insignificant cost per county, with real benefit to a basic industry.

## JOURNALISTIC HONORS

READERS of this publication will no doubt share the pleasure which our editorial staff experienced on learning that the AMERICAN BUILDER had been awarded First Place in the 1931 Competition for Best Editorial published in a business journal. The editorial which the committee of judges placed first was published in our December 1931 issue under the title, "Home Financing Relief in Sight." It analyzed and endorsed President Hoover's Home Loan Bank proposal, urged the building industry to rally to its support, and was a primary factor in the campaign that finally won the fight for the Federal Home Loan Banks.

This competition for editorial excellence is held each year by the Associated Business Papers, Inc. It is a three-part competition, awarding first prize (1) for the best single Editorial, (2) for the best Article or Series of Articles and (3) for the most outstanding Editorial Service to the industry.

In the 1931 Competition, two of the first prizes came to Simmons-Boardman publications. The editor of the AMERICAN BUILDER received first prize on the Home Loan Bank editorial and "Railway Age" won first for Best Series of Articles. This award was made to our associated publication for the Operating Economy Series of 25 articles by nine members of the *Railway Age* staff, published in the latter half of 1931, to outline the best economic practice in each of 25 railroad activities.

It is significant that in spite of the depressed condition of the two major industries—building and the railroads—served by these publications, there remains in them a vitality which, translated into words, wins two out of three of the highest awards in the field of business journalism.



DOUBLE WINDOWS SHUT OUT WINTER'S COLD

# NOW Is The Time To Fight!

## AN EDITORIAL

**G**UTS and the old time fight—that's what'll bring business back. And who's going to lead the fight? Why, the man who makes goods or furnishes a service.

Of course you understand, we're talking about this home building business. All concerned have been on the retreat now for about four years. Some of us have concluded that it's cheaper to stop and fight than it is to keep on running.

But no battle was ever won without a plan. No single unit in this industry can produce a plan that the others will follow. The home building industry has tried that now to our own knowledge for twenty years. There's too much internal competition.

While manufacturers have squabbled among them-

selves, outside forces have come in and are playing havoc with business. It has actually reached a point where millions of dollars in national consumer advertising are being swept aside like chaff. Can you imagine our big manufacturers with millions invested in plants and thousands in advertising, retreating further from these hit and run artists? Are we going to stand by and let a lot of out-of-town slickers with nondescript goods take the business away from our local contractors and dealers? Not the AMERICAN BUILDER—not without an awful struggle.

Our plan for getting the "Home Town Builders" busy all over the country is developing in fine shape. Already leadership is beginning to come to the rescue in many localities. We propose to develop leadership



and rally the local building industry in every community in this country.

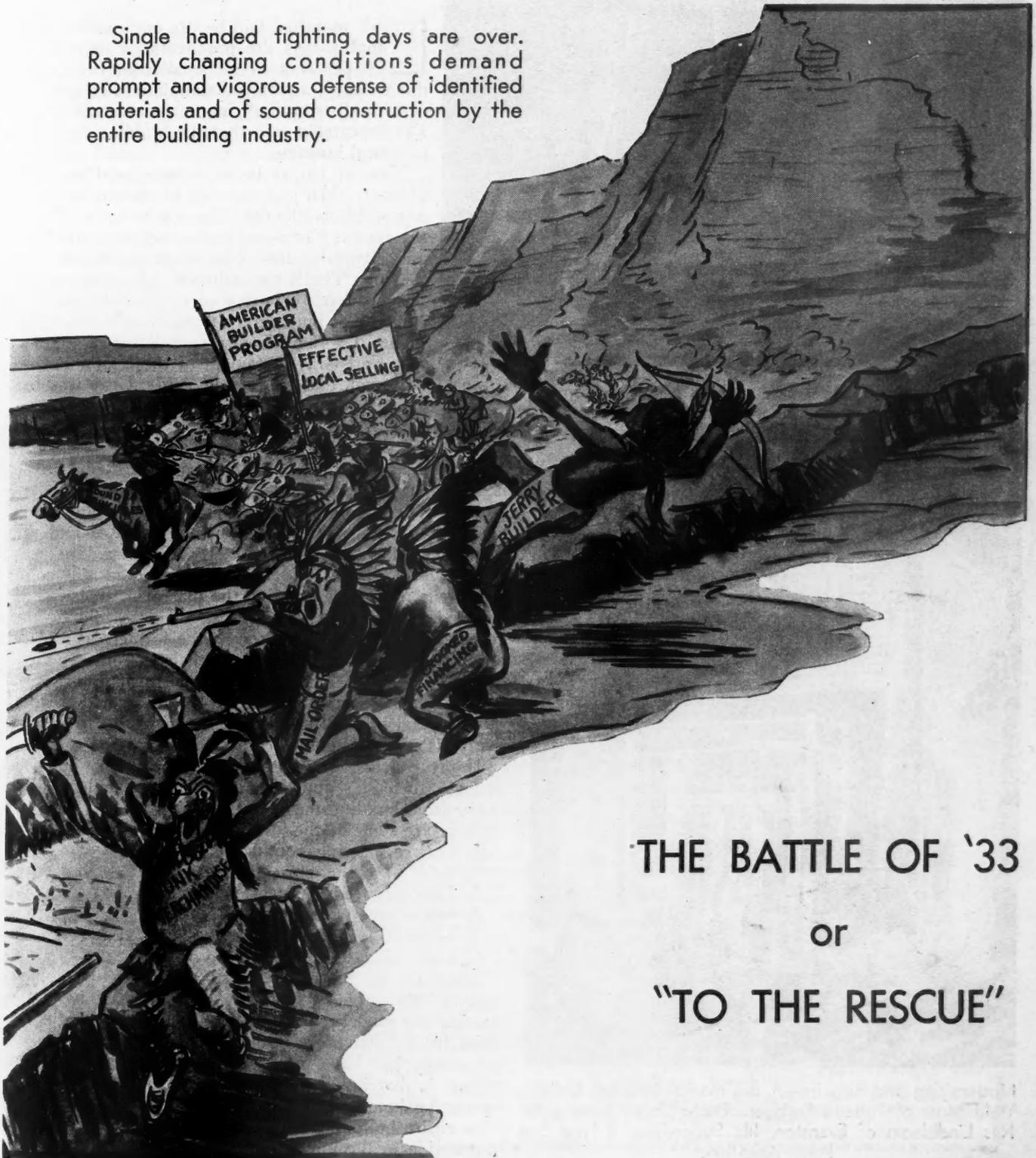
This business of home building is a local business. It's in the hands of local interests. Right now these local interests are wondering what has become of those big manufacturers who used to talk so much in the popular magazines about the quality of their goods.

Here's the conclusion this publication has reached, fellows—"The final endorsement by the local contractor and distributor of building materials is more valuable than any appeal to the general public the manufacturer

can make." Check with us on that and then see if you can follow on to this—"The problem of the manufacturers is that of raising the efficiency of the local builders and dealers, and of helping them lower the cost of distribution and of good construction with dependable, advertised, branded goods fabricated or installed on approved specifications."

If you can agree that far and still compete for the business like white men, then line up with the AMERICAN BUILDER and let's give these bush whackers the hardest run for their money they ever had.

Single handed fighting days are over. Rapidly changing conditions demand prompt and vigorous defense of identified materials and of sound construction by the entire building industry.

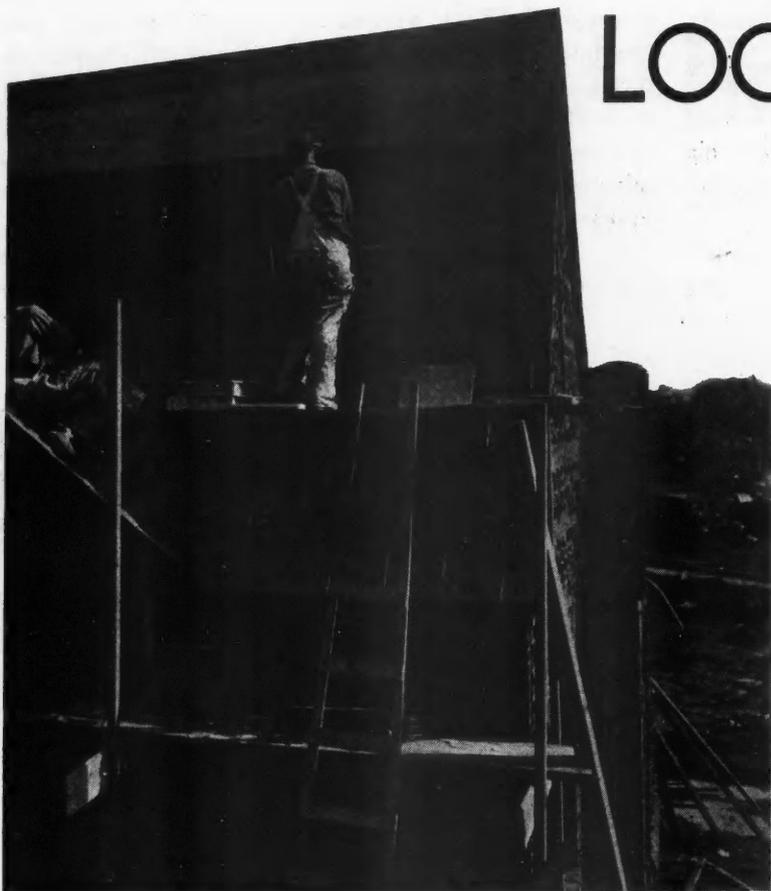


THE BATTLE OF '33  
or  
"TO THE RESCUE"

# LOCAL PROBLEMS

By L. R. PUTMAN

Marketing Editor, The American Builder



Home Building is a Local Industry and Must Be Promoted Locally.



Modernizing and Repairs—A Big market in Small Units—Yield Most of Today's Business. Photo Shows Contractor Nils Lindbloom of Evanston, Ill., Supervising a New Sun Porch Addition.

LAST month, I laid before our readers, and that means the producers of more than 70 per cent of all small construction in this country, a plan to "stimulate sales and cut cost of distribution" in the local community. I've repeatedly said that the building business is a local business.

Now, if you've never done a local building business, then you may not be able to visualize our problems like the fellows who have. That's the reason I've always gone out into the field and chewed a little tobacco with the man on the job. That's the only safe place to get the information. This way of laying out a plan in some office building a thousand miles from the scene of action always reminds me of a story Mr. Carl Gray, president of the Union Pacific Railroad, told me one day. Mr. Gray was for many years president of the Frisco Railroad

which runs through Fayetteville, Arkansas, a country town where we both grew up.

He said a cotton loading platform was found to be needed; and ordered in at a small town in South Arkansas. The engineer in St. Louis got busy and drew up plans for the platform. They were O.K'd and the crew went down to install it. Mr. Gray said he was going over the road and his car stopped at the point where the men were building the platform. He walked out and asked the purpose of it. He was told by the foreman that it was to be used by the farmers as a place to unload the bales of cotton from their wagons. In view of the fact that the surface of the platform was sixteen feet from the ground, Mr. Gray ordered the work stopped and wired the engineer to visit the town and draft his plans to fit the requirements.

If my conclusion is right, that the building business is local, then let's approach it from that angle. What is the local building business up against?

Here are some of the hurdles they've got to jump:

1. Lack of buying confidence.
2. Lack of cash or credit.
3. Lack of need for new construction.
4. Oppressive taxes and legislation.
5. Lack of local leadership.
6. Lack of a sound marketing plan.

Some of the more enterprising manufacturers have attacked the problem from the local angle. They have worked out modernizing and "build now" campaigns for their local distributors. Some of these have cost a lot of money but have proved rather disappointing. The reason is that building or even remodeling or repairing cannot be done with the one item that is being promoted. The entire building industry moves as a unit. There is a question in the minds of the public as to whether or

# AS OF NATION-WIDE EXTENT

## Confront the Building Industry

not building is worth its present price. The men in the business know it is but they've got to sell the idea first to the local industry and then to the local public.

Bank statements show many people have cash or credit. In addition, the Reconstruction Finance Corporation, Home Loan Banks, commercial credit corporations, insurance companies, private mortgage buyers, individual manufacturers and building and loan associations are operating more freely every day and a campaign for confidence in building will affect all of these. I believe the building industry should keep right behind home financing from every angle and see to it that proper sources are developed.

As to the need of new construction, that, like the others, is purely local. Surveys show that need for new construction is becoming apparent in many communities, especially in suburbs, in the smaller towns and on the farms.

We all feel, however, that for the next several months repairing, remodeling and general improvements will furnish most of the building demand.

Taxes and the cost of government are under fire all over the country and adjustments are being made. The

AMERICAN BUILDER was first in the field on that fight and will stay right behind it and do its best to keep the building industry interested in the fight.

Local leadership and a sound marketing plan go hand in hand. Our plan is to rally the local industry around the home town paper in every community in this country. With a friendly press supplied with the proper news and promotional matter, we have the most effective setting possible.

To follow this through to the consumers, we propose to co-operate with the manufacturers of dependable goods in educating the local interests on effective marketing. This plan brings into the picture all local interests and its basis is "a lower cost of good construction." That means constant research for sound ideas in distribution, promotion, merchandising, construction and financing.

Every month the AMERICAN BUILDER will present these developments to its readers. Local interests who will in any way be affected by a revival of the building industry will be given their proper places. Prosperity will not come back until building starts and it is the duty and the opportunity of all to fall in with us and help us get it started.

Salem, Illinois,  
Nov. 17, 1932.

Mr. L. R. Putman,  
Marketing Editor,  
THE AMERICAN BUILDER:

Your article in the November issue of the AMERICAN BUILDER was read with great interest by me, for I feel sure you understand the Retail Dealers' problems.

The Building Industry ranks among the greatest and it is necessary that it revive before we can end the depression.

This new Home Town Editorial service you speak of interests me greatly. I believe I can get one of our local editors to use the service if it is not too expensive. I would like further details. I have been a steady customer of his for the past 5 or 6 years on account of a small paper (advertisement) I run in each issue, copy attached. He seems interested in my efforts and I believe I can get him to do some boosting on his own hook. C. A. PORTER,  
Charles A. Porter Lumber Co.



### "Own Your Own Home First" Porter's Home Builder



Vol. 6. Published Weekly by C. A. Porter Lumber Dealer, Salem, Ill. No. 21

#### EDITORIAL

##### A PAYING INVESTMENT

Insulate your attic and save the entire cost of the improvement in two years—and do it at the present low cost of materials and labor. We have been advocating such an improvement to the home owners of this community for several years and those who have followed our advice have been well repaid for their confidence in our judgment. It is hard for one to realize what a difference insulation will make in the comfort of any home—and incidentally what a difference it will make in the fuel bills. Insulation keeps the heat in the house where you want it in the winter time—keeps it from seeping out through the roof—and keeps the heat out (at least a large portion of it) in the summer time. It is an improvement that can be made with slight expense and one that will never be regretted by any home owner. Of course we would be glad to consult with you regarding this as well as any home improvement—we are home doctors.

##### EVER THINK OF THIS?

Why not cut out a few joy rides and get enough paint to make your home look life new. A few dollars spent for paint will "work magic" on the appearance of your home and prolong its life many years. Our High Standard Paint is winning new friends every day—and holding them—because it is a quality product in every sense of the word. You can buy it now at bargain prices—to finish out the season. Tell us your needs.

##### STOP THIS LOSS

If your roof has weak spots and you let it go this winter, you will burn enough fuel to replace the heat that will escape through the roof to pay for the improvement, and miss the comfort to boot. Let us help you solve your problem with Mule-Hide. The same high grade quality at the lowest prices in history. Buy while you can realize this enormous saving—and don't buy anything until you see Mule-Hide and get the price.

##### PLENTY OF REASON

Irate Papa: "What do you mean by bringing my daughter home at this hour?"  
Young Fella: "Well, I gotta be at work at eight o'clock."

##### PORTER'S POINTS

##### (Most of Them Begged or Swiped)

Lots of people have a good aim in life but fail to pull the trigger. We have heard it said that the stock market needs a Moses and plenty of bull rushes.

Household hint—Keeping an egg or a husband in hot water continually results in both becoming hard boiled.

If you must carry your troubles around with you, carry them in a pocket that has a hole in it.

Poise is the quality that enables you to buy a new pair of shoes without seeming to be aware of the fact that you have a hole in your sock.

##### A SECRET OUT

Mother: "Do you know what happens to little boys who tell lies?"

Son: "Yes; they travel for half-fare."

##### TELLS NOTHING

First Man: "Do you talk in your sleep?"

Second Man: "No, my wife says I am very exasperating—I only smile."



# "Let's Adopt a New Plan Of Battle"\*

By **ARTHUR A. HOOD**

Executive Vice President  
National Homes Finance Corporation

**A**LL business is in a war against depression. We of the Home Building Industry have an important sector of the line—we think the most important sector—and we have been in steady retreat for six years. This year the retreat

has been almost a rout and we are literally fighting with our backs against the wall.

We have lacked co-ordination of manufacturer, dealer and contractor fighting units. We have spent more time fighting each other than we have attacking the consumer front.

The manufacturer has been commodity-conscious, the dealer distribution-conscious and the contractor price-conscious.

The contractor has been fighting in a cheaply competitive price situation which placed a premium on poor quality of materials and construction at the lowest possible price. He was helpless because there was no standard by which to gauge comparative quality.

The strategy of the dealer has been to fight for profit along three lines—protected distribution, territorial protection and price stabilization.

These policies have resulted in the complete breakdown of price associations in almost every market in the country, a constantly increasing stream of direct shipments on the part of manufacturers and wholesalers, and now trucking is rapidly breaking down territorial barriers.

The manufacturer has attacked along three lines—first, forced commodity distribution; second, opening new territories and dealer accounts (without regard to duplicate warehousing costs and distribution wastes), and third, price stabilization.

The results are—thoroughly demoralized commodity markets and selling costs that have grown all out of reason.

Nine billion dollars invested in plants for producing building materials and more than a billion dollars in distributing operations—a ten billion dollar Industry with exorbitant selling costs within the Industry and practically no advertising, sales promotion or financing program against the consumer. Ten billion dollars, deeply in the red on 1931-32 operations.

The city of Detroit built more homes in a single year than the probable total of residence construction in the entire United States in 1932.

And yet our disorganization and weakness in the face of conditions in the last six years have created an unprecedented opportunity for us.

Demand has been piling up in the Home Building Field until our statistical position is about what it was

at the end of 1921—obsolescence and doubling-up being considered.

The best authorities agree that there is a shortage of a million or more homes in the United States.

Any intelligent person admits that there are two billion or more dollars of immediately needed repairs and improvements to existing homes.

In the face of this demand there has been practically no advertising, very little sales promotion and extremely limited extension of financing terms to the consumer by our Industry.

Goods sold to the dealer by the manufacturer and to the contractor by the dealer are not completely sold—a completed sale is a paid account. Dealer and manufacturer must co-operatively see the sale through to the consumer.

Manufacturers in the future are going to seek out, solicit and cater to sales outlets, not because they have a warehouse in which to store materials (they can get warehousing done at much lower cost), but because the selling factors are creators and directors of consumer sales.

Out of the bitter experience of the past six years in our Industry certain conclusions inevitably arise:

That neither the manufacturer, nor retailer, nor contractor is in a position to solve his individual problems or those of the Industry without the co-operation of the others—

That any solution of the marketing problem will be found in co-ordinated action based on a *mutuality of interests*—

That if we *can* evolve a new plan of battle we have before us practically a virgin field of marketing opportunity.

Our goal must be a common objective for manufacturer, dealer and contractor, the supplying of a well designed line of homes and other small construction units to the consumer, properly constructed of good materials and safely and sanely financed, and at a cost that eliminates much of the waste in distribution and engineering.

If a satisfactory volume of this kind of business can be developed, isn't that exactly what the manufacturer, dealer and contractor want?

Keeping in mind that the job must be done co-operatively—  
(Continued to page 46)

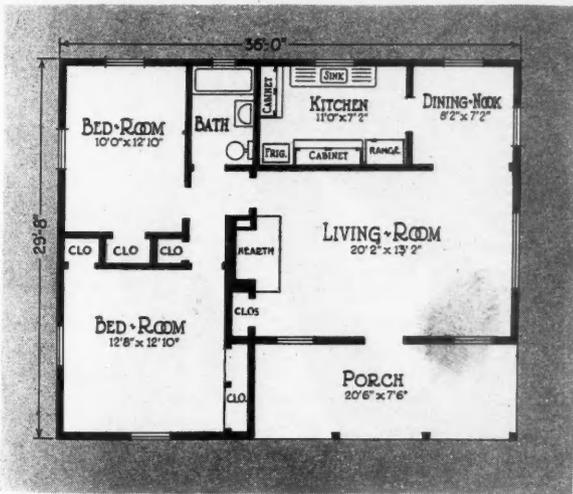
## HOW COST KEY WORKS—

Every house in this issue carries a COST KEY to give the exact cost in any town by comparing it with a BASIC HOUSE figured by contractor and dealer together.

Here are what the Cost Key figures mean, using the C. C. Merritt house on the opposite page as an example.

1,104 Cost Rate	132 Lin. Ft. Founda- tion	912 Sq. Ft. Floor	38 Yds. Excav. Ptr Ft. Deep	14 Sqs. of Wll	13 Sqs. of Roof
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\*Portions of an Address to the National Retail Lumber Dealers Convention, Louisville, Ky., Oct. 26, 1932.



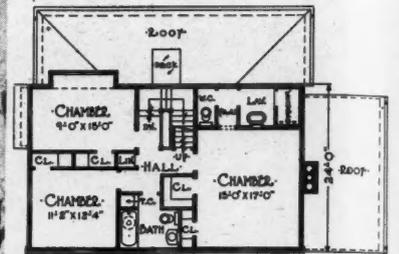
This little cottage designed and built by C. C. Merritt, New York builder, has many good qualities. The exterior is simple but attractive, making use of shingles and a stone porch. The floor plan is designed for modern living. Cost key is 1.104-132-912-38-14-13.

## Home Plan Section Showing Sixteen Recommended Designs

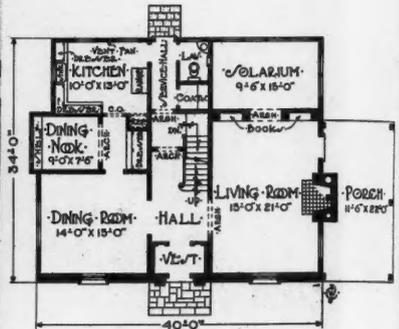
**H**OUSES shown on the following pages are selected for their special appeal to 1933 buyers. Every house is designed by an architect and is thoroughly tried and practical.

**E**VERY house carries a cost key which makes it possible to figure the exact cost in any town. This is done by comparing the figures with a basic house estimated by the local contractor and dealer working together.

**F**LOOR plans are accurately drawn. For more convenient study they may be enlarged to the customary 1/4 inch scale by the photostat or other enlarging process.



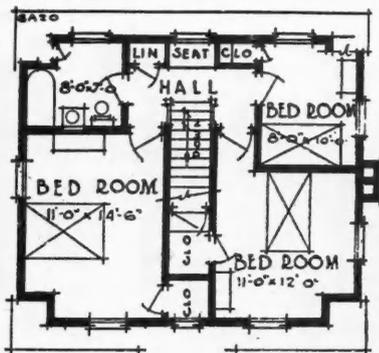
• SECOND FLOOR PLAN •



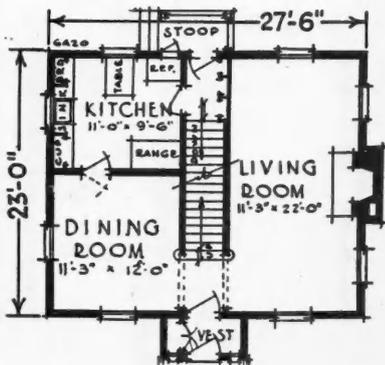
• FIRST FLOOR PLAN •

Featured on our front cover, this house is an interesting variation of the colonial type. It was designed by D. Wentworth Wright, and is located in New Jersey. The cost key is 2.316—150—1357—56—24—21.

### Two Small Houses Expertly Planned



SECOND FLOOR



FIRST FLOOR

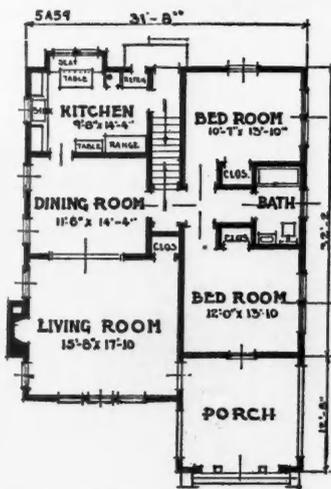
The Dutch colonial of this type makes practical use of every inch of floor space. It is Architects' Bureau design No. 6A20. The cost key is 1.456—109—667—29—19—11.



© Architects' Small House Service Bureau

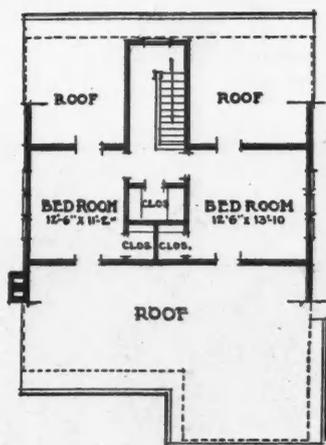


Here is a modernized form of the old western bungalow type. It has been made into a good-looking and attractive house without sacrificing its practical qualities. Cost key is 1.838—140—1112—46—19—17. Design No. 5A59.

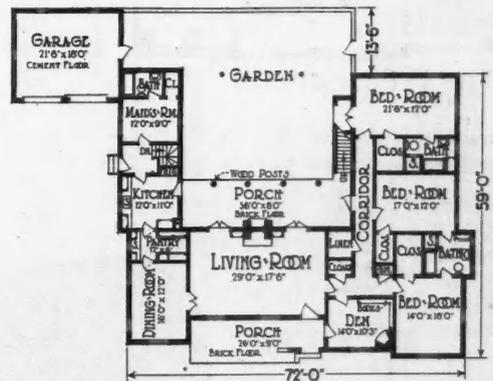


© Architects' Small House Service Bureau

FIRST FLOOR

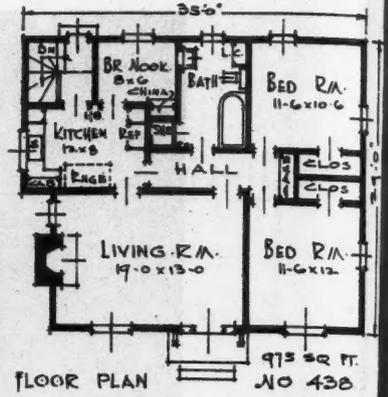


SECOND FLOOR

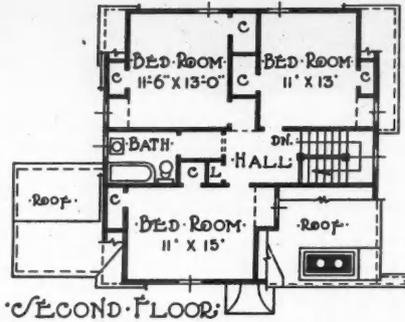
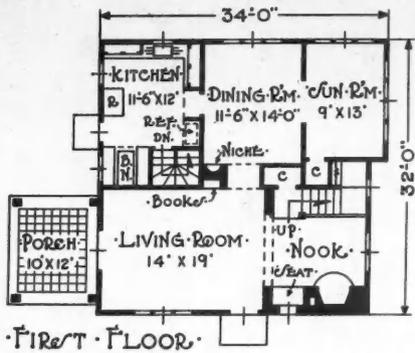


This type of house is popular in the southwest, and is called the pueblo style. M. H. Starkweather, of Tucson, Arizona, is the architect. The cost key is 3.030—402—3325—138—49—36.





A small home from California. A. B. Cleveland design No. 438. It gives a lot of value at low cost. The cost key is 1.074—128—973—41—16—14.



**Low Cost But Have High Sales Appeal**



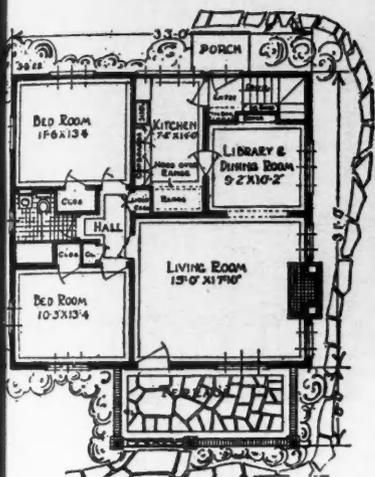
Many people like this type of extreme English house with its sharp gables, stained shingle and stucco exterior. The architect is D. Wentworth Wright. Cost key is 1.971—132—1052—44—24—22.

### French In Character



© Architects' Small House Service Bureau

This stucco bungalow, No. 5-B-25, has an unusual exterior that is very charming and yet very simple. It is a small house but does not look box-like. The floor plan is modern and practical. Cost key is 1.183—130—1023—43—12—13.

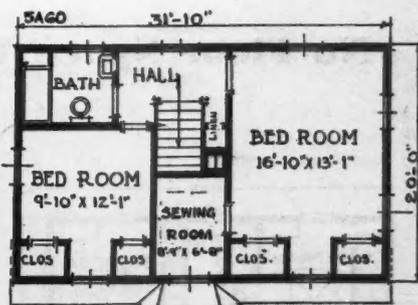


FLOOR PLAN

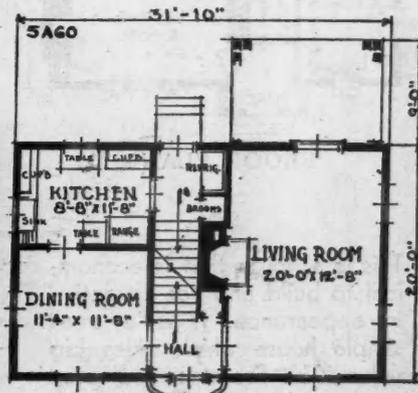


© Architects' Small House Service Bureau

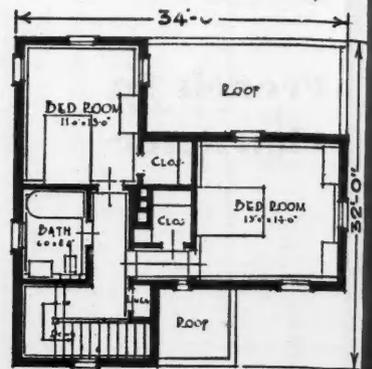
This brick Dutch colonial is a common-sense house which has a well-tried-out plan that is thoroughly practical and livable. The fire-place can be located inside as shown on plan or outside as in the photo. Cost key is 1.433—104—640—28—16—14. Design No. 5-A-60.



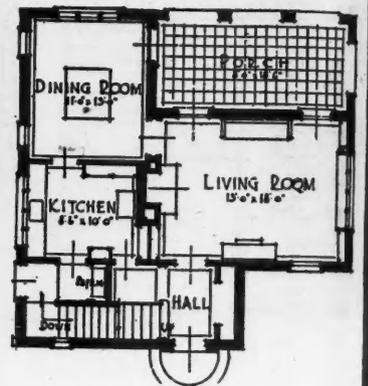
SECOND FLOOR



FIRST FLOOR



SECOND FLOOR

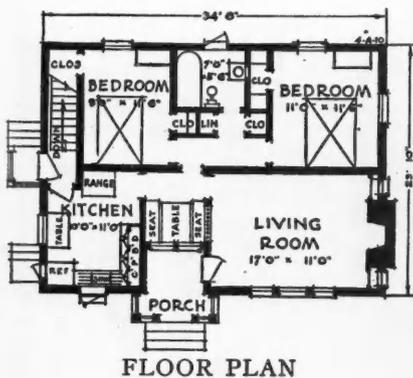


FIRST FLOOR

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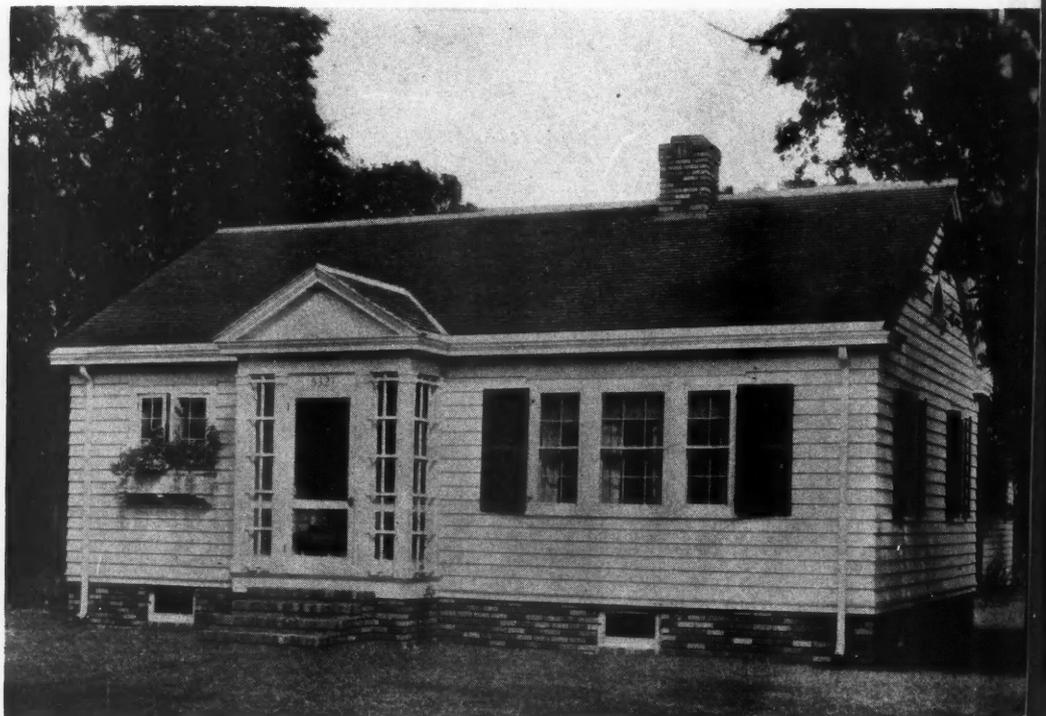
Well-placed windows, good proportioning, and a compact plan are features of this house which is designed in Italian architecture. Reversed floor plans are shown. The cost key is 1.718—132—786—34—25—11. Plan No. 5B1.

### No Floor Space Wasted



FLOOR PLAN

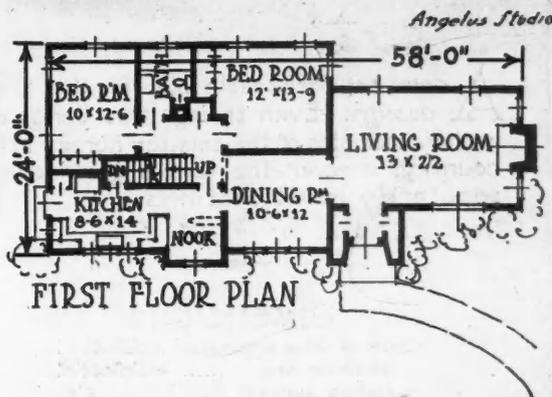
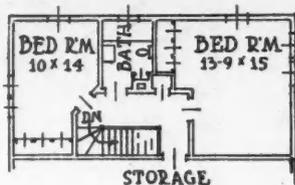
This is a house that is economical to build and yet attractive in appearance. It is a small simple house which gives big value. The fire-place indicated on the plan was built in this case on the inside wall. Cost key is 1.016—117—810—35—15—12. Design No. 4-A-10.



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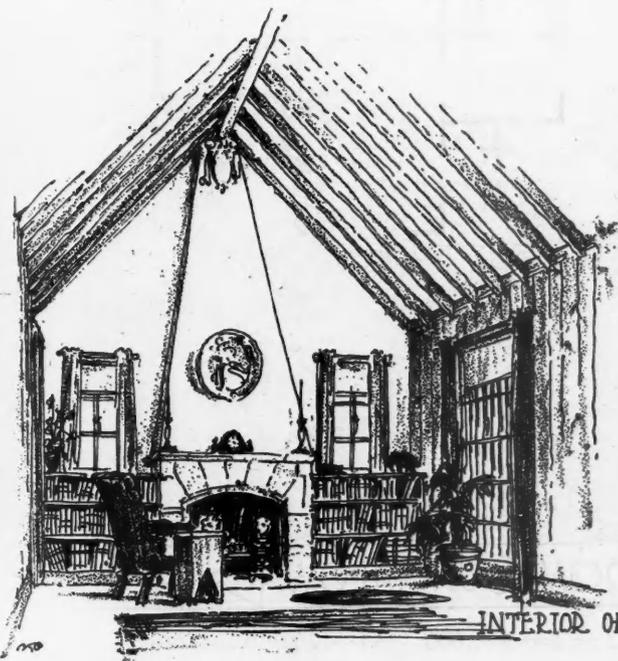
Home of Mr. Claude W. Kemp, Portland, Oregon. Earl G. Cash, Architect. Cost Key is 2.047—168, 1236—52, 24—21.



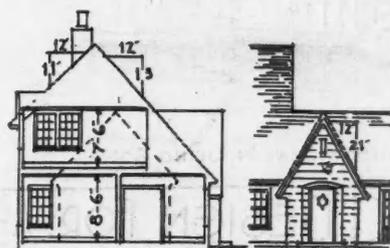
The unusual charm of this house is achieved by a broad expanse of roof relieved by sharp gables of unequal value nicely placed. The high roof provides space in which two rooms and bath may be added as the owner requires.

### Gables Give Charm

The wide window with a single fixed sash from eaves to floor is a distinguishing feature of the living room. The sketch shows a raftered ceiling without horizontal tie beams, the omission of which necessitates a ridge beam of sufficient strength to support the rafters at the center.

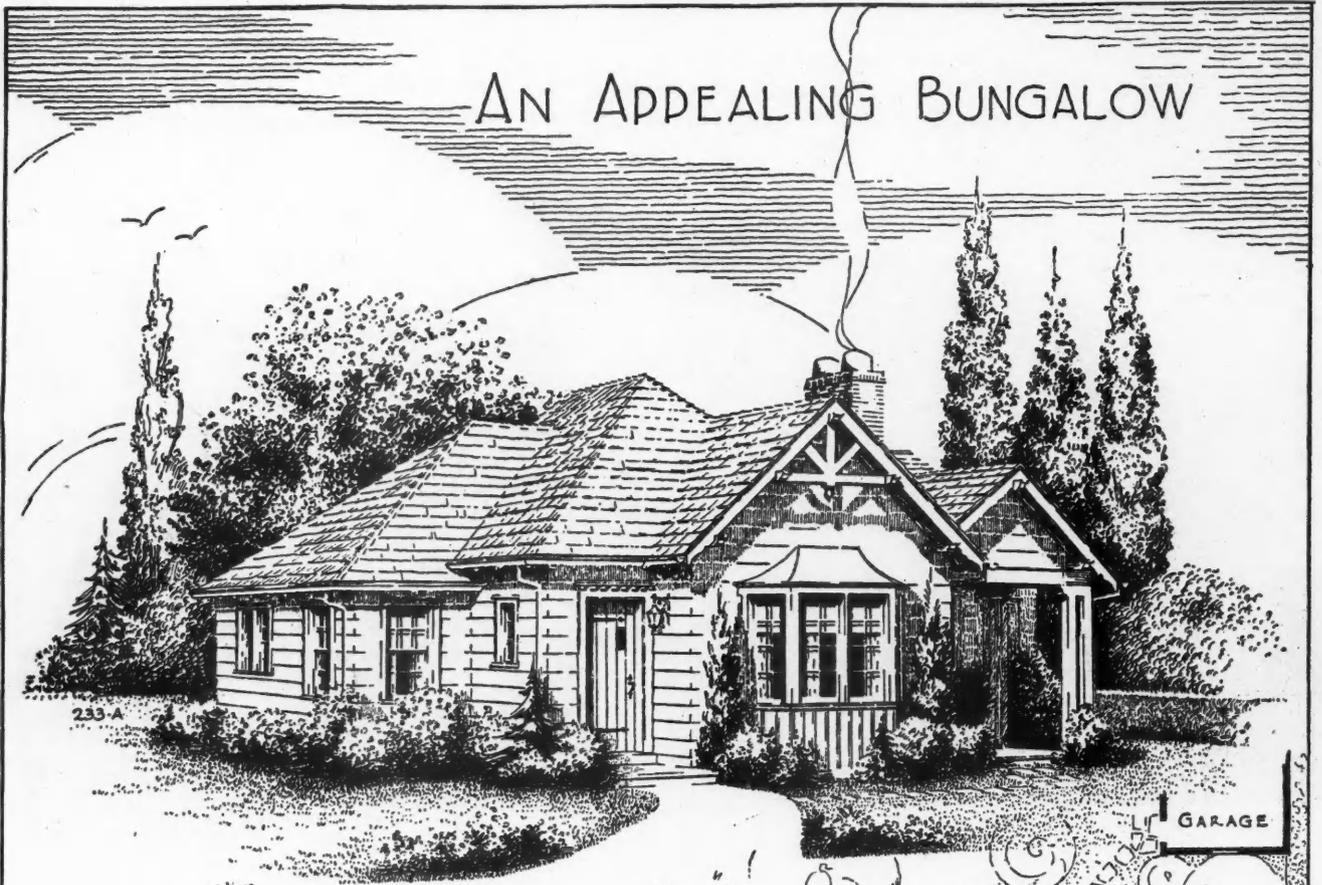


INTERIOR OF LIVING ROOM



SECTION

ELEVATION

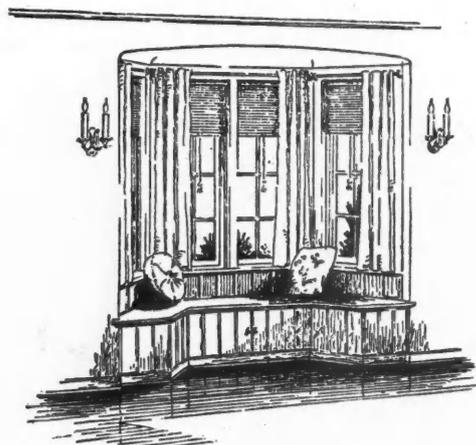


# AN APPEALING BUNGALOW

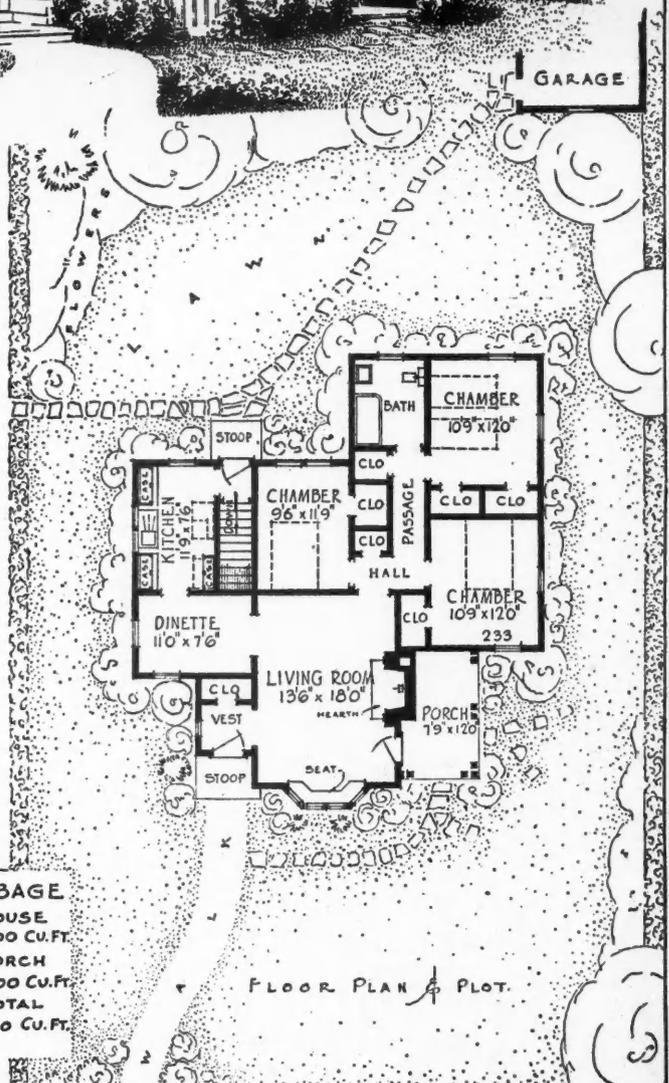
A compact serviceable plan for this trim design. Even though this bungalow is characteristic of the smaller homes in the country, it never-the-less is growing in popularity in all sections.

## DIMENSIONS

SIZE OF MAIN BUILDING... 40'0" x 41'6"  
 SIZE OVER ALL..... 42'0" x 44'0"  
 CEILING HEIGHT..... 8'0"  
 HEIGHT OF BASEMENT..... 7'0"



BAY AND WINDOW SEAT IN LIVING ROOM.



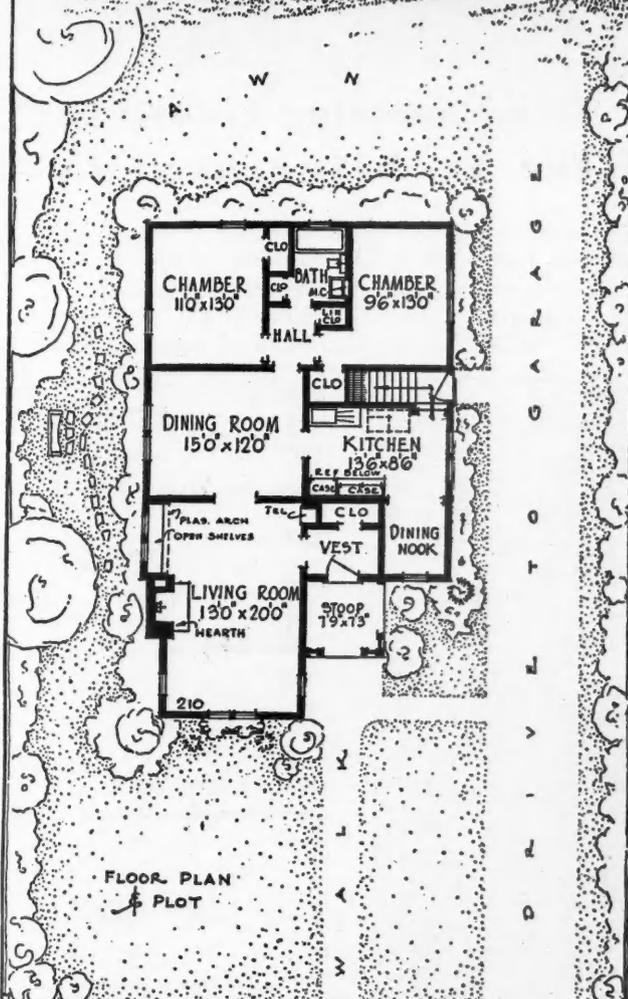
CUBAGE  
 HOUSE  
 23700 CU. FT.  
 PORCH  
 600 CU. FT.  
 TOTAL  
 24300 CU. FT.

FLOOR PLAN & PLOT.

NPS
DESIGN FOR A SIX ROOM BUNGALOW
233A

An attractive National Plan Service design No. 233A. Cost key is 1.600-164-1208-51-16-22.

# TWO CHARMING DESIGNS for ONE FLOOR PLAN



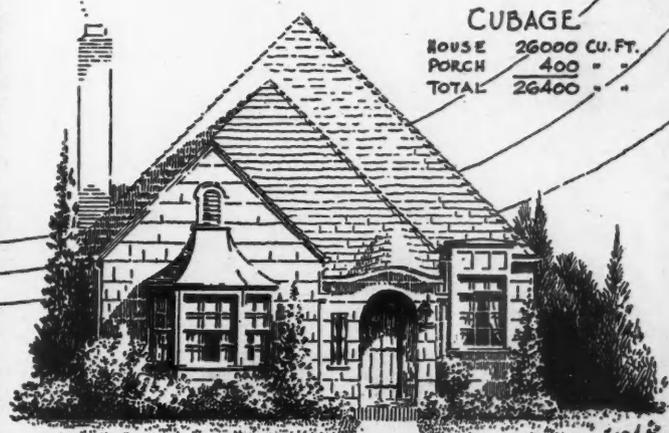
The popularity of the Colonial bungalow design in this country is well deserved. The style is attractive and has a certain simplicity that is much admired.

### DIMENSIONS

SIZE OF MAIN BUILDING.... 30'0" x 47'0"  
 SIZE OVER ALL..... 31'0" x 48'0"  
 CEILING HEIGHT..... 8'6"  
 HEIGHT OF BASEMENT..... 7'0"

### CUBAGE

HOUSE	26000	CU. FT.
PORCH	400	" "
TOTAL	26400	" "



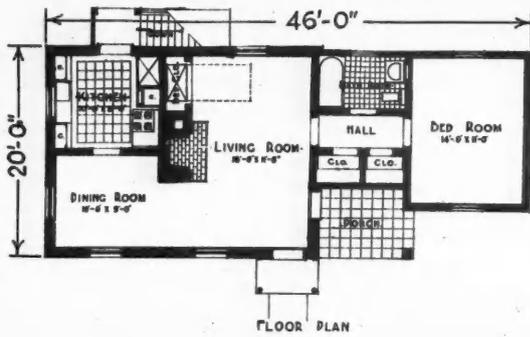
ALTERNATE EXTERIOR OF FRENCH DESIGN - PLAN B

## DESIGN FOR A FIVE ROOM BUNGALOW

A popular National Plan Service design No. 210A. Cost key is 1.436—154—1234—51—20—17.

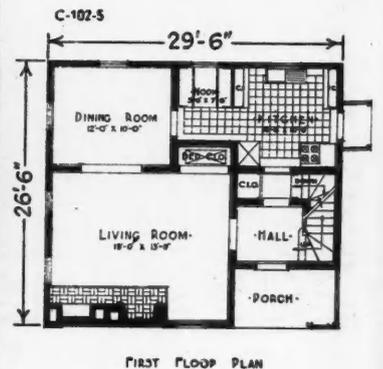
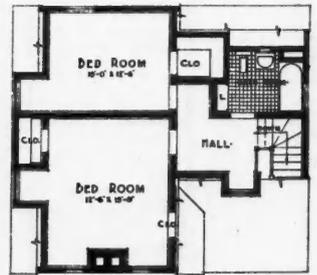


This Virginia colonial with its pleasing combination of brick and wood in exterior walls has a character that fully reflects good architectural design. Floor plan is compact and has efficiency of a five-room house. Total cubage is 15,150 cubic feet. Cost key is .948-135-787-34-15-12. Guild design No. C-101-4.



### Two Charming Colonials By The Architectural Guild

This Morristown colonial hails from northern Jersey. A pleasant feature of the living-room is the big fire-place with adjacent built-in book-cases extending to the corner. A well-planned home, with much architectural charm. Cubage is 17,815 cu. ft. Cost key is 1.372-107-665-29-20-12. Guild design No. C-102-5.



# THE SMALL HOUSE OF THE FUTURE\*

By L. E. OLSEN, Architect

- Ⓒ *How Costs Can Be Cut*
- 
- Ⓒ *New Ideas to Improve Quality*
- 
- Ⓒ *What the Women Want*
- 
- Ⓒ *Reducing High Cost of Financing and Carrying Charges.*

EVERY manufacturer, engineer, architect, sculptor, and poet is today inventing new methods and materials for residence construction. There is nothing else for them to do; it is good mental exercise, and prevents insanity and high window jumping.

The trouble with each manufacturer is that he tries to use his material for the entire structure and often in the wrong place. Of course, if more of one material or trade could be used in a building, some of our difficulties would be solved and construction would be speeded up, as most of the time lost in residence construction is getting the trades on the job at the right time. We all know, however, that certain requirements demand their logical material, and even if you could fool the dear public, you cannot fool the elements for long. Brick has proven itself to be the ideal facing material for exterior surfaces. Ages of usage have proven it, and we are convinced that masonry for the exterior walls of a residence is the economical and proper material.

Savings in the cost of the small home of the future will not come from a change in the exterior wall materials used, but will come chiefly from the elimination of non-essentials in design, from shop fabrication of the interior and from lessened financing cost for the whole structure.

## New Schemes May Have Merit

As I have before mentioned, there are a great number of new methods of construction, most of which have no merit; at least, the many we have investigated have little to commend them. But out of all of the experimenting and research, something good may develop.

In Chicago there are experiments being made on reenforced brick masonry which make me believe we will have a cheaper and better method of construction and it will be all masonry. Its possibilities are unlimited and should give you gentlemen much food for thought as I personally think it is the greatest development in the art of building construction since the introduction of reenforced concrete. I can

\*Portions of an address presented at the joint meeting of the American Face Brick Association and The Face Brick Dealers' Association of America, on November 2, 1932, at French Lick, Ind.



L. E. OLSEN  
of OLSEN  
& URBAIN,  
Architects

see the possibility of a precast brick slab delivered to the job with a finished surface having beauty and wearing qualities.

The Century of Progress Exposition in Chicago in 1933 will have on display a number of the new systems of home building, done in the modern style.

These, together with the design of the Exposition, may influence new residence construction. In what direction, no one knows, but my guess is that houses will continue to be built much the same as at present, excepting that the public is asking for lower costs, firesafe construction, permanent materials, less cracks and shrinkage, insulation, air conditioning, automatic heat, with lower interest rates, financing charges, and reduced taxes

## Will Shop-Fabricated Steel Houses Lower Costs?

Can we obtain lower cost through shop fabricated steel homes? First, the public does not want them but it may accept them under pressure; second, their cost cannot compete with wood faced homes, to which class they belong in the economic scale; third, the cost of a brick residence having the same room dimensions as a steel house is the same as the hoped-for mass production cost of the steel house, of course using the same arrangement as the steel design, with no basement or attic, which are the places where the steel design effects the greatest saving. The steel house design advocates the elimination of unessentials and with this idea we agree.

When a designer or fabricator of a steel house or any other of the new types of construction starts to work out his problem, the first man he interviews is the insulation engineer. I have discussed the new method of construction with many of the insulation experts and find that only one of the new types of construction has any merit and that type should be faced with brick veneer. My firm believes in solid masonry exterior walls. We contend it is the best, when all things are considered.

The three important arguments against the panel type of exterior are the joint at panel points, restricted design, and last but not least, labor unions. The labor unions are entirely forgotten in the shop-fabricated house and we all know they are not to be forgotten.

The cheapest of the small houses of the future,

especially in the smaller towns and villages, will be wood. This form of construction is still the cheapest and permits individual design. The next step higher and all those above them will be masonry exterior walls, solid, or veneer on wood or steel frame.

In general, the future methods of construction will be much the same as the present, but we think interior arrangement and materials making up the interior will be improved upon, cheapened, and simplified. Here shop fabrication can come into use.

We believe interior partitions will be improved upon and cheapened.

There will be more use of the combined door jamb and trim in metal, which will not be affected by moisture and will not open up at the corners and will speed up construction at less cost. Lathing and plastering must go out of the small house. Those trades cause the greatest delay and trouble due to moisture in the construction of a building and in the north, in winter, temporary heat is required, with additional cost and bother.

When the masonry is finished and the building is under roof, the carpenter with the use of some form of wall board can continue right on erecting partitions, finish the walls with wall board and lay flooring before finished partitions are erected or after, and while erecting partitions, combined metal trim and jamb lining can be set up, and the walls are finished. Then unit cases, wardrobes, etc., may be set in without waiting for other trades.

The pipe trades could be ready with their roughing in by the time the roof is on and would not interfere with the finishing. With air conditioning or forced warm air, no radiator setting would be required after floors are finished. The public is demanding air conditioning; by this, we mean forced warm air, washed or filtered and humidified. Mechanical cooling is not necessary.

A national survey has been made investigating what women demand in homes, and the following are some of the findings: Just sufficient basement space to accommodate heating and laundering is required. These could be on the first floor near the kitchen. They did not care for attic space but the roof must be insulated. Almost all the women wanted automatic heat; that is, oil burners, stokers, or gas. The women of the lower income families wanted separate dining rooms, while those who could afford homes costing \$8,000 to \$14,000 did not object to dining in one end of the living room or in an alcove.

#### Actual Example of Quality at Low Cost

My firm has just finished taking estimates on a house without basement, having concrete foundation only to a point 4'-0" below finished grade. The black dirt inside of building was excavated and removed and the ground then brought to a proper level with sand fill. Eight-inch masonry walls were used for the first floor, with mansard roof for the second floor, with very little waste space above the second floor ceiling. The building contained 22,500 cu. ft., and cost \$8,000, or 36c per cu. ft. The brick masonry including fireplace, cost \$1,000, or 1/8 of the total cost. The supporting construction of the second floor is exposed 4" x 10" beams in living and dining rooms. All finished walls are plaster wall board with armored joints. All exterior walls and second floor ceilings are insulated.

We have been experimenting, like others, in trying to cheapen the exterior walls, but we found it uneconomical to disturb this 1/8 part of the cost of the house. This proportion of masonry to total cost varies with different types of construction. Our clients are asking for fireproof or fire-resisting construction over the basement, and non-shrinkable construction for the second floor.

The difference in cost between wood joists with plaster ceiling and finished oak floor, and steel bar joists with concrete slab and finished oak floor is 14c a square foot, or for a building the size mentioned above, the added cost for firesafe construction would be \$112.00. If steel nailer joists are used on second floor in place of wood joists, the added cost per square foot would be 7c per square foot, or \$56.00

(Continued to page 46)

#### SPECIFICATIONS AND COST

F. Smith Residence  
Olsen & Urbain, Architects

Sheet rock 1/2" thick; T and G joint wall board with armored joints for all walls (except for round stair hall), ceiling second floor and kitchen, breakfast room of first floor. No wall board on masonry walls of laundry.

Wood walls, pine boards for round stair hall (first and second floors).

Kitchen cases, steel—furnished by owner.

Stock birch trim; 2 members base 6" high; back band trim.

Oak floor for second floor 13/16" thick T. & G., smooth underside.

Alternate figure on oak floor or masonite floor in living and dining rooms.

Linoleum floor and walls in kitchen, breakfast and bath rooms.

Interior doors 1 3/8" thick, 6 panels.

Exterior sash and doors 1 3/4" thick, pine.

Fireplace—facing by owner.

Lavatories—vitreous, white leg, 20" x 24".

Heating, vapor—Trane concealed in living room, dining room; cabinet remainder.

Screens—by owner.

All second floor windows to open and all first floor windows stationary except one kitchen, one in breakfast, laundry, dining room and stair hall which shall open.

Painting—all exterior woodwork two coats; all inside trim enameled; walls, except where linoleum is called for, size and two coats of paint; bedrooms papered.

All sheet metal copper.

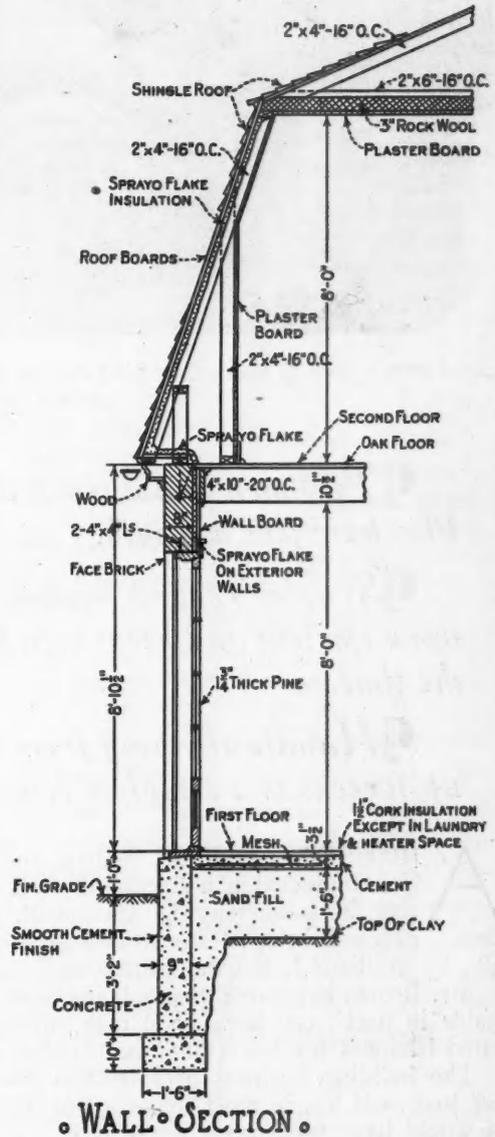
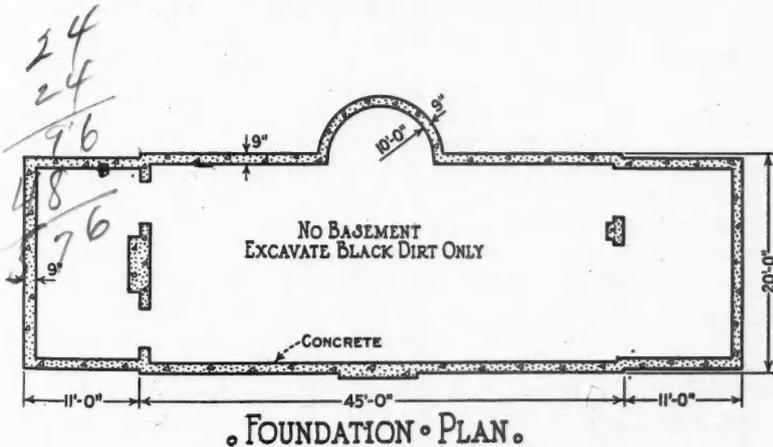
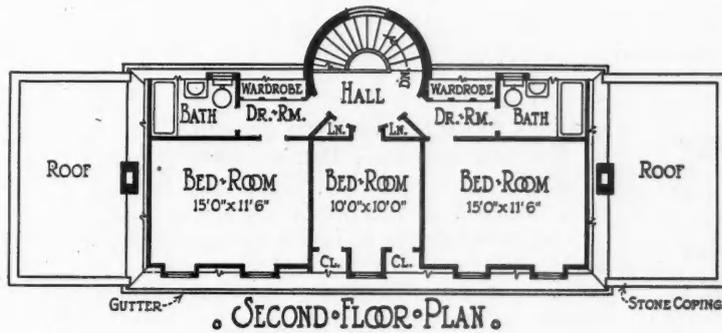
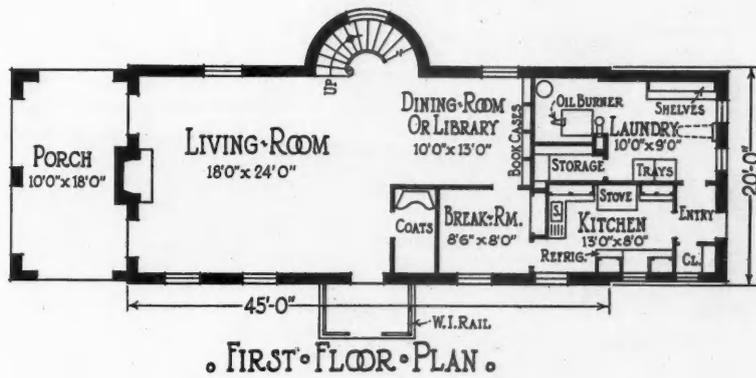
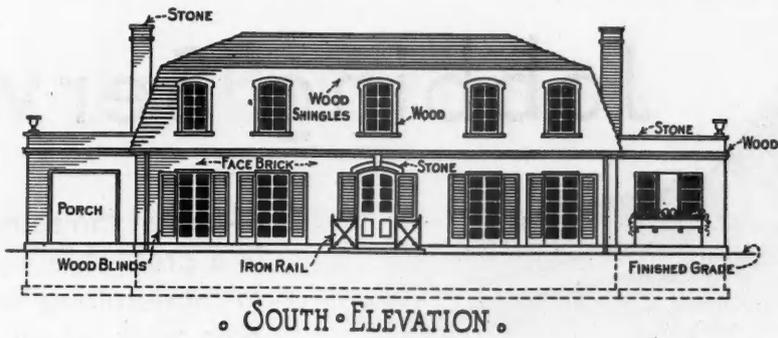
Insulation as called for on details.

Description of Work	Total Estimated Labor Cost
Excavating {	
Concrete {	\$ 514.00
Masonry—includes sand fill	1,000.00
Steel and Wrought Iron	95.00
Glazing	74.00
Insulation—walls and ceiling of 2nd floor and ceiling of kitchen and laundry	188.00
Cork Insulation Under First Floor	96.00
Stone	52.00
Carpentry—including plaster wall board but no armored joints	2,670.00
Hardware	60.00
Roof	200.00
Sheet Metal (based on galvanized iron)	190.00
Heating (Vapor; Trane Concealed radiation)	950.00
Plumbing (if one bath is omitted, deduct \$275.00)	850.00
Painting—including taping wall board	500.00
Electric Wiring	220.00
Electric Fixtures	75.00
Linoleum	280.00
Screens	80.00
Medicine Case	20.00

Total cost without architect fees and Oil burner...\$8,114.00  
Deduct for 1/2 of porch.....24,480 cu. ft.  
and laundry volume.....1,970 cu. ft.

22,510 cu. ft.

Cost per cubic foot 36 cents



THIS HOUSE FIGURE \$8,114 OR 36 CENTS PER CUBIC FOOT

OLSEN & URBAIN, Architects—For Specifications and Detailed Estimate See Opposite page.

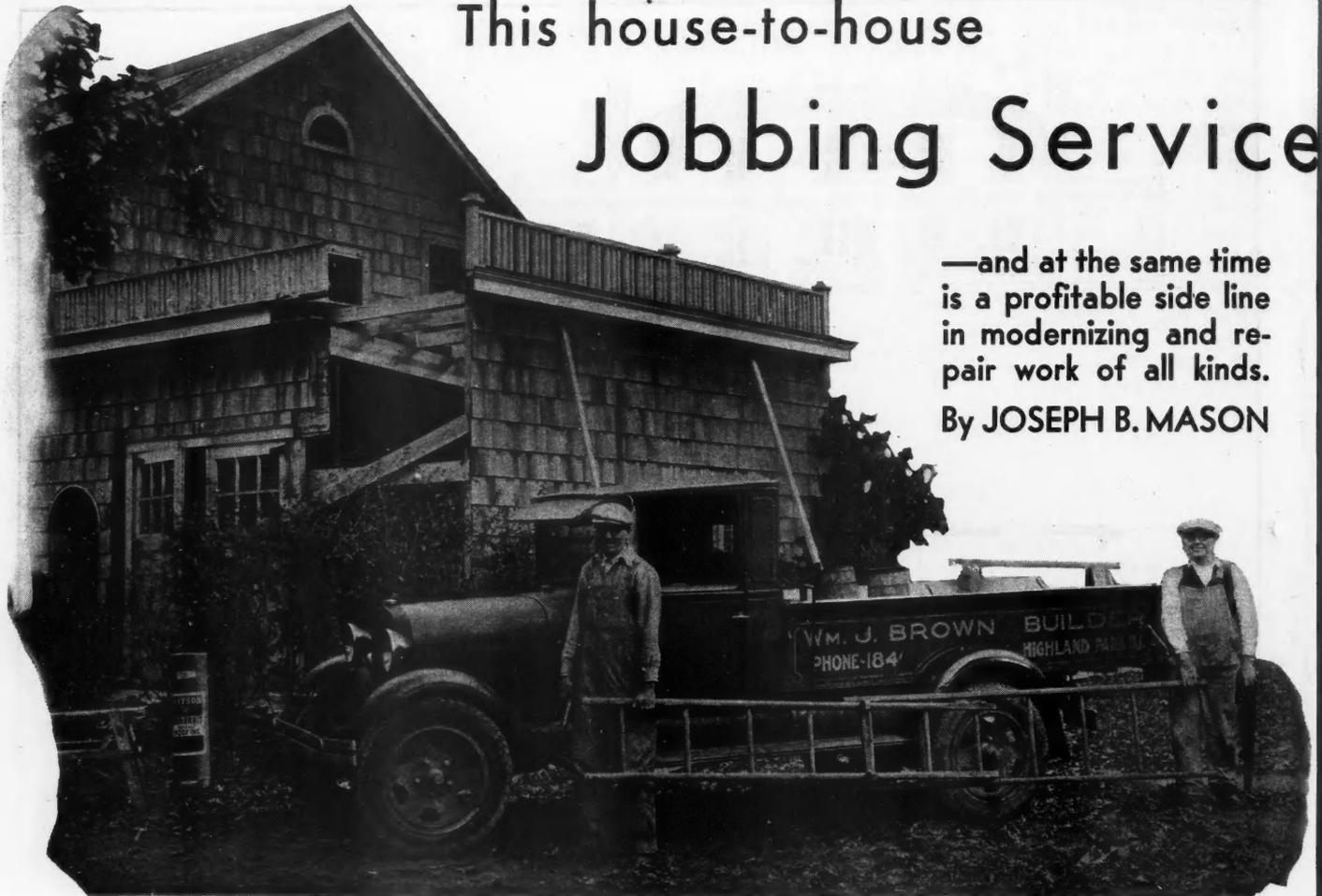
Handwritten notes and calculations:

376  
 4608  
 36  
 27648

# This house-to-house Jobbing Service B

—and at the same time  
is a profitable side line  
in modernizing and re-  
pair work of all kinds.

By JOSEPH B. MASON



John Hanson and Al Kalbus, jobbing carpenters on a garage improvement job at Highland Park, Ill. They cover a wide territory and are equipped to do any kind of work.

**¶** *Two men and a truck average 40 repair jobs a month.*

**¶** *Simple record system makes work efficient and keeps men busy all the time.*

**¶** *Handle anything from putting up screens to a complete remodeling.*

**A** HOUSE-TO-HOUSE jobbing and repair service conducted as a sideline to a regular contracting business may be successful, even in bad times. This is being demonstrated at Highland Park, Ill., by William J. Brown, contractor.

Mr. Brown has shown that jobbing work can be profitable in itself, can keep good men employed, and can build business for his regular contracting work.

The building business in Highland Park has fallen off just as it has in most towns. But Mr. Brown says it would have been much worse if it had not been for his jobbing service. This acts as a feeder, keeps him in touch with many people throughout the town, makes friends, and provides leads for modernizing and repair work and considerable new construction.

This repair business has been built up over many years, and is a result of much careful study and attention by Mr. Brown. Two men selected for their special

qualities to handle this type of work, are kept busy at it all the year around. During some times of the year, especially spring or fall, there may be as high as five men engaged in this work.

The jobbing truck is on the go from morning till night, and these two men handle any kind of work from patching a roof to hanging screens or storm sash. They handle an average of forty jobs a month.

The importance of picking workmen who can get along with housewives is stressed by Mr. Brown. The men have to be friendly and considerate. They have to subscribe to the principle that "the customer is always right" and never argue or talk back. If the baby is asleep, they must be very quiet, or perhaps go off and work on another job until it is safe or permissible for them to make a noise.

The first thing they do when they enter a home to do a piece of work is to spread a large canvas on the floor which will catch every particle of dirt or dust. They try to leave the house as clean as when they came.

An efficient system has been worked out by Brown to handle customer requests. Office quarters are shared by Brown and a local plumbing concern, and a young lady is employed to answer the telephone and do the office work for both. When a telephone call comes in from a housewife who wants a door repaired or a roof leak fixed or a cupboard put up in the basement, the girl gets as many details as possible and finds out when the work must be done. If the customer insists that it be done the same day, she will promise that it will be, and that promise will be kept. If it is a simple job, two workmen will go out in the truck at once. When

# Builds Business

they are on a job, they call the office every hour to see if anything new has come in.

If the job is fairly complicated and calls for an estimate, Mr. Brown himself will talk it over with the owner and give a cost estimate. He may prepare a sketch and order certain pieces of millwork or special equipment that will be called for. As soon as these are ready, the jobbing crew gets on the job and finishes the work.

Mr. Brown has built up much good will by doing this extensive jobbing work at very reasonable prices. Many times he will perform a job at less than the estimated cost, which produces a satisfied customer and a booster.

When an estimate is made, it is put down on the job order book, a sheet of which is shown on this page. This sheet constitutes a complete record of the job on which the actual time is stamped and materials used are recorded, as well as the date, description and the amount of the bill.

The two jobbing carpenters turn in a weekly time report with their labor properly charged against each job.

With modernizing and repair work showing up so important in building work today and probably for the next few years, such an efficient, well organized jobbing service as this has unusual possibilities.

**TIME REPORT**  
**W. J. BROWN**  
Carpenter Contractor

Name J. Hanson Telephone 44 Week Ending Oct. 15, 1932  
Reports Must be Turned in Friday Noon

No.	Name	Hrs.	Name of Job	Description of Work
Friday	4	R. Smith	roof repair	
Friday	4	127 Main St.	guy wire reching	
Saturday	2 1/2	M. Willets	put up storm windows	
Saturday	2 1/2	Fabian	Weatherstrip rear door	
Monday	1	J. F. Star	repaired door & lock	
Monday	5	Pavia	2020 W. Ave - cupboards in bath	
Monday	3	10 N. John St	4 st. work	
Tuesday	8	Hoglund	734 Hoys - cabinet doors in kitchen	
Wednesday	6	Hoglund	panel door & split windows	
Thursday	2	E. Stinger	combs, lock; refit door	
Thursday	3	Central School	Refit lock & chimney	
Thursday	5	T. W. Bell	Put up shelves in kitchen	
Total		44		

Time report turned in by each carpenter which shows number of hours work to be charged to each job.

Complete record of each job is kept in a Job Order Book with pages made up like this (page size 8 1/2" x 8 1/2"). When the order is taken description of work and instructions are written in and a carbon copy turned over to the carpenter who is to do the work.

The original copy of this sheet stays in the book. Labor and material costs are entered on it as shown. The Job Order Book thus becomes a permanent and complete record of each job.

#399

**WM. J. BROWN**  
100 SOUTH FIRST STREET  
HIGHLAND PARK, ILLINOIS  
PHONE HIGHLAND PARK 184

DATE ORDERED 10/10/32  
TO BE DONE 10/12/32  
COMPLETED 10/13/32  
BILLED 11/1/32

Prof. M. B. Hoglund  
734 Hoys

DESCRIPTION OF WORK ESTIMATED COST 45.00

*Put wood panel doors on cabinet in butler's pantry and new panel doors on storage room. Refit door. Refit windows on sleeping porch.*

DATE	NO.	LABOR	MATERIAL	HARDWARE
10/12/32	P.42	J. Hanson - 8 hrs.	8.00	
		R. Kalkus - 4 1/2 hrs.	4.50	
10/12/32	P.44	J. Hanson - 6 hrs.	6.00	
10/13/32		City Lumber for strips		.60
10/13/32		A-1 Sash & Door Co.		
		(door shelf, lumber)	16.25	
10/13/32		Black Hardware Store		2.76
		(butts, fasteners)		
			18.50	16.85
				2.76
		Total Cost	35.11	
		+ 10.70	3.21	
			41.92	
		Billed 1/1 -	42.00	



in three cities. The comparative figures show that in 1932 labor on residential work received 37.3 per cent as against 46 per cent in 1928. In non-residential work, the reduction in labor cost was less, the figures being: 1932, 35.7 per cent; 1928, 38.3 per cent.

Considerable variation in the labor and material costs of various types of buildings and in different parts of the country was apparent. In Boston, for example, 59 per cent of the cost of all kinds of building was accounted for by material and 41 per cent by labor. In contrast to this, in Dallas labor received only 27.2 per cent of the total cost of buildings while material cost 72.8 per cent. In general, labor received a higher percentage of the total cost in the north than in the south.

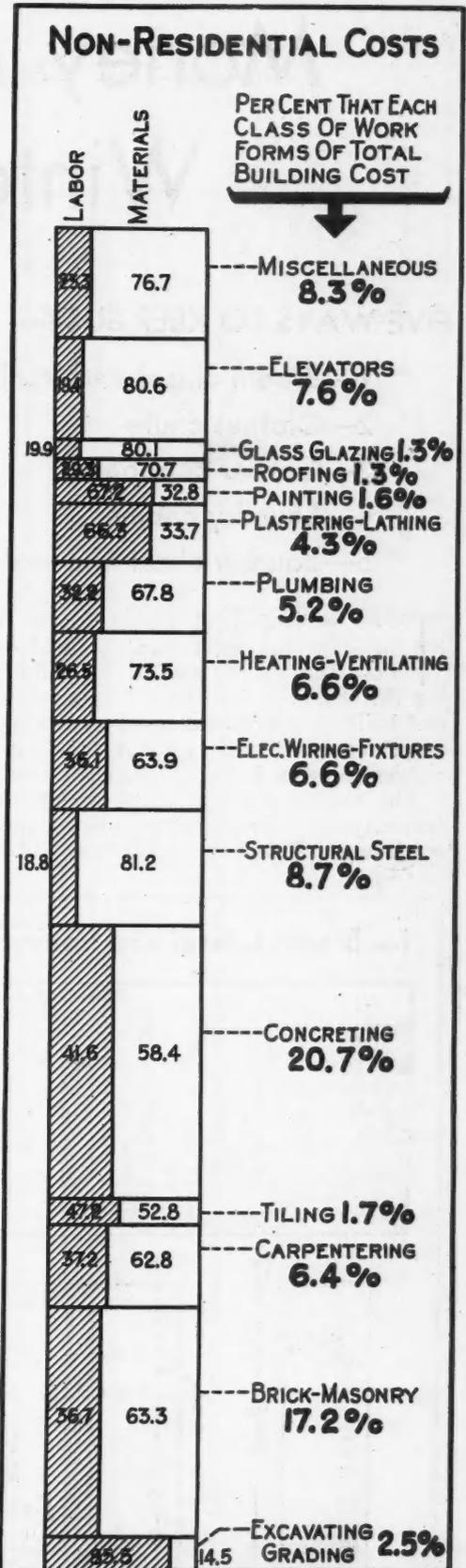
Where the building dollar goes is very clearly shown by the results of the survey. Carpentry work accounted for a larger percentage of the building dollar than any other item in residential building—27.3 cents of each dollar spent.

In addition to carpentry work, three other items each accounted for more than 10 cents of each dollar spent: brickwork, concrete work and plumbing. In each of the 15 cities except Chicago, carpentry work formed the largest single item of expense in residential building. For non-residential building, concrete work accounted for the largest portion of the building dollar, 20.7 cents going for this class of work.

### HOW THE BUILDING DOLLAR GOES

Percentage that cost of each class of work forms of total cost of residential buildings in 15 cities (figures include material and labor)

Class of work	Per cent chargeable in—							
	Atlanta, Ga.		Boston, Mass.		Chicago, Ill.		Dallas, Tex.	
	Material	Labor	Material	Labor	Material	Labor	Material	Labor
Excavating and grading	68.8	100.0	3.9	96.1	64.8	100.0	67.2	32.8
Brickwork	68.8	31.2	62.4	37.6	72.9	27.1	78.4	21.6
Carpenter work (builders' hardware, lumber, and millwork)	74.2	25.8	49.0	51.0	55.0	45.0	67.7	32.3
Tile work	69.8	30.2	54.0	46.0	66.8	33.2	68.6	31.4
Concrete work	81.2	18.8	58.2	41.8	66.5	33.5	73.9	26.1
Electric wiring and fixtures	79.0	21.0	78.5	21.5	76.1	23.9	82.9	17.1
Plumbing	81.4	18.6	71.7	28.3	81.8	18.2	77.7	22.3
Heating and ventilating	56.0	44.0	30.7	69.3	26.9	73.1	55.3	44.7
Painting	42.2	57.8	40.5	59.5	33.1	66.9	48.1	51.9
Papering	66.9	33.1	29.5	70.5	32.1	67.9	32.1	67.9
Plastering	69.6	30.4	62.6	37.4	62.2	37.8	75.8	24.2
Roofing	66.6	33.4	66.6	33.4	75.6	24.4	80.9	19.1
Miscellaneous								
	Duluth, Minn.		Indianapolis, Ind.		Little Rock, Ark.		New Orleans, La.	
Excavating and grading	7.8	92.2	100.0	100.0	72.0	28.0	52.9	47.1
Brickwork	63.0	37.0	54.5	45.5	64.0	36.0	58.2	41.8
Carpenter work (builders' hardware, lumber, and millwork)	73.8	26.2	75.9	24.1	68.1	31.9	74.8	25.2
Tile work	59.7	40.3	61.0	39.0	69.2	30.8	74.3	25.7
Concrete work	60.3	39.7	52.0	48.0	69.2	30.8	74.3	25.7
Electric wiring and fixtures	65.3	34.7	61.6	38.4	71.0	29.0	48.7	51.3
Plumbing	75.1	24.9	75.8	24.2	76.9	23.1	80.5	19.5
Heating and ventilating	78.6	21.4	75.9	24.1	76.6	23.4	85.8	14.2
Painting	30.6	69.4	29.4	70.6	44.3	55.7	44.1	55.9
Papering			40.9	59.1				
Plastering	54.1	45.9	26.8	73.2	59.4	40.6	48.7	51.3
Roofing	65.1	34.9	70.1	29.9	77.2	22.8	77.8	22.2
Miscellaneous	76.9	23.1	60.8	39.2			85.6	14.4
	New York, N. Y.		Roanoke, Va.		Saginaw, Mich.		St. Louis, Mo.	
Excavating and grading	55.2	100.0	11.0	89.0	46.3	100.0	64.8	35.2
Brickwork	55.2	44.8	53.5	46.5	46.3	53.7	64.8	35.2
Carpenter work (builders' hardware, lumber, and millwork)	70.7	29.3	61.9	38.1	72.9	27.1	62.0	38.0
Tile work	46.9	53.1	61.0	39.0	67.4	32.6	59.3	40.7
Concrete work	52.9	47.1	61.7	38.3	56.2	43.8	58.6	41.4
Electric wiring and fixtures	54.2	45.8	72.6	27.4	72.4	27.6	66.0	34.0
Plumbing	75.0	25.0	75.4	24.6	74.7	25.3	75.3	24.7
Heating and ventilating	74.2	25.8	83.4	16.6	82.7	17.3	79.9	20.1
Painting	28.6	71.4	31.0	69.0	36.0	64.0	32.3	67.7
Papering								
Plastering	56.5	43.5	60.7	39.3	54.2	45.8	46.4	53.6
Roofing	64.2	35.8	78.0	22.0	67.5	32.5	75.9	24.1
Miscellaneous	75.2	24.8			83.2	16.8	87.4	12.6
	Salt Lake City, Utah		Seattle, Wash.		Trenton, N. J.		All 15 cities combined	
Excavating and grading	61.7	38.3	4.3	95.7	1.0	99.0	1.5	98.5
Brickwork	61.7	38.3	58.3	41.7	55.9	44.1	58.4	41.6
Carpenter work (builders' hardware, lumber, and millwork)	66.1	33.9	43.5	56.5	62.7	37.3	67.1	32.9
Tile work	60.8	39.2	58.6	41.4	59.2	40.8	56.0	44.0
Concrete work	61.9	38.1	67.5	32.5	48.1	51.9	63.5	36.5
Electric wiring and fixtures	80.0	20.0	55.1	44.9	72.3	27.7	64.0	36.0
Plumbing	79.8	20.2	69.7	30.3	73.7	26.3	75.3	24.7
Heating and ventilating	78.9	21.1	81.6	18.4	76.8	23.2	79.7	20.3
Painting	49.5	50.5	36.2	63.8	27.7	72.3	33.4	66.6
Papering	58.2	41.8			45.5	54.5	38.5	61.5
Plastering	47.2	52.8	40.4	59.6	42.1	57.9	44.6	55.4
Roofing	81.4	18.6	48.9	51.1	67.8	32.2	67.7	32.3
Miscellaneous			79.4	20.6	82.2	17.8	75.2	24.8



Subcontract costs in non-residential work are shown from top to bottom. The chart shows that of every dollar spent for non-residential building, for example, 20.7 per cent went for concrete. Of the amount spent for concrete, 41.6 per cent went for labor and 58.4 per cent for materials.

# Money Making Plans For Winter Shop Work

## FIVE WAYS TO KEEP BUSY—

- 1—Broom closet and ironing board
- 2—Clothes chute
- 3—Corner cupboard
- 4—Laundry cabinet
- 5—Boudoir chest and seat

THE perfecting of plywood and similar types of material has opened a large field for profitable indoor activity for men of the building industry during the cold winter months. Reports of manufacturers and building supply dealers show that large numbers of carpenters and builders are turning their hands to specialties to bring in extra income this winter.

The use of plywood opens up new fields that were formerly too difficult or expensive for the average builder workshop. This new product is inexpensive, strong,

light in weight, and can be bent to curved shapes.

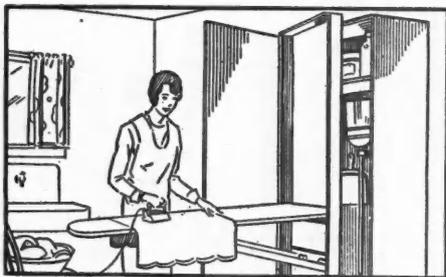
Construction of certain pieces of home equipment or furniture that require rounded parts have been made more easy by the rapid development of materials of this type. They are easy to work, have great structural strength and hold nails and screws close to the edges without splintering.

In a recent issue of the AMERICAN BUILDER, plans were given for a ping pong table. This is only one of the many new specialties that can be quickly made of plywood that open a new market for carpenters' and builders' work. Basement improvements such as paneling, built-in bookcases, work desks and play tables are being sold by enterprising builders.

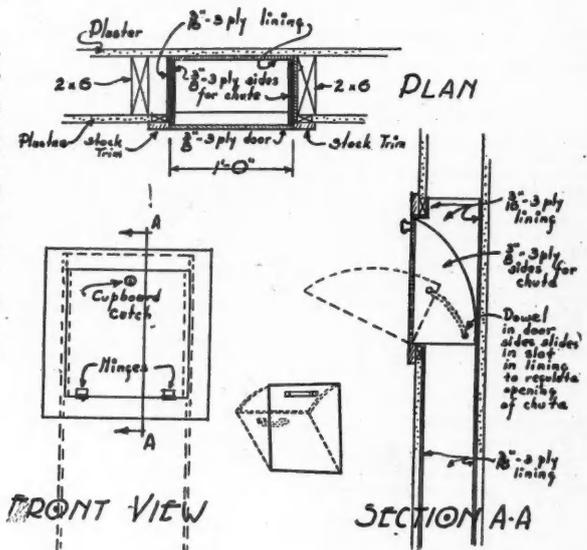
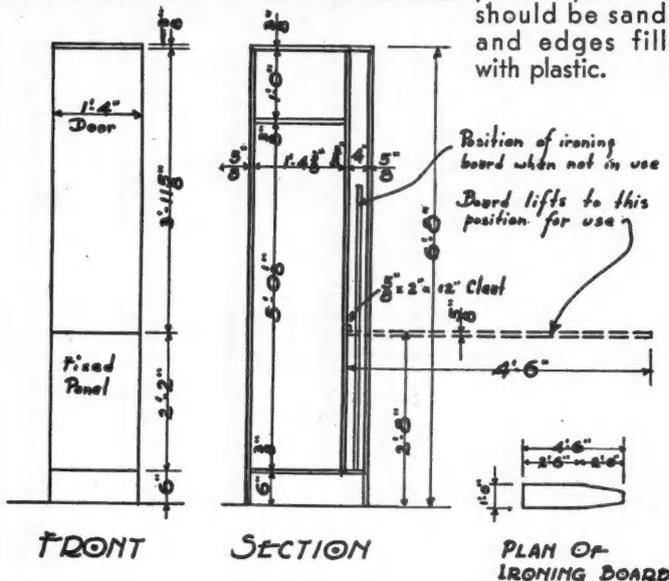
The most successful practice is to develop one or two specialties that have the widest appeal, and standardize on these. Several of special interest, planned by designers of the Douglas Fir Plywood Manufacturers Association are shown on the accompanying pages.

Stain wax, stain enamel or lacquer can be applied to plywood similar to other wood, and it may be used as a base for plastic paint. Edges may be sanded smooth

### 1—Broom Closet and Ironing Board

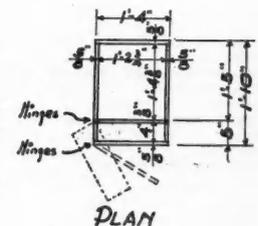


A built-in convenience that many housewives lack. The closet space is in great demand, and the folding board is convenient. The plywood case is warp proof and dust proof. Exposed faces should be sanded and edges filled with plastic.



### 2—Clothes Chute

A well known specialty that saves steps. Plywood is used for lining, door, door sides, and trim if desired.



or may be covered thinly with putty or some other plastic material. In lacquering or enameling, if the job requires an especially fine finish, glue-size, then lightly sand and apply two priming coats before the enamel or lacquer coats. Materials required for the five specialties are as follows:

1. Broom Closet and Ironing Board—1 top,  $\frac{3}{8}$ "—3 ply, 1'4" x 1'10"; 1 shelf,  $\frac{3}{8}$ "—3 ply, 1'2 $\frac{1}{2}$ " x 1'4 $\frac{3}{8}$ "; 1 bottom,  $\frac{3}{8}$ "—3 ply, 1'2 $\frac{1}{2}$ " x 1'4 $\frac{3}{8}$ "; 1 door bottom,  $\frac{3}{8}$ "—3 ply, 4" x 1'2 $\frac{1}{2}$ "; 1 door back,  $\frac{3}{8}$ "—3 ply, 1'4" x 6'1 $\frac{1}{8}$ "; 2 sides,  $\frac{3}{8}$ "—5 ply, 1'4 $\frac{3}{8}$ " x 6'1 $\frac{1}{8}$ "; 2 sides,  $\frac{3}{8}$ "—5 ply, 5" x 5 $\frac{1}{2}$ "; 1 door,  $\frac{3}{8}$ "—5 ply, 1'4" x 3'11 $\frac{1}{4}$ "; 1 fixed panel,  $\frac{3}{8}$ "—5 ply, 1'4" x 2'2"; 1 base,  $\frac{3}{8}$ "—5 ply, 1'4" x 6"; 1 cleat,  $\frac{3}{8}$ "—5 ply,  $\frac{3}{8}$ " x 12"; 1 ironing board,  $\frac{3}{8}$ "—5 ply, 1' x 4'6"; 2 door sides,  $\frac{3}{8}$ "—5 ply, 4 $\frac{3}{8}$ " x 3'11 $\frac{1}{4}$ "; 2 sides,  $\frac{3}{8}$ "—5 ply, 4 $\frac{3}{8}$ " x 2'2"; 4 hinges for closet door; 3 hinges for ironing board door; 2 door pulls and catches.

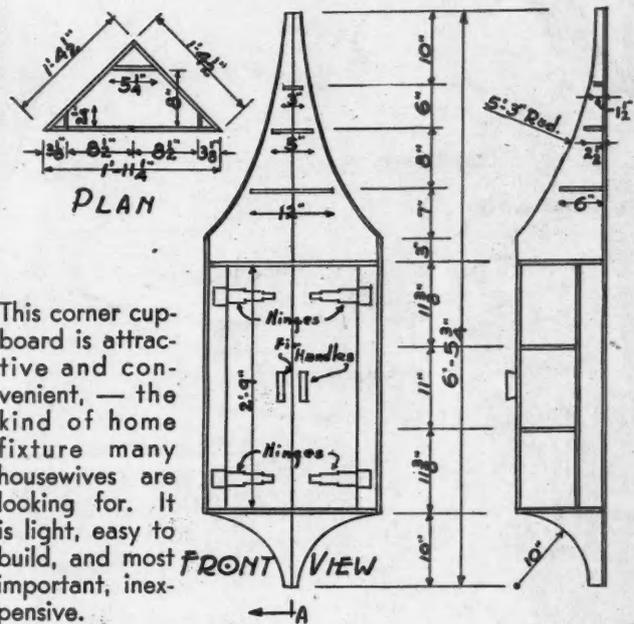
2. Clothes Chute—See details on plans.

3. Corner Cupboard—1 back,  $\frac{3}{8}$ "—3 ply, 1'4 $\frac{1}{2}$ " x 6'5 $\frac{3}{4}$ "; 1 back,  $\frac{3}{8}$ "—3 ply, 1'4 $\frac{1}{2}$ " x 2'9"; 2 jambs,  $\frac{3}{8}$ "—3 ply, 2 $\frac{1}{4}$ " x 2'9"; 2 doors,  $\frac{3}{8}$ "—3 ply, 8 $\frac{1}{2}$ " x 2'9"; 2 shelves,  $\frac{3}{8}$ "—3 ply, 11 $\frac{1}{8}$ " x 1'10 $\frac{1}{2}$ "; 2 shelves,  $\frac{3}{8}$ "—3 ply, 1'5" x 8"; 2 sides,  $\frac{3}{4}$ "—3 ply, 2 $\frac{1}{4}$ " x 2'9"; 1 back,  $\frac{3}{4}$ "—3 ply, 5 $\frac{1}{2}$ " x 2'9"; 1 shelf,  $\frac{3}{4}$ "—3 ply, 12" x 6"; 1 shelf,  $\frac{3}{4}$ "—3 ply, 5" x 2 $\frac{1}{2}$ "; 1 shelf,  $\frac{3}{4}$ "—3 ply, 3" x 1 $\frac{1}{2}$ "; 2 fir handles; 4 hinges.

4. Laundry Cabinet—1 panel,  $\frac{3}{8}$ "—3 ply, 30" x 84". Hardware, 4 pr. hinges, 2 cupboard catches. Note: Mirror to be 9" x 1'6". To be screwed to face of door or set in molding frame.

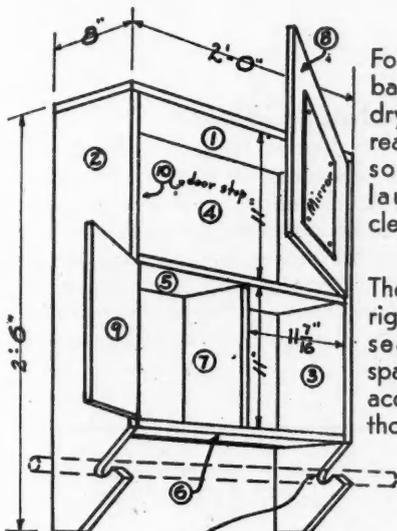
5. Boudoir Chest and Seat—1 top,  $\frac{3}{8}$ "—5 ply, 4' x 1'5"; 2 ends,  $\frac{3}{8}$ "—5 ply, 1'4" x 2'4"; 2 partitions,  $\frac{3}{8}$ "—5 ply, 1'3 $\frac{3}{8}$ " x 1'4 $\frac{3}{8}$ "; 1 front member,  $\frac{3}{8}$ "—5 ply, 3" x 1'1"; 1 front member,  $\frac{3}{8}$ "—5 ply, 3" x 3 $\frac{3}{4}$ "; 2 doors,  $\frac{3}{8}$ "—5 ply, 1'—9 $\frac{3}{8}$ " x 1'4 $\frac{3}{8}$ "; 1 tray bottom,  $\frac{3}{8}$ "—3 ply, 1'3 $\frac{1}{4}$ " x 4"; 4 shoe shelves,  $\frac{3}{8}$ "—3 ply, 1'3 $\frac{1}{2}$ " x 1'9 $\frac{1}{2}$ "; 4 tray partitions,  $\frac{3}{8}$ "—3 ply, 1'3 $\frac{1}{4}$ " x 4"; 2 tray partitions,  $\frac{3}{8}$ "—3 ply, 11 $\frac{1}{4}$ " x 4"; 3 tray partitions,  $\frac{3}{8}$ "—3 ply, 5 $\frac{1}{2}$ " x 4"; 1 tray front,  $\frac{3}{8}$ "—3 ply, 4' x 4 $\frac{3}{8}$ "; 1 back,  $\frac{3}{8}$ "—3 ply, 4' x 1'9"; 1 foot rest member,  $\frac{3}{8}$ "—3 ply, 8" x 3"; 1 foot rest member,  $\frac{3}{8}$ "—3 ply, 4" x 3"; 2 foot rest members,  $\frac{3}{8}$ "—3 ply, 8" x 12"; 1 foot rest member,  $\frac{3}{8}$ "—3 ply, 3"; 1" steel pin 4" long; 2 pieces  $\frac{1}{4}$ " pipe (inside diameter)  $\frac{1}{2}$ " long; 3 wood handles; 6 hinges for doors; 3 hinges for top; 2 pieces chain with screw eyes for top—12" long.

### 3—Corner Cupboard



This corner cupboard is attractive and convenient, — the kind of home fixture many housewives are looking for. It is light, easy to build, and most important, inexpensive.

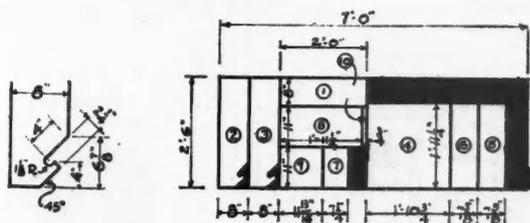
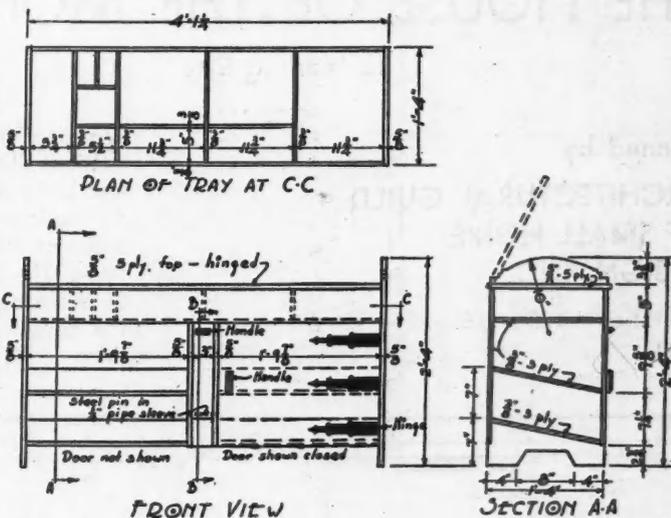
### 4—Laundry Cabinet



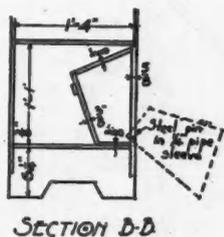
For the kitchen or basement this laundry cabinet meets a real need. It keeps soaps and other laundry supplies clean and handy.

The boudoir chest at right serves as both seat and storage space for feminine accessories and is thoroughly modern.

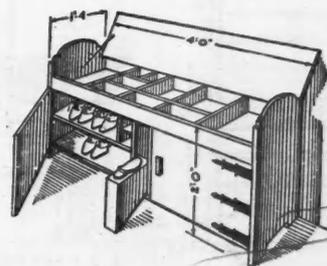
### 5—Boudoir Chest and Seat



How to cut a 7' x 2'6" piece of plywood into the parts called for in building the above cabinet is shown by the lower sketch. Numbers indicate where pieces go. Black space is waste material.



SECTION D-D



Full details for a unique piece of furniture of strong plywood. When closed a comfortable seat. When open, a place to put stockings, lingerie, shoes, hats and other articles.



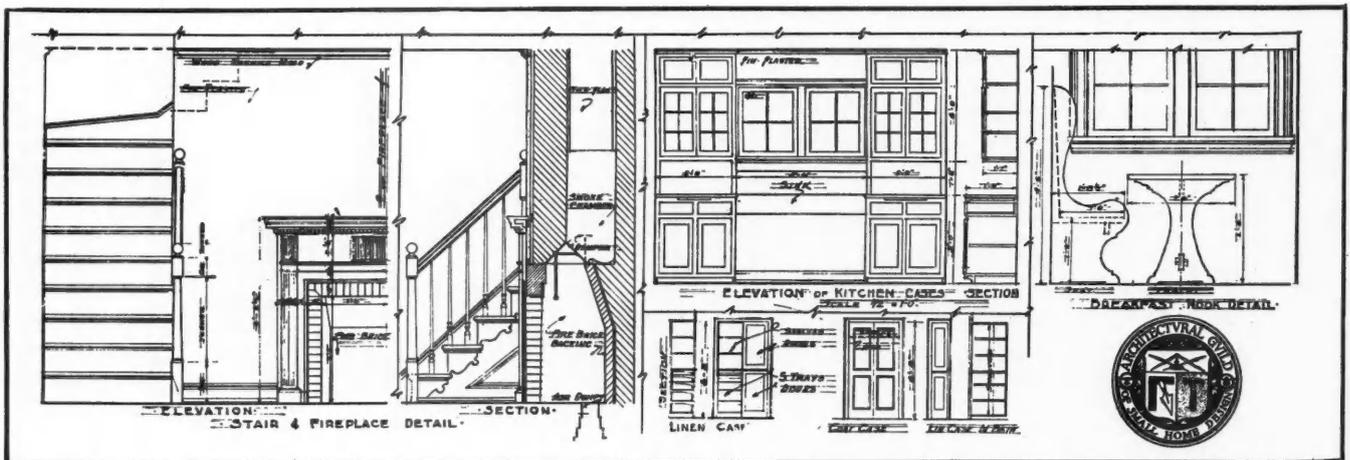
# THE HOUSE OF THE MONTH

## A Connecticut Colonial

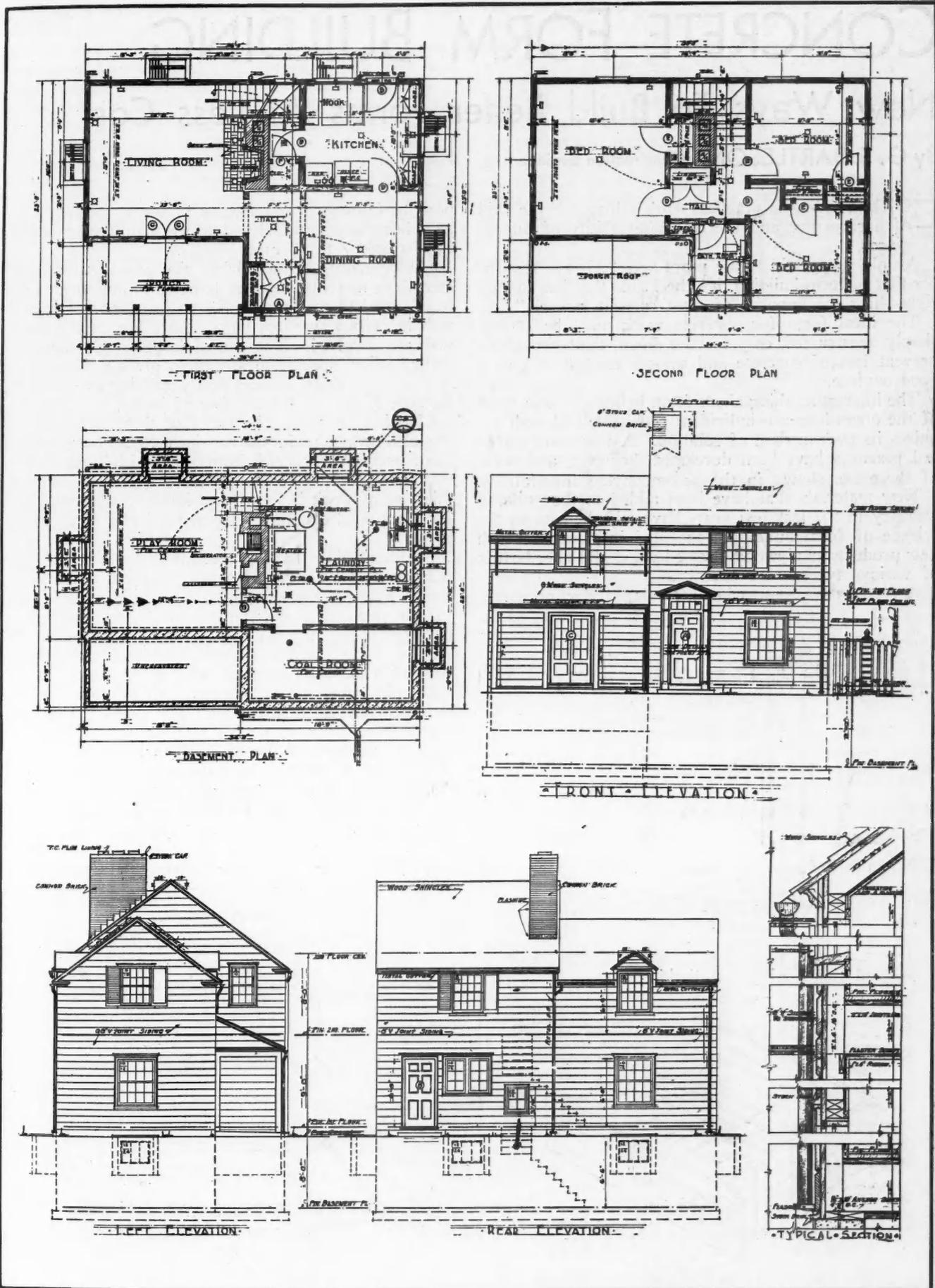
Planned by  
**ARCHITECTURAL GUILD  
 OF SMALL HOME  
 DESIGN, INC.**

Cost Key 1.425—116—704—30—20  
 —11.

Recalling the many charming farmhouses nestled in the lower Connecticut valleys, this house has an interesting relation of windows to wall surfaces that makes it a logical design for a wooden structure. An ingenious staircase conserves floor space that is used for a dining room on the first floor and an additional bedroom on the second floor. The ample provision for storage of bedroom linen as well as an extra cupboard for bathroom towelings, should be a delight to the housewife who likes to have a place for everything and everything in its place.



A Portion of the Interior Details provided by the Architectural Guild for the Connecticut Colonial Home illustrated Above and on the next page.



The working drawings (very much reduced in scale) as furnished by the Architectural Guild for the Connecticut Colonial Home Design illustrated on opposite page.

# CONCRETE FORM BUILDING

## New Ways To Build Better Forms At Less Cost

By G. S. BARTLESON, Construction Engineer

FORM building is practical work calling for the skill of a carpenter and the designing ability of an engineer.

An old timer said to me years ago, "Always remember that in form building, it's the inside that has to look right—just the opposite of most carpentry work."

The ideal form for concrete work must be strong, simply constructed, easy to take down, tight enough to prevent loss of concrete and smooth enough to give a good surface.

The interesting thing about form building is that most of the operations are individual problems, and each requires its own method of solution. A few good standard practices have been developed, however, and some of these are shown in the accompanying illustrations.

New materials that have been added to the building industry in the last few years have added much to the science of form building. Included in these are such new products as plywood, pressed wood and fiber boards of various types.

A recent development has been the production of es-

pecially fabricated and treated plywood sections which have been waterproofed and which manufacturers claim can be used 7 to 10 times.

Undoubtedly, the new large size panel materials can contribute much to lower costs of form building. Large panels lend themselves readily to form work, especially well in certain types of work where large flat areas of wall are involved. The use of large panels saves carpentry labor, speeds up stripping, gives a smooth, finless surface which reduces costly rubbing or plastering. Because it reduces the number of joints, it gives a better looking surface. The fact that these new materials are also available in quarter-inch thick panels makes them useful for curved forms, in which type of work they bring about a considerable saving. An example of this type of work is shown in Figure 4, where the form for a rounded column has been produced from 1/4-inch plywood.

Another factor that has speeded up form building and reduced cost is the use of power saws and power equipment. Especially where a large volume of work is called for, the power saw will bring about a large saving when the work is properly planned. One man engaged in cutting form parts may very well save the work of five or six under the old system of hand work.

In still another way, construction of form building has been simplified in the past few years. This is by the addition of new devices that replace many of the old time methods of wiring and bracing forms. I will not attempt to describe here the new couplings, spreaders, wire tighteners, clamps, etc., that are now available for form building, but suffice it to say that many of these are practical and of great value in producing better forms at lower cost.

The tremendous pressure concrete exerts when placed

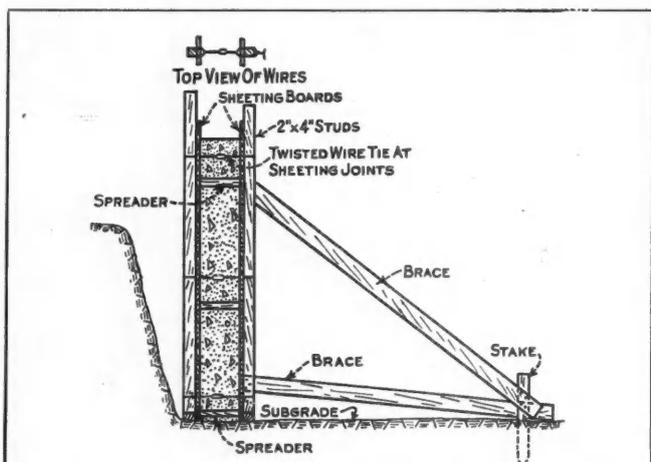


Figure 1—An inexpensive type of wall form built without walers, using studs tied in pairs.

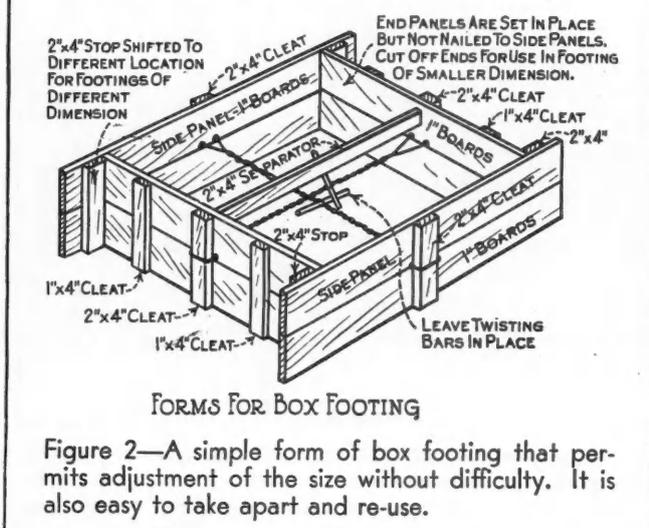


Figure 2—A simple form of box footing that permits adjustment of the size without difficulty. It is also easy to take apart and re-use.

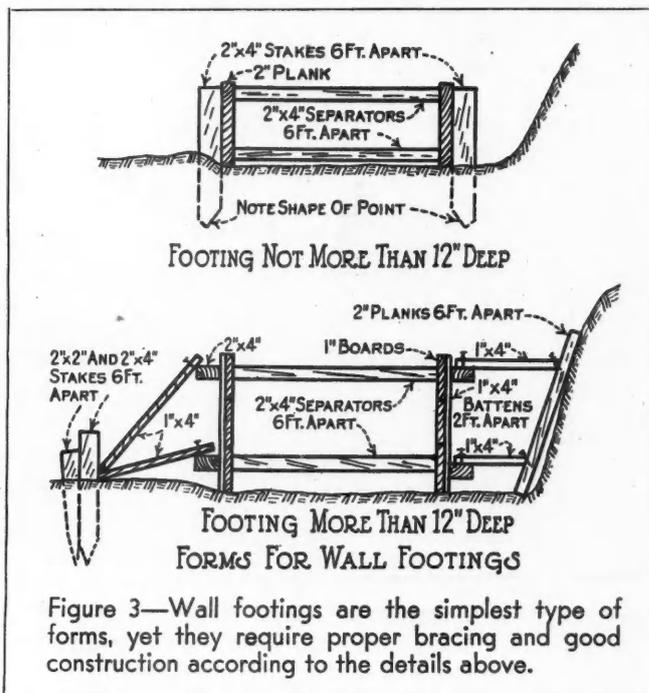


Figure 3—Wall footings are the simplest type of forms, yet they require proper bracing and good construction according to the details above.

in forms is not fully realized by most builders. The weight is approximately 145 pounds per cubic foot. This calls for thorough-going bracing and wiring. This pressure also causes leakage if the forms are not tight, and this is another detail that must be watched carefully.

One rule frequently followed is that walls not more than 12 inches thick should have 1-inch board with vertical studding spaced 27 inches apart. Where the wall is more than 12 inches thick, studding for this same thickness of board should be spaced 20 to 24 inches apart. Where the depth of fresh concrete is less than 3 feet, a 2-inch plank will be safe against bulging providing the vertical studdings are 40 to 48 inches apart.

Assembling wall forms and other types of concrete forms in panels that may be used over and over again is good practice. A simple method of connecting the panels at the ends is important, and a method is suggested in Figure 6.

For light walls, a form without rangers such as is shown in Figure 1 is satisfactory and is the cheapest type to construct. Wires may be placed around studs and between boards where they are easily twisted. Where it is important to have a perfectly straight wall free from undulations and where a wall is of considerable size, it is best to use rangers or walers. These should be attached at intervals of about 3 or 4 feet, the wires being placed over them and through holes bored through the form boards for the purpose.

Boards from 6 to 8 inches wide are more to be preferred for form sheeting than wider boards, as they have less tendency to warp. Such lumber should be surfaced at least on one side, the smooth side to the concrete. Square-edged boards are preferable to tongue and groove for most work as the latter are not so easily

removed; and when the forms are dismantled, they may split or break. Dismantling forms made with square-edge boards, however, very few are broken. Where panel sections are being built to be used over several times, the matched stock is superior.

Studding for form work should be of good quality to stand considerable load. Good practice calls for spacing studding 2 feet on centers, but this is by no means a fixed rule. On residential work where economy is especially important, studding may be spaced farther apart if the entire depth of the wall is not poured all at one time. The common practice is to pour the forms to a depth of only 2 or 3 feet clear around the building, or as far as is practical, the first day. This depth of concrete does not put a very great pressure on the forms, and the balance can be placed the next day after the first layer has partially set.

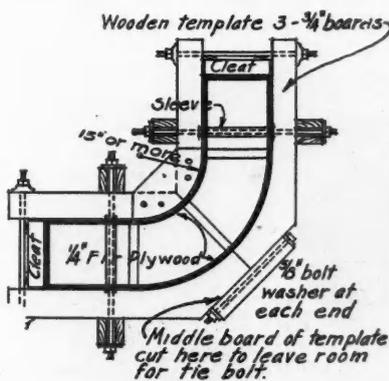


Figure 4 — (At left) This form for a rounded column or entrance is made much more simple by the use of 1/4-inch plywood which is easily bent into shape.

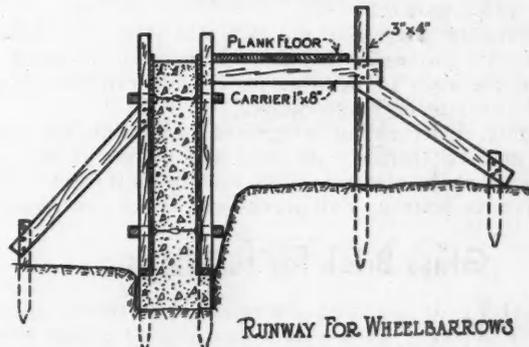
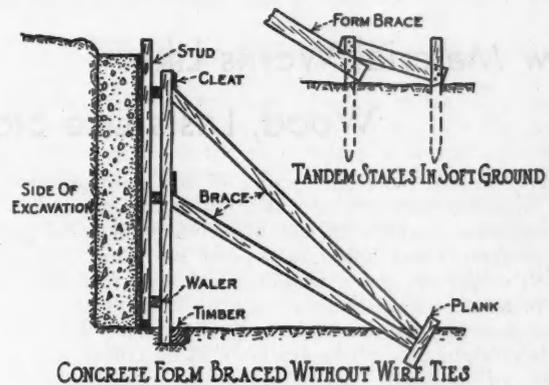
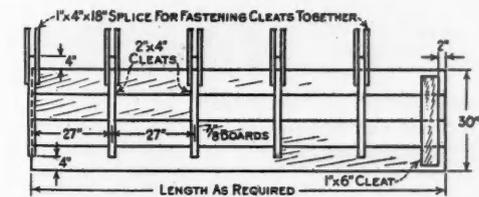
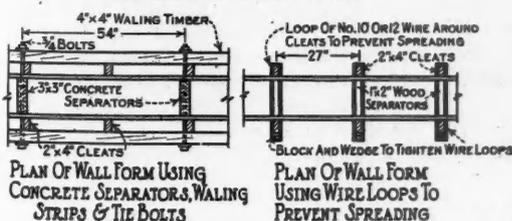


Figure 5—Where the earth is firm, the construction indicated in the upper drawing is satisfactory. Below is shown a typical runway construction. Detail at top indicates use of tandem stakes in soft ground.

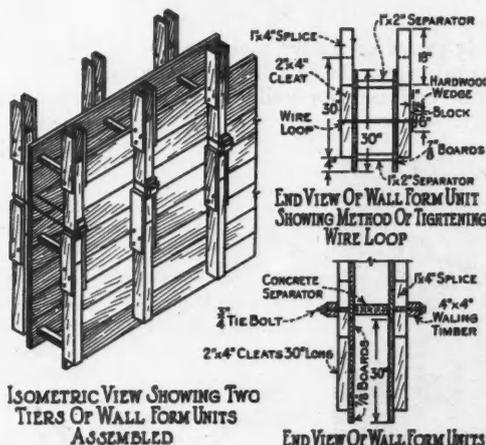


ELEVATION OF WALL FORM UNIT



PLAN OF WALL FORM USING CONCRETE SEPARATORS, WALING STRIPS & TIE BOLTS

PLAN OF WALL FORM USING WIRE LOOPS TO PREVENT SPREADING

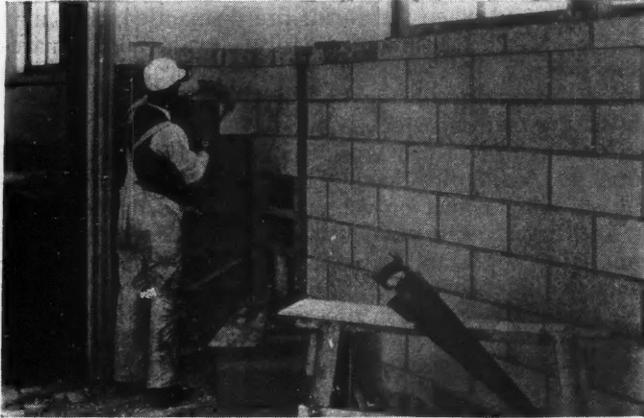


ISOMETRIC VIEW SHOWING TWO TIERS OF WALL FORM UNITS ASSEMBLED

END VIEW OF WALL FORM UNITS SHOWING USE OF TIE BOLTS & CONCRETE SEPARATOR.

Figure 6—A type of self supporting wall form developed by the Aberthaw Company of Boston, which does not require exterior bracing.

WALL FORMS WITHOUT EXTERIOR BRACING



Installing a section of wall with new wood fiber product that can be nailed or cut with saw like wood, and yet has the permanence of stone or marble.

## New Material Works Like Wood, Lasts Like Stone

ONE of the most interesting of the new products is a moulded material for walls, floors and ornaments made of wood fiber mixed with suitable binder and color pigment. This product is non-inflammable, and has great strength and durability without great weight. Although it comes in the class of hard and impervious material, such as stone, marble, cement and tile, its weight is only 50% more than wood.

This modern product is available in 20 colors and a large variety of textures, including gloss, close, semi-shaggy, acoustical, and a mottled effect.

Of outstanding interest is the fact that it can be nailed, cut with a saw and easily handled. It may be obtained in small, thin, tile sizes or in large panels. It can be cast in moulds to any size or shape desired.

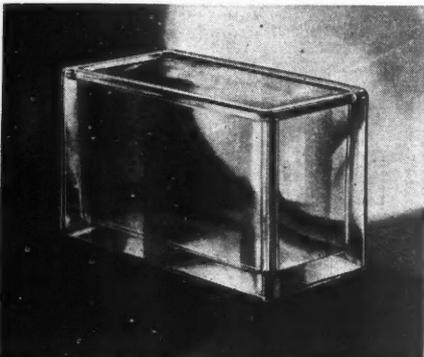
No painting or decorating is required as the finish is complete and may be cleaned with soap and water. It absorbs noise, acts as an insulator against cold or heat, and has a warm, attractive texture. Full details will be sent on request.

## Glass Brick for Buildings

A VARIETY of new and interesting architectural effects can be achieved by use of a new glass building block demonstrated recently in Columbus, Ohio, following 2½ years of research and experiment.

For industrial buildings the glass block offers not only initial economies and rapidity of construction but also great permanent advantages in matters of heating and lighting. The hollow structure of the glass block gives insulation, while providing ample infiltration of daylight through the translucent walls themselves.

Color application in a wide range of shades makes possible extraordinary results in decorative effects as a facing material for use in all kinds of interior and exterior building surfaces, for store fronts, filling stations, etc.



Glass brick has strength, transparency, unusual color effects.



An interior finished with new material which is non-inflammable, sound absorbent, permanent and available in many colors and textures.

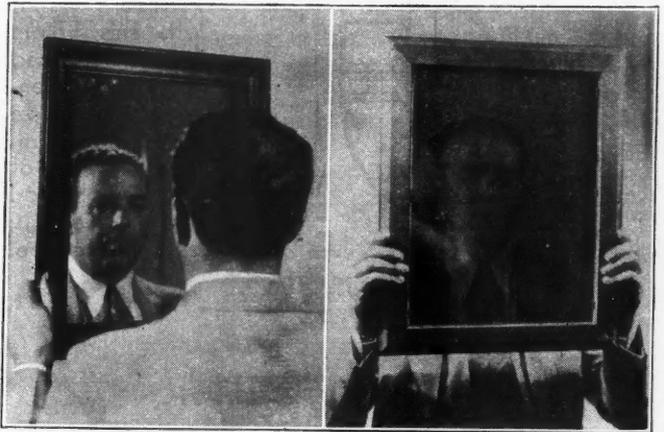
## Transparent Mirror Excites Interest

TAKING a tip from speakeasy owners who view prospective patrons through mirrors which are transparent from one side, home owners are being urged to install this equipment. A Chicago firm has perfected such a mirror which, it is claimed, has a wide range of uses for home and business purposes.

Viewed from in front, this mirror looks like any ordinary mirror, and reflects the image of the person who gazes into it. From the rear, however, this mirror is transparent and anyone looking through it can see a person standing in front of the mirror.

Manufacturers report a wide use of this "speakeasy mirror" by police departments and government officials in viewing criminal suspects. It is possible for a witness to examine a suspect through such a mirror without being himself seen.

This interesting building specialty can be produced at low cost and should find many uses in the building field. If



This "speakeasy mirror" is transparent from the rear. If installed in a home, the housewife could see who is at the door without being seen herself.

placed on the front or back door of a residence, it will permit the housewife to look out and see who is at the door without herself being seen. Business men will find it useful for their office doors and a wide range of uses in banks, post offices, clubs, hospital operating rooms, broadcasting stations, stores, etc., is indicated.

Because of its low cost and unusual interest, this is a specialty that should be popular. Full details will be sent on request.

For information about any products described on these pages write American Builder, 105 West Adams St., Chicago, Ill.

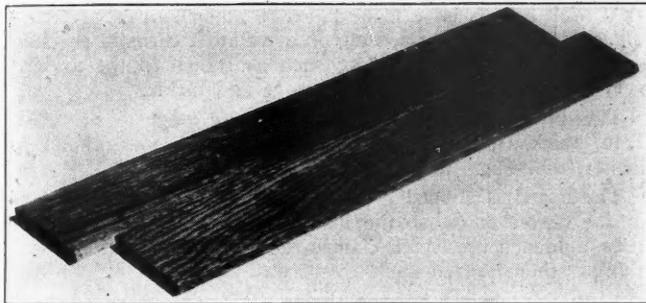
## New Factory-Finished Flooring at Low Price

THE many advantages of pre-finished flooring which can be laid and used the same day have long been known to builders. A well known manufacturer has just announced a new line of high quality, ready to use oak flooring at a greatly reduced cost. The new price range puts this quality product in a price class that makes it available for a wide range of uses in modernizing and new work.

This flooring is given a new kind of finish at the factory, a finish that is fused with the wood, binds the fibers together and gives a service of extraordinarily long life. Because the flooring can be installed complete in an average size room in a single day, with that room ready for use that same evening, it is especially desirable for modernizing work. It gives the builder a new selling argument.

The enduring quality of the machine-finished surface with its accompanying low upkeep cost is of course a strong sales argument to home owners. In addition, this flooring is treated on the underside and on all edges with a moisture-resisting compound that permanently prevents warping.

Construction details make the flooring easy to lay. It has a flexible V-type tongue and groove joint that fits quickly and snugly. A flat, beveled-edged tongue permits rapid nail-



High luster machine finish, flexible V-type tongue and groove joints, nail holes punched, are features of this new low cost flooring.

ing without setting. Nail holes are punched at the factory.

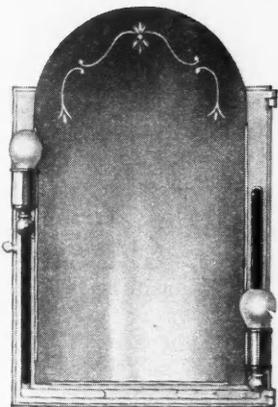
Delivered to the job in compact bundles, this flooring makes possible a quick, beautiful job. There is no scraping, sanding, filling, varnishing, waxing, buffing or waiting. The new low cost makes it available for all types of work. Full details will be sent on request.

## Perfect Light for Bath Cabinet

THIS new specialty hits the most vital spot in the house.

It is a sturdy, attractive bathroom cabinet with two adjustable lights that make shaving a delight and please the hearts of women when performing their make-up.

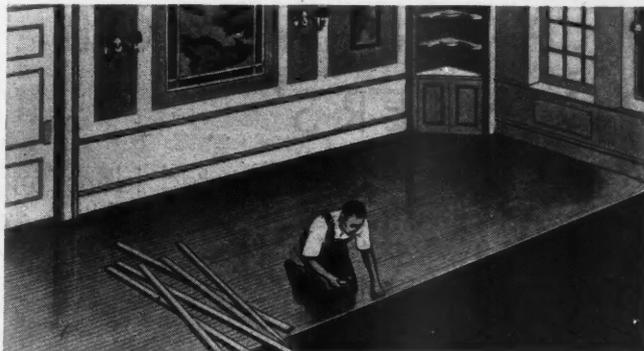
The lights slide up and down in slots on the mirror frame, giving a perfect light in any way desired.



This sliding light feature turns the simple mirror and cabinet into an article of first importance in the house. It is suitable for new work and also for modernizing for it revives the whole bathroom. The two lights provide all the illumination needed in the average small bathroom.

Cabinets are strong and

Adjustable lights on this sturdy cabinet are popular with both men and women.



New pre-finished flooring is laid rapidly. Room is ready to use the same day.

sturdy, and the sliding light mechanism cannot get out of adjustment. Various shapes and sizes at varying costs are available, and full details will be sent on request.

## Filters and Humidifies Air

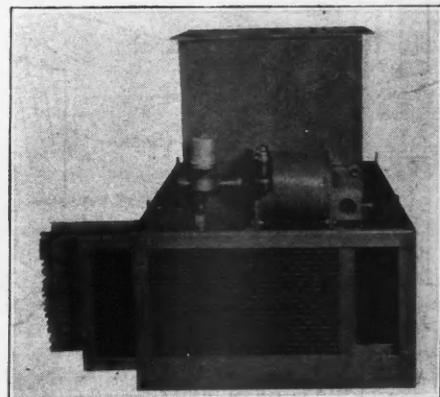
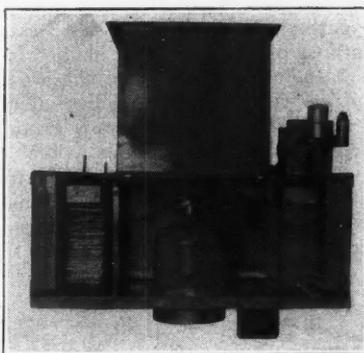
A NEW device which will circulate, filter, and properly humidify air in a home without the use of a duct system, using electric power at the same rate as a single incandescent lamp, has been announced. The device is capable of producing a complete change of air in the lower part of a house in 40 minutes, or about one and one-half changes per hour.

Control of the humidity is automatic and is done by a humidistat which measures the relative humidity of the air and automatically controls the amount of moisture evaporated in the new equipment.

The device has an evaporating capacity which will supply an adequate amount of moisture to homes with a volume not exceeding 50,000 cubic feet. It has a filtering capacity which will take care of a volume of about 15,000 cubic feet—or a home with six to eight rooms on the lower floor.

It is installed in the first floor of a home and discharges a gentle flow of air through the floor grill. This air is taken from the basement and passed through a filter which removes dust suspended in the air. It then passes through a humidifier which makes use of hot water to facilitate evaporation. The

water is heated by a small amount of steam supplied by the existing boiler. Cleaned and humidified, the air then passes through the discharge grill. The circulation is produced by a quiet, elastically-mounted fan driven by a small motor. The air is brought back to the basement through a return grill at the far side of the house.



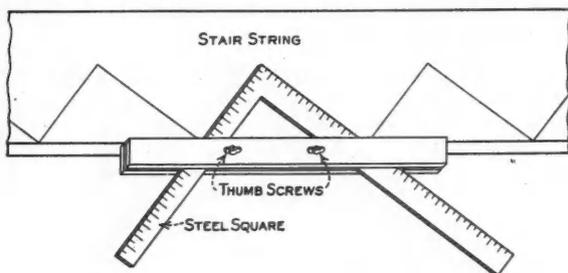
Two views of scientific new home device that cleans and humidifies air. Filters are removable. Fan is operated by quiet motor.

# PRACTICAL JOB POINTERS

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

## Helps Lay Out Stairs

I AM enclosing a sketch showing a simple method of laying out stairs, rafters, etc. Simply apply two small pieces of wood about  $\frac{1}{4}$ "x $1\frac{3}{4}$ "x2'-0" to each side of the steel square. These pieces are held in place by thumb screws. It saves much time and proves useful in many ways.—W. R. BLUHM, Rochester, N. Y.

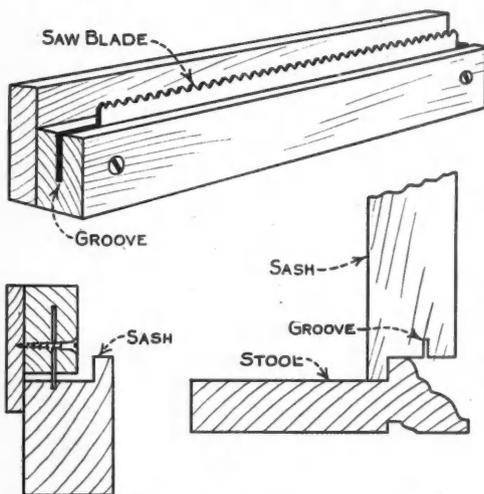


Guides keep square held in place.

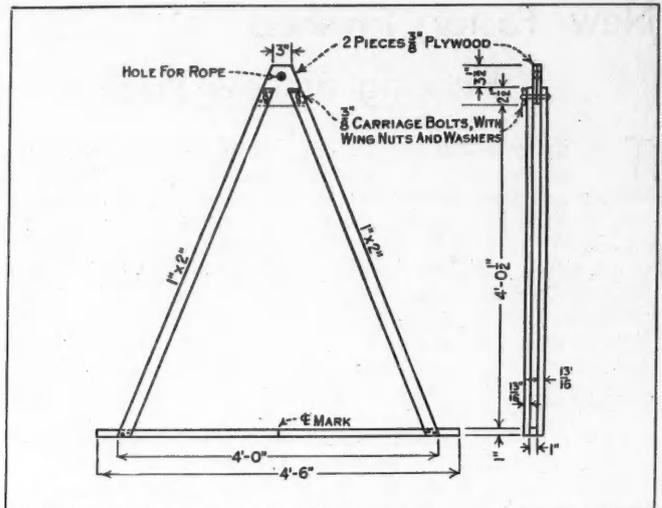
## Hand Tool Cuts Grooves

CUTTING the water drip groove on the bottom edges of casement and similar sash is a mean job. This simple hand tool is quickly made and does this job neatly. It consists of two hardwood blocks 7 inches long. One is  $\frac{3}{4}$  x  $1\frac{1}{4}$  inches in section with a saw kerf 1-inch deep cut in the  $\frac{3}{4}$ -inch edge about  $\frac{1}{4}$  inch from one side. The other block is  $\frac{1}{4}$  x  $1\frac{3}{4}$  inches in section and is set vertically to act as a guide. Two screw holes are made in the saw part so positioned as to be just outside the ends of the cutting blade.

For this take a 5-inch length of old compass saw blade. Insert so as to project about  $\frac{3}{16}$  inch, then tighten the wood screws. It is used like a plane with the guide sliding along the outside of the sash and the blade cutting a narrow groove  $\frac{1}{4}$  inch in. In case an old compass saw blade is not available, a piece of thick hacksaw blade can be used. When this is the case, it is possible to have at least one end with a hole through it so one screw can be so positioned as to pass through this.—MORRIS A. HALL, White Plains, N. Y.



Details for simple groove cutter.



This sling proves very useful in hoisting large pieces of wall board to difficult locations:

## Sling for Hoisting Wall Board

WHEN insulating boards, plaster boards, or any kind of wall boards have to be taken to upper stories of a building, and cannot be carried up, on account of turns in the stairs, or for other reasons, a sling such as shown in the sketch is very useful in hoisting them by rope and tackle.

The dimensions given in the sketch are made to suit boards  $\frac{7}{16}$ " thick, two at a time or one  $\frac{7}{8}$ " thick. For other thicknesses, the sling should be made to suit.

The board is slipped into the sling, the center of the board at the center mark, so the load balances. The wing nuts are then tightened up, which clamps the board fast, and the whole thing is then hoisted up.

With this sling I hoisted sheets of insulating board 4 x 11 ft. x  $\frac{7}{8}$ " thick, up to and into a second story window, single handed, without damaging the boards in any way.—H. N. ROWLAND, Parkerford, Pa.

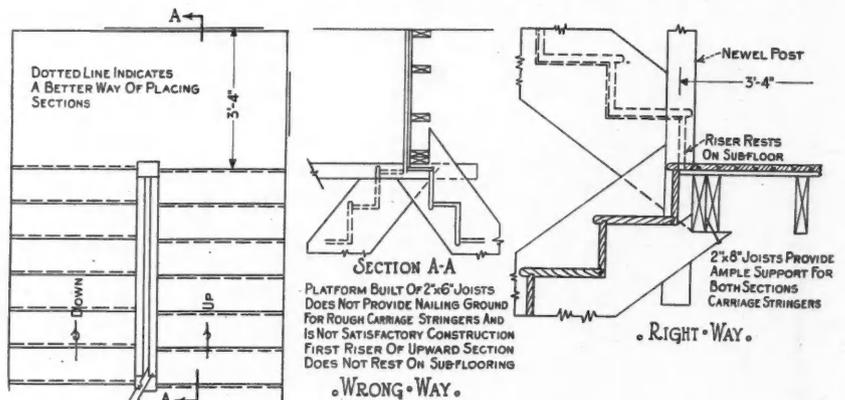
## Stair Platform

YOU will find here enclosed a sketch showing the conception I have of a better way of erecting platforms and laying out the stair sections.

As a stair builder, I have learned about small details that are not understood by many a good carpenter who comes across a stair job.

There are many things to be said about stairs, and the part they often play in the house should bring them oftener in the *American Builder*.

Houses of good taste have a stairway well in view, so its design as well as its construction should be in line with the best in the home.—RENE LECHEVALIER, New York City.

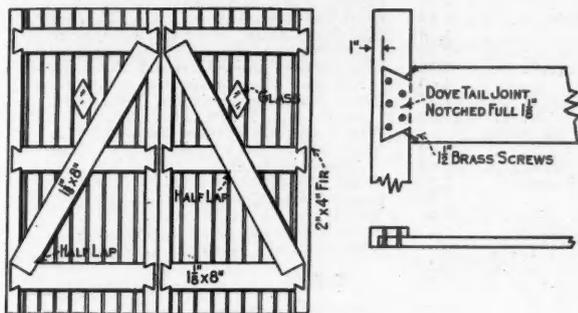


Comparing a few good and bad details of stair platform.

### Sagless Garage Door

IN building garage doors, I make them substantial and sagless by building them as shown in the sketch. For the top, bottom, and center rails, I use 1 1/8" x 8" W. P. I mark and cut the wedge-like pin in the ends of each cross rail and then mark the corresponding notches in the 2 x 4 stiles the full 1 1/8" depth and set the cross pieces in place. You are then ready to mark the brace. Set the brace diagonal from meeting stile to jamb stile and mark it. Then cut it and fit it in place and put it together with 1 1/2" brass screws.

For the covering use 1 x 6 C. B. W. P. sheathing screwed in place with 1 3/4" brass screws.—JOSEPH DOCIMO, Cos Cob, Conn.



According to Mr. Docimo, this type of construction produces a sagless door.

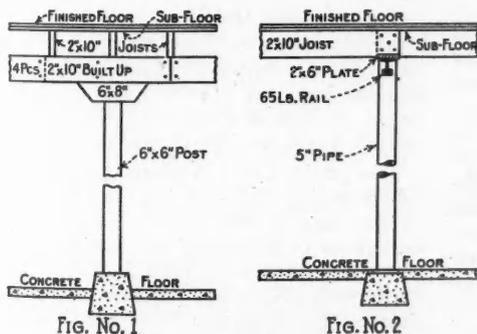
### Steel Rail for Support

MY Sketch No. 1 shows construction that is commonly used, and often results in an unsatisfactory job. When this wood construction is used, it is likely to be full of moisture by the time the building is under roof, and usually remains in this condition, more or less, until plastering is finished, and finished floors and interior trim is in place. Then when furnace is in use for a time, the shrinkage that takes place, causes sagging and warping of the wood girder, breaking of the plastering, joints will open in woodwork around base and floor, and in general an unsightly, unsatisfactory job.

My Sketch No. 2 shows construction which eliminates these faults and makes a much better looking job, as well as a less expensive one, as it is fire-proof, and will not decay.

It is satisfactory in cases where standard steel I-beams and colum supports are not easily available.

Top ends of steel pipe columns are cut out to fit over the steel rails, by use of acetylene torch. The steel rails that I usually use are 65 lb. Columns can be set 10 or 11 feet on centers, and will carry a full two story residence. It is less in the way of plumbing and hot air pipes.—JOHN L. STEEL, Wellston, Ohio.



At left is shown method of support by steel rail.

### Squaring Frames

WINDOW and door frames can be very easily and accurately squared by the diagonal method. By this method after the frame is assembled a piece of blind stop or molding is placed in a lower corner of the frame and run to the opposite upper corner and this distance carefully marked. The position of the stick is then changed to measure the other diagonal of the frame and marked. If the marks do not cor-

respond exactly the frame is out of square.

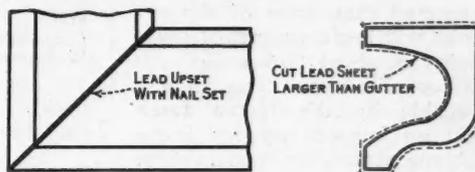
The frame can then be adjusted to where it is square or to where the diagonals correspond and a brace can be nailed on it to hold it true until it can be place in the wall.

This method is especially useful since it requires no elaborate equipment and also tends to magnify rather than minimize errors in squaring of frames. This method can also be used in erecting framing and studding but a much longer timber will be required. Its main advantage is that it is accurate.—C. L. SMITH, Jackson, Miss.

### Cure for Leaky Gutters

JOINTS in wood gutters have a tendency to leak if some method is not used other than filling the joint with paint or white lead.

My solution of the problem is to cut a piece of sheet lead just a little larger than the size of the gutter and insert in the joint. After the gutter has been securely nailed to the building, upset the lead sheet by means of a nail set and hammer, thus wedging the metal into the joint very tightly and firmly so that it will not come out as white lead often does.—ROY H. BETTS, Seattle, Washington.



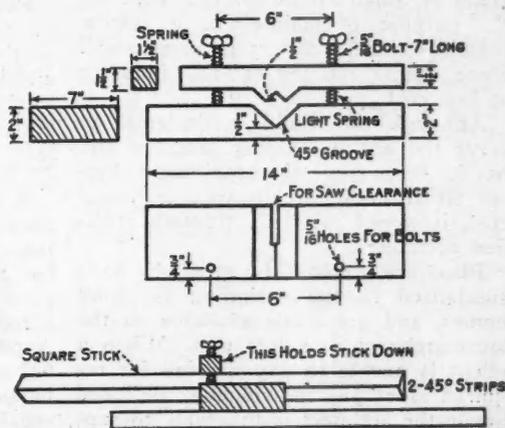
Sheet lead is used to prevent gutter leaks.

### Power Saw Attachment

I AM sending you a sketch of a device for making 45° or Chamfer Strips. Material for same consists of:

- One piece hardwood 2" x 7" x 14" long.
- One piece hardwood 1 1/2" x 2 1/2" x 12" long.
- Two 1/8" bolts 7" long, with wing nuts.
- Two springs 2" long, about 3/4" diameter, about 16 gauge for top.
- Two springs 2" long, about 3/4" diameter. Not so strong for bottom.

Cut a 45° groove in middle of 14" piece, leaving 1/2" of wood. Cut 1/8" slot about halfway through, or 3 1/2" in bottom of this groove for circular saw clearance. Bore two 5/16" holes 3/4" away from the edge and 3" from center on the side away from slot. Sink the heads of bolts and drive them in. Make the piece for the top. Saw a 45° groove 1/2" deep in the center



Power saw attachment for making chamfer strips.

of this piece. Make a mark on a 45° from edge of this groove both ways. Rip 1" of wood away until you come to mark. Bore two 3/8" holes 3" from center, 3/4" from edge.

To assemble these pieces, first, put the light springs on bolts, then the top piece, next the stronger springs and wing nuts. Place this on the saw-table so that the saw is in center. Bring up the guide, put a C clamp on the other end.

First square your pieces 3/4" or 1 1/4" (whatever you want). Allow 1/8" larger for the saw cuts away some of the material. Use a fine saw for this work.—H. B. MASON, Box 13, Dunear Falls, Ohio.

# NEWS—building activities of the month

## Home Loan Board Says Members Must Reloan Borrowings

WASHINGTON, D. C.—A regulation was adopted by the Federal Home Loan Board on November 22 providing that money advanced to financial institutions should be passed on to individual home owners for re-financing or home modernizing and repairs.

This policy is said to be designed to insure productive use of the funds, and to prevent borrowing institutions from amassing cash in their vaults to increase their liquid condition.

It is expected that some of the regional banks will begin the actual placing of money in about two weeks.

This policy will insure that money made available by the Home Loan Banks will go immediately for home building, home repairs or modernizing. The United States Building and Loan League has calculated that at least \$500,000,000 could be used for modernizing alone, without approaching the saturation point for much needed repairs.

## New Architectural Service for Homes

TO meet demand for the highest type of architectural service for small homes, a new organization has grown up with headquarters in Chicago.

A group of architects has formed what is known as the Architectural Guild of Small Home Design, Inc., for the purpose of maintaining a system permitting the architect to serve small home clients and the building industry at low cost.

Although the Guild is designed to serve the entire building industry and has for its purpose the providing of better small home architecture at lower cost, it works primarily through qualified architects.

Plans are prepared by men who have specialized in the designing of small homes, and are made available to the local architect at a low cost. When a client is unable to pay the full fee required for an individually designed home, the architect is thus able to supply skillfully prepared stock plans, together with complete architectural supervision at a lower cost than would be possible without the Guild service.

The first of a series of books giving information and illustrations of good small home architecture have been prepared. Several of the Guild designs were published in the AMERICAN BUILDER last month and others appear this month.

Under this plan the architect is able to serve the small home building in-

Sand, Gravel, Stone, Slag, Cinders, etc.	46.98	Hardware, rough and finished	5.18
Brick (Face, Common, Fire, Paving, etc.)	18.33	Paints, Varnishes, Glass	8.72
Tile (Fireproofing)	3.55	Roofing and Sheet Metal	14.37
Tile, Facing, Terra Cotta, Floor and Wall	7.38	Finished Flooring (other than cement, wood, or tile)	1.90
Concrete and Cinder Block	3.28	Screens, Shades, Awnings, etc.	0.63
Cut Stone, Granite and Marble	11.84	Heating and Ventilating equipment	31.90
Riprap, rubble, etc.	1.48	Plumbing and Gas Fitting equipment	33.39
Cement	40.21	Electrical appliances and supplies	25.64
Lime	1.79	Elevators, Dumb Waiters and equipment	13.05
Plaster, etc.	4.00	Pipe: Drain Tile, Vitrified, Concrete, Segment Tile Corrugated	5.83
Structural Steel	34.67	Pipe: Cast-Iron, Sheet and Tube Steel, etc.	9.30
Reinforcing Steel	13.48	Wire Cable, Guards and Fencing	0.94
Cast Iron, Miscellaneous, excluding pipe	2.42	Bituminous Paving Materials, Tar, Asphalt and Oil	7.23
Metal Doors, Windows and Trim	4.64	Wood Piling and Timber	1.64
Metal and Wire Lath and Furring	1.66	Ready Mixed Concrete	0.87
Ornamental Metal Work	3.86	Machinery	5.41
Lumber, rough and finished	33.40	Metal Products	5.05
Lath, Shingles and Shakes (Wood)	1.21	Miscellaneous	6.77
Millwork	13.48		
Composition Board	2.19	TOTAL	\$428.72
Waterproofing Materials	1.05		

This table gives an analysis of building costs, all types, in terms of material and equipment. Data based on 1929 U. S. Construction Census.

dustry, working with contractors, lumber dealers and prospective customers at low cost, while at the same time giving the best type of architectural supervision, co-operation and help.

**P. C. A. Elects Conn**—Cementmen gathered at the Thirtieth Anniversary meeting of the Portland Cement Association in Chicago Nov. 15 elected Charles F. Conn chairman of the board of directors. Mr. Conn is president of the Giant Portland Cement Company of Philadelphia. H. L. Block, president of the Missouri Portland Cement Company of St. Louis, was elected treasurer of the Association.

**Realtors to Capital**—Washington, D. C., will be the place for holding the coming mid-winter annual business meeting of the National Association of Real Estate Boards, the executive committee announces. The meeting will be held at the Willard Hotel, on January 25, 26, 27 and 28.

**R. F. C. Helps B. & L.**—Loans aggregating \$91,403,238 to 787 building and loan associations had been authorized by the Reconstruction Finance Corporation up to October 31, according to a report made public on November 16. Applicants subsequently canceled \$2,605,022 of this amount, \$85,391,939 was disbursed to them in cash, and they have repaid \$6,367,353. Also, 85 loans, aggregating \$88,238,500 were authorized to 75 mortgage loan companies.

The number of applications received has declined recently each month. For example, the applications by building and loan associations numbered 124 in June, 139 in July, 140 in August, 105 in September, and only 62 in October. The applications by mortgage loan companies numbered 32 in June, 16 in July, 21 in August, 15 in September, and 10 in October.

## R. F. C. Makes Loan to Housing Firm

THE Reconstruction Finance Corporation agreed on November 1 to lend \$3,057,000 to the Hillside Housing Corporation of New York City for construction of a neighborhood unit of low rental apartments to house 1,581 families. The loan is the first under that section of the Reconstruction Finance act permitting loans to corporations formed for the purpose of eliminating slum areas.

New York is the only state that comes under this section, due to the fact that such corporations must be regulated by state or municipal law as to rents, charges, capital structure, rate of return and areas and methods of operation.

The Hillside Housing Corporation is a private concern. The development will be in Bronx borough, New York City, and the loan will take the form of purchase of Hillside bonds by the Reconstruction Finance Corporation.

The project is a modern and beautiful grouping of buildings with large garden and court areas, providing a maximum of light and air. Only 34 per cent of coverage of land is called for.

Clarence S. Stein is the architect. Starrett Brothers and Eken are the contractors.

An important feature contributing to the success of the project is that the land was provided at low cost (82 cents per sq. ft.) by Nathan Strauss, Jr. Payment was accepted in the form of stock in the corporation, allowing the entire amount of the first mortgage to go for the building.



## Prize Awarded Sink Designer

GUSTAV B. JENSEN is shown above receiving from Walter Rendall Story, critic and writer on decorative arts, the Award of Merit from the National Alliance of Art and Industry for the design of a Monel Metal kitchen sink. This sink received the greatest number of jury votes in the Design and Industry Exhibition, Household Appliances Class, of the National Alliance of Art and Industry held at the Art Center Galleries in New York City. As well as receiving the "Award of Merit" in the Household Appliances Class, this sink received a greater number of jury votes than any other object in the exhibition. The sink is of streamline design and is constructed in one piece. The metal of which it is made is silvery satin in appearance.

**New Wage Pact**—After three months of controversy Chicago mill work carpenters, who number more than 3,000 in normal times, resumed work on November 7 under a new agreement with the Mill Work and Cabinet Manufacturers' Association. The agreement was reached through the intercession of the Building Construction Employers' Association, of which E. M. Craig is executive secretary. It brings to an end the open shop declared by the manufacturers after a failure to reach an agreement last August.

Under the new agreement, which is to be operative for five years, subject to change by negotiation, wages will be fixed at 65 cents an hour—15 per cent above the average for such work in the area within a 500 mile radius of Chicago. The old scale was \$1 an hour. The new agreement also provides for a five day week.

**Estimating Costs**—"Estimating Construction Costs," is the name of a new course being offered by the Extension Division of the University of Wisconsin, at Madison.

It is designed for the needs of estimators, engineers, designers, architects, and contractors. According to Professor H. E. Pulver, in charge, the course embodies the use of charts for recording the student's own cost data, and simplifying his estimating problems with the least effort.

**Fewer Lumber Yards**—Every day brings word of lumber and building material yards going out of business.

Some are bought and operated by competitors, some absorbed by local competitors, others liquidated.

In a recent interview, E. E. Woods, secretary-manager of the Southwestern Lumbermen's Assn. in Kansas City, stated that 167 yards in his territory had passed out.

Sixty-one per cent of the yards in his territory are line yards. In Oklahoma, 80 per cent are in chains or line yards, Kansas, 61 per cent, and Missouri, 48 per cent. He states that the independent yard with local owners seems to hold on stronger than the chain yard. Mr. Woods gives as the reason that the independent owner needs a job and can cut his overhead to the point of a living, even during these times.

Mr. Woods says that in some towns where one of two yards closes out, the remaining yard holds as much as 75 per cent of the total volume of both, while in other towns most of the trade drifts to towns with several competing yards. Here the good-will and merchandising ability of the remaining yard is put to test.

**Lumber Stocks Low**—H. C. Berckes, secretary-manager of the Southern Pine Assn., reports from New Orleans that stocks on hand at his reporting mills November 1st were 30 per cent below January 1st. He says that the reduction since January 1st for his industry at large is 500 million feet.

### 1933 DEALER CONVENTION DATES

ASSOCIATION	CONVENTION DATES 1933	CITY	HOTEL
Mountain States	Jan. 12-13-14	Denver, Colo.	Cosmopolitan Auditorium
Northwestern	Jan. 17-18-19	Minneapolis	Bellevue-Stratford
Eastern Penna.	Jan. 18-19-20	Philadelphia	Claypool
Indiana	Jan. 18-19	Indianapolis	Daniel Boone
West Virginia	Jan. 23-24	Charleston	Pennsylvania
Northeastern	Jan. 24-25-26	New York	Noel
Tennessee	Jan. 25-26	Nashville	Ararat Temple
Southwestern	Jan. 25-26-27	Kansas City	Pantlind
Michigan	Feb. 1-2-3	Grand Rapids	Shrine Temple
Iowa	Feb. 7-8-9	Des Moines	Stevens Hotel
Illinois	Feb. 7-8-9	Chicago	Webster Hall
Ohio	Feb. 8-9-10	Pittsburgh	High Point, N. C.
Western Penna.	Feb. 8-9-10	Pittsburgh	Sheraton Auditorium
Carolina	Feb. 9-10	High Point, N. C.	John Marshall
Wisconsin	Feb. 14-15-16	Milwaukee	Omaha
Virginia	Feb. 17-18	Richmond	Robt. E. Lee
Nebraska	Feb. 22-23-24	Omaha	Brown
Mississippi	Feb. 23-24	Jackson	Multnomah
Kentucky	Feb. 23-24-25	Louisville	Alexandria
Western Assn.	Feb. 23-24-25	Portland, Ore.	Nueces
California	Nov. 3-4-5-31	Los Angeles	Angebilt
Texas	Apr. 11-12-13	Corpus Christi	
Florida	May 11-12, '33	Orlando	

**Farm Housing**—To the five million American farm homes in which all water for household use is still carried in from the well, waste is carried out in pails, and lighting is by kerosene lamps, the President's Conference on Home Building and Home Ownership offers, in the publication of its final report on "Farm and Village Housing," a program for the improvement of these conditions.

The report is the work of a committee of forty-five specialists in various fields of agriculture and housing, under the chairmanship of Provost A. R. Mann of Cornell University. It is based upon a survey of the physical conditions of rural housing throughout the nation.

## OCTOBER CONSTRUCTION VOLUME LOWER

BUILDING permits issued in 572 cities and towns during October amounted to \$31,400,024, a decline of 13.3 per cent from September, when permits amounted to \$36,238,605 as compared with a normal seasonal expected increase of 5.5 per cent, according to the S. W. Straus & Co., survey.

Permits for October were 64.2 per cent below the corresponding month of 1931.

The twenty-five leading cities as a group reporting the largest volume of permits for October show a decline of 3.2 per cent from September, 1932, a decline of 62 per cent from October, 1931, and a decline of 74.2 per cent from October, 1930.

New York City heads the list in volume of permits, reporting \$4,248,954, compared with \$24,964,804 for October, 1931. Baltimore is second with permits aggregating \$1,995,450 for October, 1932, against \$1,599,240 for the corresponding month of 1931.

F. W. Dodge Corporation reports that construction contracts awarded in the thirty-seven states east of the Rockies from Nov. 1 through Nov. 15 totaled \$50,990,300. During the same period of October, 1932, volume was \$54,339,300. Total construction for October,

1932, was valued at \$107,473,900 contrasting with \$127,526,700 for September and \$242,094,200 for October, 1931. Building construction dropped 4 per cent from September, nonresidential building about 25 per cent and public works 22 per cent. However, public utilities contracts were almost double the September volume.

The 25 cities reporting the largest volume of building permits for October are as follows:

	Oct., 1932	Oct., 1931
1. New York, N. Y. . . . .	\$4,248,945	\$24,964,804
2. Baltimore, Md. . . . .	1,995,960	1,599,240
3. Los Angeles, Cal. . . . .	1,253,450	3,459,905
4. New Orleans, La. . . . .	916,337	121,184
5. Chattanooga, Tenn. . . . .	886,250	152,600
6. Philadelphia, Pa. . . . .	845,970	2,738,820
7. Louisville, Ky. . . . .	775,750	343,435
8. Washington, D. C. . . . .	711,675	1,476,760
9. San Francisco, Cal. . . . .	614,619	1,357,340
10. Pittsburgh, Pa. . . . .	555,518	1,878,612
11. Cleveland, Ohio. . . . .	515,450	548,000
12. Cincinnati, Ohio. . . . .	506,045	1,695,300
13. Boston, Mass. . . . .	501,420	1,294,387
14. St. Louis, Mo. . . . .	352,849	580,055
15. Dubuque, Iowa. . . . .	349,056	40,207
16. Milwaukee, Wis. . . . .	345,886	1,065,947
17. St. Paul, Minn. . . . .	326,947	326,947
18. Alameda, Cal. . . . .	324,479	26,650
19. Minneapolis, Minn. . . . .	313,110	635,165
20. Detroit, Mich. . . . .	306,637	996,750
21. Denver, Colo. . . . .	294,557	730,820
22. Yonkers, N. Y. . . . .	293,060	498,510
23. Hamilton, Ohio. . . . .	244,965	12,630
24. Providence, R. I. . . . .	211,675	415,554
25. Evanston, Ill. . . . .	191,950	142,250
Totals . . . . .	\$17,882,560	\$47,101,328

## Long-Bell to Sell Enterlocking Lumber

**M**ANUFACTURING and sales rights under the Laughlin patents for Enterlocking Fabricated Building Lumber have been acquired by the Long-Bell Lumber Sales Corp., Kansas City, Mo., and a full line of this labor-saving material is now being produced in Douglas fir at the Long-Bell mills at Longview, Washington.

Enterlocking Fabricated Building Lumber comes to the building site ready for the carpenter to put into place in conformity with any desired plan. It should not be confused with ready-cut house construction—it is building parts in harmony with time-tried architectural, building and lumber practices, and is adapted to use in any type of building. No two homes need be alike in design or size; merely use more or less of the individual parts as the particular building may require.

Through simplification and standardization, the manufacturers have a co-

ordinated system of machined pieces so that more than three-fourths of the lumber entering into all usual construction is ready for use.

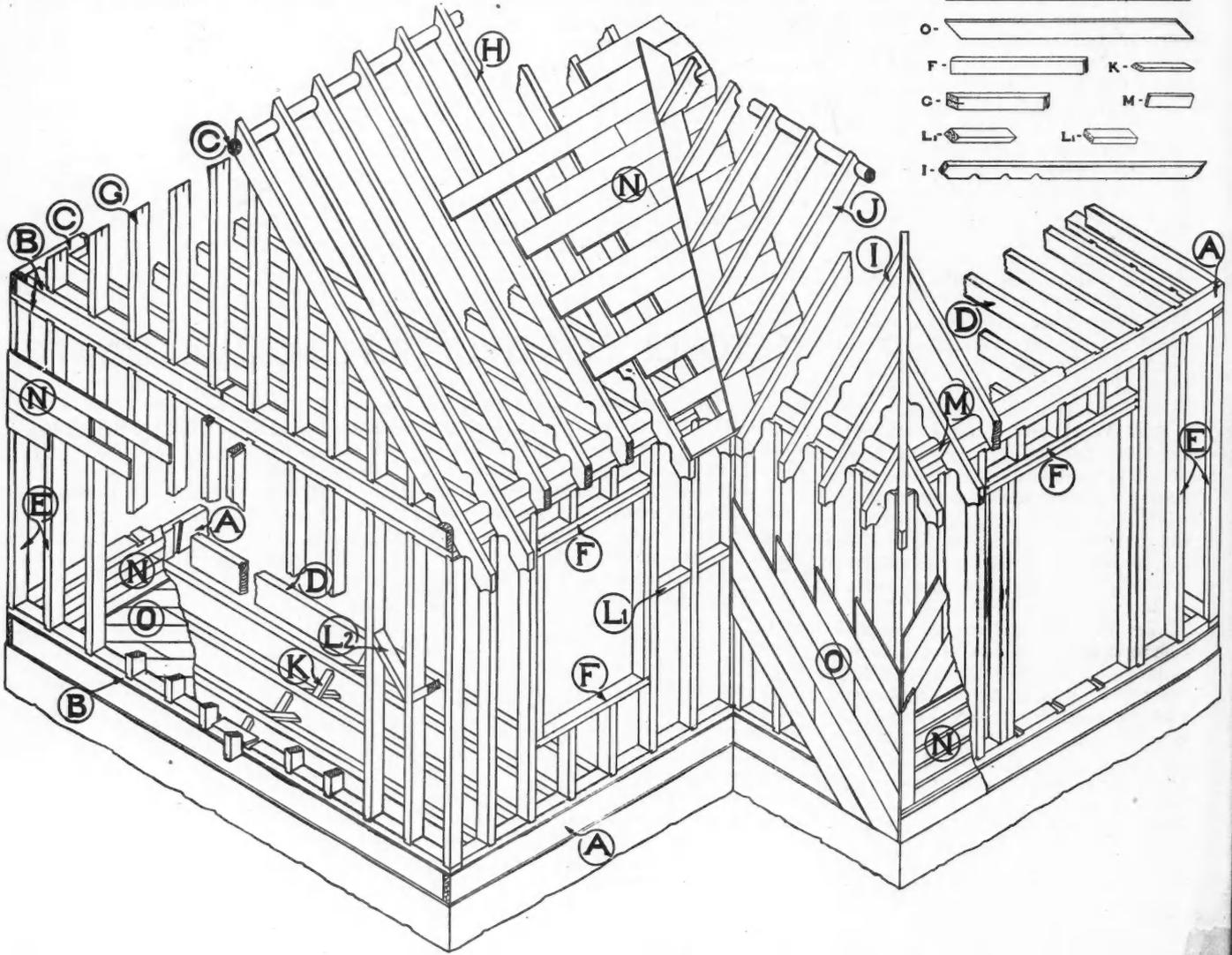
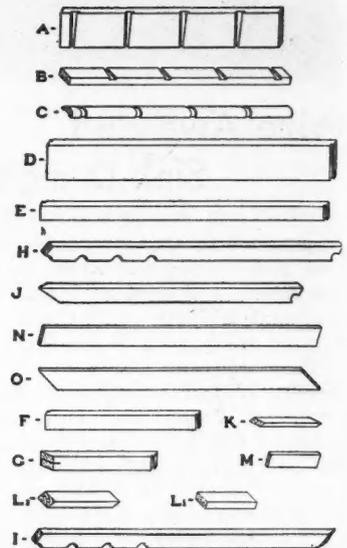
There are only ten basic framing members; only nine lengths of square-end board stock; only six lengths of diagonal-end sheathing—all precision cut and graded for the purpose intended. There is but one grade of this material—the right one for the particular use.

All framing: joist headers, joists, sills, studs and plates go together with a strong enterlocking joint patented) made possible by a machine-made, wedge-shape dovetail. The spacing of the mortised members of the enterlocking joints on the headers, sills and plates is on 16-inch centers, thus automatically assuring correct centering and positive alignment of all joists and studs. With only nine lengths of floor and ceiling joists practically any desired width of building may be obtained.

Enterlocking Fabricated Building Lumber will reduce the "in place in the building" cost because it eliminates

waste lumber and freight paid on waste lumber—the most economical and yet the right grade of lumber for the purpose intended is chosen—to a large extent building is "pre laid out" as the joist headers, sills and plates are mortised to receive and position the joists and studs exactly on 16-inch centers.

Special advantages for dealer and carpenter are: elimination of a multiplicity of grades—simplifies the ordering of lumber—has sales appeal lacking in ordinary construction lumber, and eventually reduces inventories.



Above is shown a partly constructed home which illustrates how the different members of Enterlocking Fabricated Building Lumber go into place. Members illustrated are: A—joist headers, B—stud plates or sills, C—rafter plate, D—floor and ceiling joists, E—studs, F—window and door headers, G—gable and dormer studs, H—rafter, I—hip jack rafters, K—bridging, L1—fire stop, square end, L2—fire stop, mitered end, M—fillet, N—square end board stock, O—diagonal end sheathing.

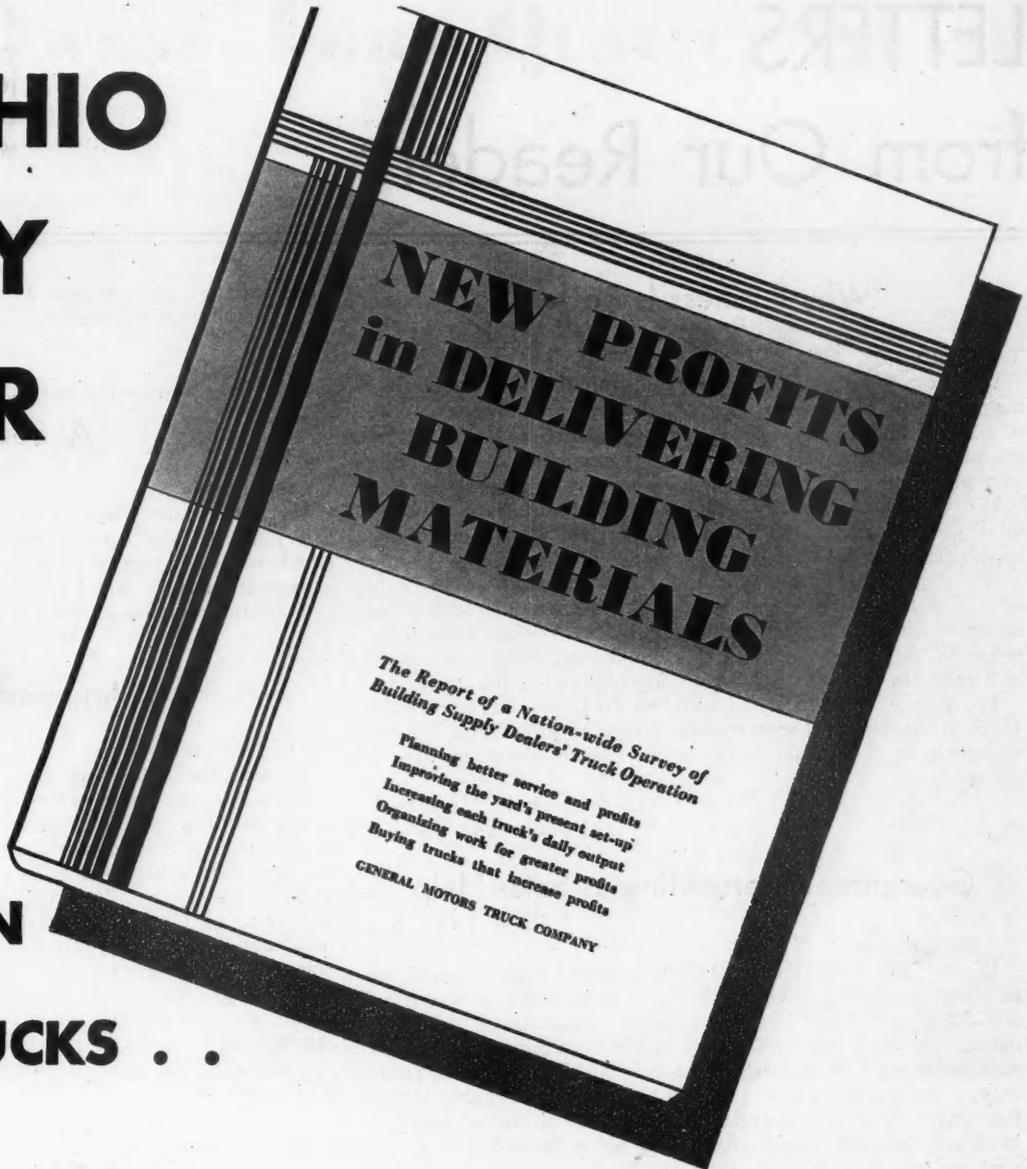
# AN OHIO VALLEY DEALER

saved

## \$4,693

## ON THE OPERATION

## OF 32 TRUCKS . .



Simply by re-arranging his yard, as suggested in "New Profits in Delivering Building Materials," an Ohio Valley dealer eliminated an average daily waste of 12 to 14 hours of truck time. The plan enabled him to eliminate one truck from his fleet, and netted him a saving of \$4,693.48 in the course of one year.

"New Profits in Delivering Building Materials" shows you how to put your delivery operations on a sound, money-saving basis. It covers every detail that affects truck operating costs, from the dispatching of orders to the building up of "dull-season" lines. It puts the spotlight on dozens of wasteful practices that may have been going on right under your eyes for years.

Transportation engineers compiled this "book of

experience" after making a comprehensive study of the delivery methods employed by the most successful building material merchants all over the country. They put into it the same kind of sound knowledge that a high-salaried delivery expert might bring you.

"New Profits in Delivering Building Materials" is a book that every dealer, whether he runs one or a hundred trucks, should read. It's interesting, and concise, and very helpful. Mail the coupon for a copy, with our compliments.

General Motors Truck Company, Pontiac, Michigan  
Send me, without charge or obligation, your book, "New Profits in Delivering Building Materials."

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City and State \_\_\_\_\_

# GENERAL MOTORS TRUCK COMPANY

PONTIAC

(A Subsidiary of Yellow Truck & Coach Mfg. Co.)

MICHIGAN

# LETTERS

## from Our Readers

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

### "Why Business Is Rotten"

Pittsfield, Mass.

To the Editor:

We are regular subscribers to your valuable and interesting magazine. We are very sorry manufacturers fail to see the wonderful and timely opportunity to advertise NOW. It is shameful the lack of support you are receiving at the hands of manufacturers! It's just why business is rotten.

We wish to buy many squares of Vermont slate of good quality. Please give the names of quarries; we will send our own trucks for same.

On page 37 of the November AMERICAN BUILDER, you advertise new narrow line windows. We want to buy sixty of these windows. Send details and price. We are also interested in factory built mantels, bookcases, pantry counters and cabinets. We restore and modernize old buildings.

It's going to be hard for builders to buy materials in the U. S. A. because we won't know where to find them. Thank God, Canada is near us with her virile and progressive pioneers.

J. P. MIDDLETON,  
Retailer and Builder.

### Guaranteed Repainting as Sales Help

Penn Laird, Va.

To the Editor:

During 1920-21-22 I was a builder of small frame bungalows and cottages, near Richmond, Va. Then business was good and lucrative. I was superintendent of the work and also carpenter. One feature of my work in which I was very successful was: in making a contract to build or sell a property, I always stipulated I would repaint the property within five years; if it was shingled, to stain the shingles; paint to be best grade white lead mixed, any color desired, labor, etc., without any cost to property owner.

I believe this clause helped me to get a great many contracts. One contract was given to the purchaser. My own was placed in a special safe deposit box, together with three \$50 Liberty bonds, waiting for "the day." This was as a guarantee in case of my demise before doing the work. Should the original purchaser sell, this applied to the contract also. After three years, all had applied for the repaint work and it was done as agreed to.

When construction work starts again, I may pick up my tools where I left them, but then I am 56 years old now, and we must give the younger men a chance.

With this painting scheme, you can always point with pride to work you have done, as the painting will look good at least 6 or 8 years. Try it!

N. E. MATTHEWS.

### Likes Holt Cost Keys

Byron, Ill.

To the Editor:

Being in the lumber business and general contracting we are very much interested in your magazine. We find the plans and details are a great help; and we keep them on file. Mr. Holt's cost plan is surprisingly accurate, and the AMERICAN BUILDER is to be complimented on carrying the message to its many readers. The average lumber dealer should derive the most benefit from this plan. Very few dealers know construction costs, but with a few hours spent on a basic house they shouldn't get very far out of line.

Business is beginning to look a little brighter in this section; of course the farmers feel hurt and the merchants' shelves are only one row deep; but nevertheless there is a

more satisfied feeling and, as many have remarked, sort of an expectancy in the air.

D. L. SHERMAN  
of G. W. Sherman & Sons,  
General Contractors, Lumber & Fuel Dealers.

### A Bouquet

Washington, D. C.

To the Editor:

My congratulations to you on the excellent August issue. Every article is of interest and has a definite practical value which makes it one of those publications that no one in an organization feels that he dare overlook.

You and your associates are certainly doing fine work.

W. F. SHAW, Trade Extension Mgr.,  
National Lumber Manufacturers Assn.

### Aquarium Putty

Philadelphia, Pa.

To the Editor:

In your October issue, page forty-six, there is an inquiry referring to the construction of aquariums.

We can supply you with information regarding the putty to be used in the construction of them. We manufacture an aquarium putty which is about the consistency of ordinary glazing putty, but instead of drying hard it dries firm and remains elastic indefinitely. It is waterproof and when used and allowed to stand about two days before putting water in the aquarium, a tough surface hide forms, which will not disintegrate. It is being used for this purpose right along, and we have been advised that it is the most satisfactory material that aquarium builders have run across.

If we can supply any further information, we shall be very glad to do so.

CALBAR PAINT & VARNISH CO.  
V. E. DEWEES, Vice-Pres.

### A Gloomy View

Chicago, Ill.

To the Editor:

The outlook for building activity in and around Chicago is practically at zero for another two to five years or ten years. Why give contractors and tradesmen any wrong ideas or hopes for next year?

The population of Chicago and other big cities is decreasing, excepting for starving small town folks and bums who can always get food in the big cities and come in for winter.

The city is overbuilt in the loop—small stores, apartments, factories, warehouses, etc.

People over fifty years of age, out of employment now and fed by the state, will never again go back to work.

Manufacturing methods have improved so much the last fifteen years that not more than 75 per cent of the available workers will ever be required again.

The debts of the nation—government, state, county, city—special improvements, building services of all kinds, farmers, public utilities, etc., are too great ever to be paid.

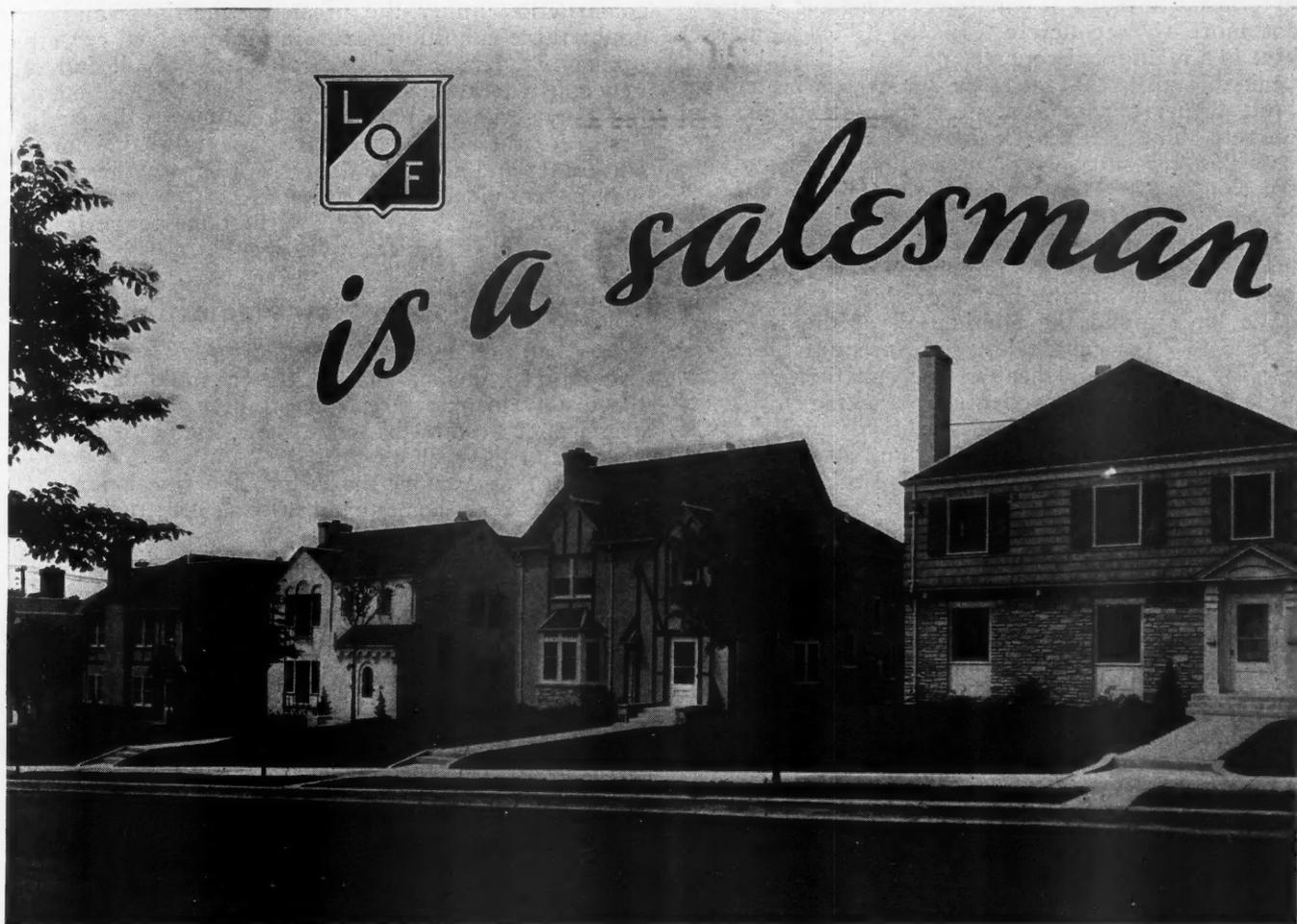
Our export business is shot. Taxes are too high.

Better times will return. I hope we do not lose our life and our courage waiting.

EDWARD M. MILLER, Building Contractor.

NOTE: The attached letter accompanied Mr. Miller's remittance in the amount of \$3.00 to cover the renewal of his AMERICAN BUILDER subscription for another two years from November, 1932, to and including November, 1934—which doesn't make our subscription manager feel so gloomy! Perhaps it won't be such a long wait as Contractor Miller fears. This publication is still confident of an improvement in 1933.—Editor.

# LIBBEY · OWENS · FORD QUALITY GLASS



Four duplexes in a group of sixteen constructed by Hull-Berg Corporation, Minneapolis, Minnesota. Architect: W. F. MacGregor. All are glazed with Libbey-Owens-Ford Quality Glass.

Because glass is the first thing that strikes a prospect's eye when he goes out to buy or rent a home, it is vitally important that it be *fine* glass . . . the kind that implies quality workmanship in every other detail, as well. That is why L·O·F Quality Glass is more than just a "building material". It is a *salesman*. Its sparkling beauty, enduring brilliance and remarkable clarity are not only immediately obvious, but, if you mention the name "Libbey-Owens-Ford" beforehand, the prospect is prepared for them. National advertising has planted firmly in the public mind a recognition and acceptance of the fact that the L·O·F label identifies the finest obtainable in flat 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.*

## LIBBEY · OWENS · FORD QUALITY GLASS

## The Small House of the Future

(Continued from page 23)

for the building mentioned above. If gypsum lumber is used in place of concrete, it costs 4c a square foot more than concrete. In the Chicago market there is a reinforced concrete precast slab and joists, obtainable up to 20-foot spans which can be had for about 4c per square foot more than steel joist and concrete. The battle deck floor with junior I beams costs 25c per square foot more than ordinary construction or \$200.00 more for the building mentioned above.

Now one can readily see that wood joist construction is going to stay for the cheaper type home and steel bar joists for the better grade.

We have found the elimination of the basement saves 5 to 7 per cent, taking into account the added cost for laundry and heater space on the first floor. In larger homes our clients are asking for social rooms in the basement, and we have found that the only facing material that can stand basement conditions is face brick. We have tried other materials, only to regret it.

It would be fine if we could eliminate some of the lost motion in small house construction. This we find is due to the number of trades required, 18 in all. This is where the shop fabricated house will give the standard house some stiff competition. However, it is not the masonry wall that causes the delay. The masonry walls on the above-mentioned building could be erected in three days with six bricklayers, and I would like to know of another trade that does more per dollar received than the bricklayer. It surely is one building trade that is nearest straight line mass production, with your mechanics working in a line, and always in sight of the boss. We believe the other portions of the building can be erected faster, as before mentioned, by doing away with plastering and by simplifying the present methods and organization.

Regarding the style of our future homes, it is an indisputable fact that changes in architectural style in dwellings are less easily accomplished than in other buildings because the home is regarded, and rightly so, a permanent and personal investment. The materials used in its construction must permit individual taste as to shape, texture and color.

A national survey recently made proves that less than one-half of the homes in America measure up to a minimum standard of health and decency; so there is business ahead for all of us.

The high cost of owning one's home is not in the original cost but in the financing and carrying charges, taxation and special assessments. By reducing the financing charges  $\frac{1}{2}$  per cent for the five-year period and interest charges 1 per cent per year, the amount saved, for example, on a \$5,000 five-year first mortgage on a \$10,000 house, would be the equivalent of interest charges on more than \$900, or more than 10 per cent of the original building cost, without lot.

For comparison, I will take another owner's tax on his home and compare it with mine on the same kind of house but in different counties near Chicago. His tax is twice mine and if set up as interest on capital, my home costs \$3300.00 less, or a saving of 16 per cent in the original cost. Now in the case of the other owner, if his house had been financed with a smaller finance charge and with a mortgage carry-

ing 5 per cent interest and had been built in my county, the saving would be equal to 26 per cent of the original cost of that building. We can readily see the stumbling block for rapid return of small house construction under the present conditions, and no doubt these conditions exist in all industrial centers.

The magazines, newspapers, etc., are all full of new construction ideas, most of which have no merit, but they serve the purpose of keeping up the public desire for their home or improvements to their present home; and after the depression is over the public will be convinced that a home built according to their income with a *reasonable* first mortgage is the safest and most logical investment.

## "Let's Adopt a New Plan of Battle"

(Continued from page 12)

tively, isn't it obvious that the factors to do the job are the quality manufacturer, the stronger dealer and the conscientious contractor—with the assistance of the architect and the realtor?

Let us now examine the factors and functions necessary to deliver a home or other small construction unit to the consumer.

First, we must have production of quality building materials, then economic warehousing, efficient design, thorough engineering, adequate advertising, intensified selling, safe and convenient financing, and sound construction.

Each of these functions is indispensable—there are no short cuts—we have lost the fight so far because we have failed in many of these essentials, *particularly, advertising, selling, engineering and financing.*

What divisions of man power do we have to perform these functions? Within the Industry at the present time we have the manufacturer, the dealer, the architect, the contractor and the realtor.

What functions shall each of these factors perform, and what functions must be performed co-operatively?

Production is obviously a manufacturer's function; warehousing, the dealer's; design, the architect's; and construction, the contractor's.

That leaves the functions of engineering, advertising, selling and financing to be done co-operatively.

*It is deeply significant that we as an Industry have almost totally fallen down on these functions which must be done co-operatively.*

To win the battle for our Industry's share of the consumer dollar we need a battle plan embracing and coordinating men, munitions, money and a marketing machine.

Out of the travail of six years of depression in our Industry have been conceived and born a machine and a plan—the National Homes Finance System. It drew its first breath in 1931 and is now in its second year. The infant National Homes Finance Corporation presented to you last year was made up of sixty-six dealer companies and one manufacturer.

Today there are one hundred twenty-two companies who own four hundred eighty-three yards, and forty-three quality manufacturers.

Everyone admits that lack of financing is holding up small construction.

The National Homes Finance System, because of its control of the quality of the home and the soundness of the mortgage will do more than any other agency to restore confidence of lenders in the home mortgage field.

It has access to tens of millions of dollars of consumer credit which can and will only flow through an organized Industry.

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