

# AMERICAN BUILDER

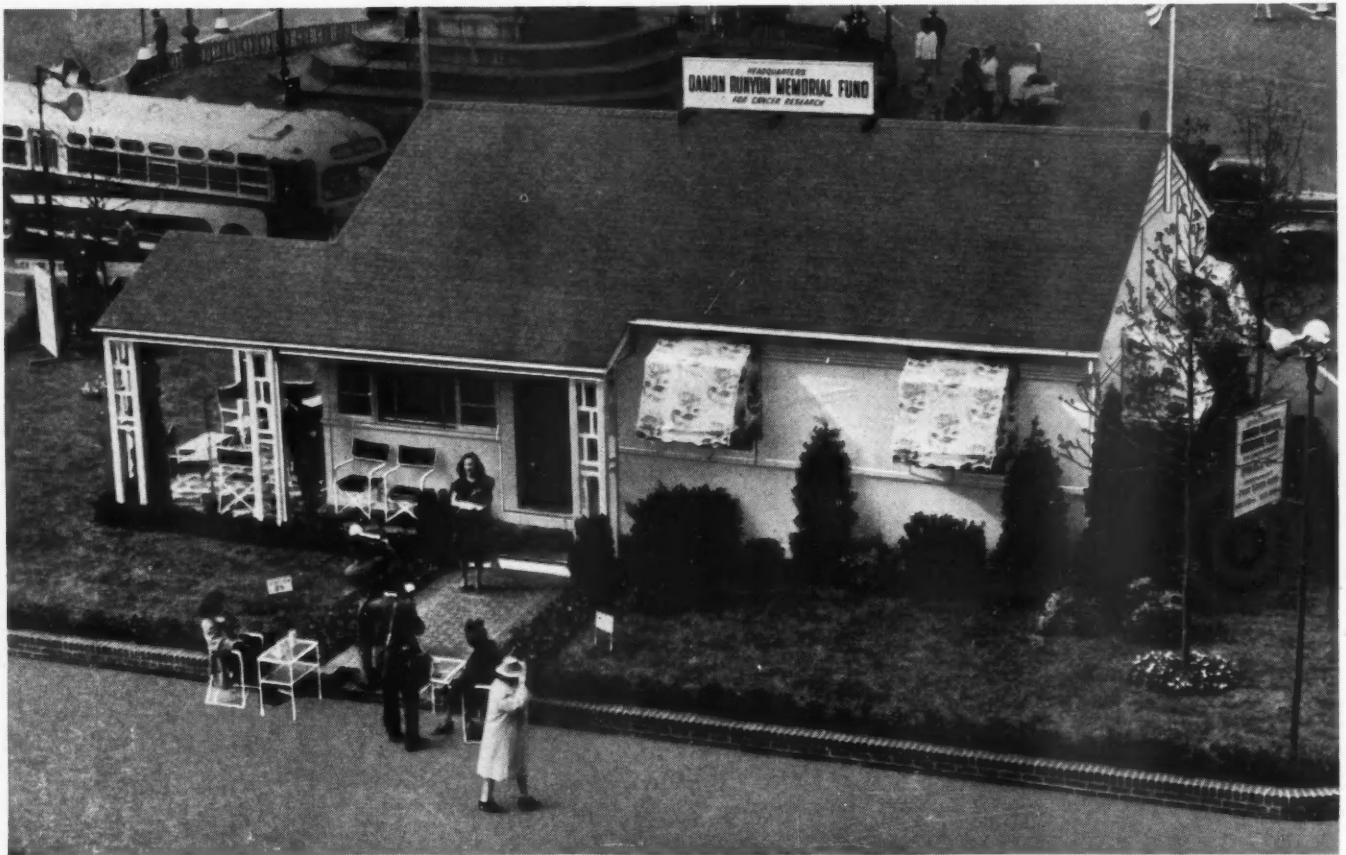
A black and white photograph of a Gothic-style building, likely a university or institutional structure. The building features a prominent arched entrance with a person standing on the steps to the right. The architecture is characterized by stone masonry and pointed arches. The title 'AMERICAN BUILDER' is overlaid in large, bold, white letters at the top of the image.

**Education — Opportunities  
For Young Men Entering  
The Building Field**

TR v.692 July-Dec. 1947

# A NATIONAL EVENT

*in the heart of New York City*



Celotex Cemesto House donated as Fund Drive Headquarters for the Damon Runyon Memorial Fund for Cancer Research

## All America is trying to win this Cemesto Home!

It's the most publicized . . . most photographed house in America today—the Celotex Cemesto Pre-Engineered Home, serving as Headquarters for the Damon Runyon Memorial Fund for Cancer Research at Columbus Circle in the heart of New York City.

Columnists have written about it . . . news-reels have filmed it . . . radio has talked about it—and Americans by the thousand from every state in the Union are sending in Cancer slogans to win this completely-furnished Cemesto Home, donated by Celotex to this vital cause.

One key to this record-breaking public in-

terest is the Cemesto Pre-Engineered construction—Cemesto—the *complete* wall material—simplifies building operations . . . speeds erection . . . saves money . . . and gives the home owner more usable space per dollar spent . . . *gracious living at modest cost.*

We invite you to examine the "Cemesto Home Building Plan." Details on request. Write, visit or phone The Celotex Corporation, 120 South La Salle Street, Chicago 3, Illinois. Telephone: Randolph 8460. Or your nearest Celotex Branch Office below:

Atlanta 3, Ga. • Boston 16, Mass. • Cleveland 14, Ohio • Dallas 1, Tex. • Denver 2, Colo. • Detroit 26, Mich. • Los Angeles 13, Cal. • Minneapolis 2, Minn. • New Orleans 12, La. • New York 17, N. Y. Philadelphia 2, Pa. • Pittsburgh 22, Pa. • St. Louis 3, Mo. • Seattle 4, Wash.

**THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS**

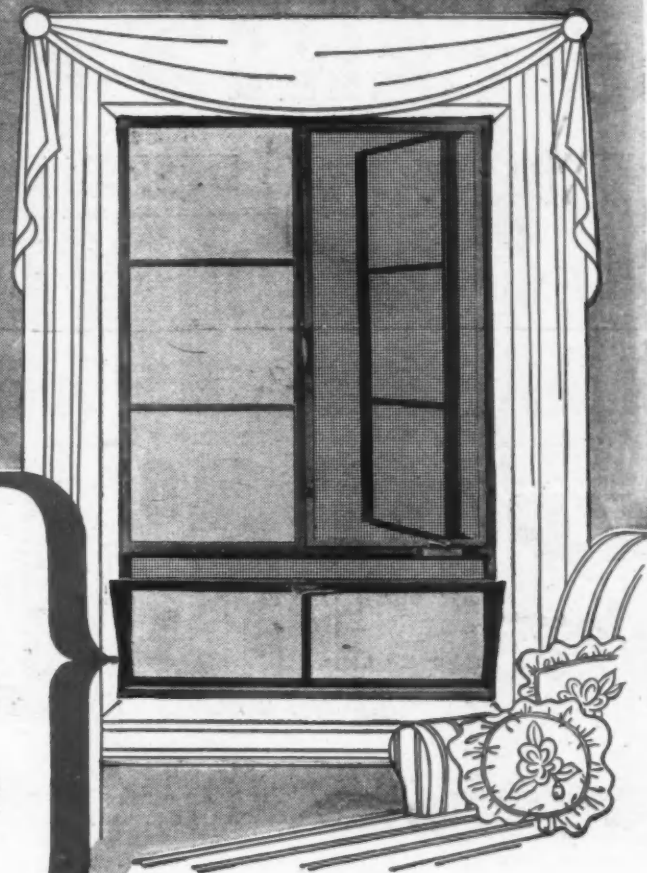
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JUL 11 1947  
DETROIT

# Latest Development in Bedroom Windows Provides

## PROTECTED VENTILATION

An in-tilting vent at the sill—that's the big feature of this brand new Bedroom Window by America's oldest and largest steel window manufacturer. Here's why this new sill vent is sure to prove popular with home buyers:



- **PROTECTS AGAINST DRAFTS.**  
Sill ventilator, when open, serves as a built-in windguard, deflecting air upward.
- **PROTECTS AGAINST RAIN.**  
Even when open, the sill ventilator deflects rain, snow, sleet, to the outside; protects interior of room.
- **PROTECTS AGAINST FALLS.**  
Sill ventilator, even when open, helps prevent a child from leaning out the window and falling.

The out-swinging ventilator provides additional ventilation when desired—catching breezes and deflecting them into the room.

Fenestra Casements add value to a house in many other ways! Their slender, graceful lines and fine hardware beautify the home. Narrow steel frames permit more glass—hence, more daylight. Easy operation is assured because vents swing instead of slide. Being steel, they can't warp, swell or shrink—they stay weather-tight. All-metal interchangeable screens snap on or off

in a jiffy, entirely from inside the room. And these durable steel windows are Bonderized for protection from rust.

The new Bedroom Window typifies the way the Fenestra line provides a right window for every need. Other examples: windows of right height for over the kitchen sink—others for over the buffet—also picture windows, with flanking swing leaves for ventilation. It's a full line of windows, standardized to speed installation and save money.



• For full information on the new Fenestra Bedroom Window and the complete line of Fenestra Casement Windows, write to Detroit Steel Products Company, Dept. AB-7, 2260 East Grand Blvd., Detroit 11, Michigan.

UP-TO-DATE HOUSES *Call for*  
UP-TO-DATE WINDOWS

# Now! LIFE INSURANCE EXPERTS PROVE THAT FORD TRUCKS LAST *up to* 19.6% LONGER

FOR THE first time in history, the scientific methods used by life insurance companies in computing rates have been put to work in figuring out life-expectancy tables for Ford Trucks.

#### 4,967,000 Trucks Studied . . .

Wolfe, Corcoran and Linder, leading New York life insurance actuaries, assembled the records of all trucks of the five sales leaders registered from 1933 through 1941 . . . 4,967,000 trucks in all. Then they prepared *truck* life-expectancy tables in exactly the same way that they prepare *human* life-expectancy tables for life insurance companies.

#### Ford Trucks On Top!

The result? Ford Trucks Last Longer! Up to 19.6% longer than

the other 4 sales leaders! Why is this true? Because Ford Trucks are *built stronger*. They're *built to last longer*! That extra life that's put into Ford Trucks comes from Ford experience in building *more* trucks than any other manufacturer. Ford knows *how* to build trucks that last longer!

See your Ford Dealer today. See the life-expectancy charts. You'll see why it'll pay you to place your order for a Ford . . . the truck that lasts longer!



*Certified Proof*

#### What Longer Truck Life Means to You . . .

#### Why It Pays to Wait for a New Ford Truck!

It stands to reason the longer you use a truck, the less it costs to own. That's why longer-lived Ford Trucks are the top truck value. And, logically, Ford longevity means lower maintenance costs . . . less time in the shop. It means more unused miles when you're ready to trade, and a better trade-in. Yes, any way you look at it, you'll get more truck for your money with a Ford Truck . . . because Ford Trucks last longer!

**FORD TRUCKS  
LAST LONGER!**

#### The life expectancy of a Ford Truck is:

- 13.1% longer than that of Truck "B"
- 3.2% longer than that of Truck "C"
- 7.6% longer than that of Truck "D"
- 19.6% longer than that of Truck "E"

#### OFFICIAL ACTUARIAL CERTIFICATE

Based on the application of sound and accepted actuarial methods to the actual experience as measured by truck registrations, we hereby certify that, in our opinion, the accompanying table fairly presents the relative life-expectancy of the trucks involved.

**WOLFE, CORCORAN AND LINDER**  
Life Insurance Actuaries, New York, N. Y.

FOR PLASTER BASE



DOUBLE DUTY  
INSULITE GIVES

# Double FOR THE MONEY!

Here are the facts: Double-duty INSULITE SEALED LOK-JOINT LATH performs *two* functions for inside walls—

(1st) *Plaster Base*

(2nd) *Insulation*

Two values for the price of one. A distinct advantage, quickly understood and appreciated by your customers. Easily and quickly applied. Provides a strong, rigid plaster base . . . PLUS insulation and vapor control. Patented "Loks" guard against plaster cracks, assure a smooth, long-lasting plaster job.

**INSULATES AS IT  
BUILDS AS IT**

**double-duty  
INSULITE**

**BUILDS  
INSULATES**

"Insulite" is a registered trade mark, U.S. Pat. Off.

INSULITE DIVISION  
PAPER  
MINNEAPOLIS 2, MINNESOTA

MINNESOTA & ONTARIO  
COMPANY

**In every type of home!  
In every state of the Union...  
and in many foreign countries!!**

**F**OR OVER THIRTY YEARS, hundreds of millions of feet of Upson quality panels have given new and added beauty to thousands upon thousands of homes.

There is nothing better, we believe, for re-covering unsightly and unsafe cracked plaster. Surveys show that 8 out of 10 homes have at least one room with cracked plaster. Upsonized ceilings are the answer! They go on quickly and easily—and are forever crackproof.

But there is a difference in materials. Upson panels represent maintained quality. Even during the war, The Upson Company continued to make shipments to relieve the needs of dealers, contractors and home owners.

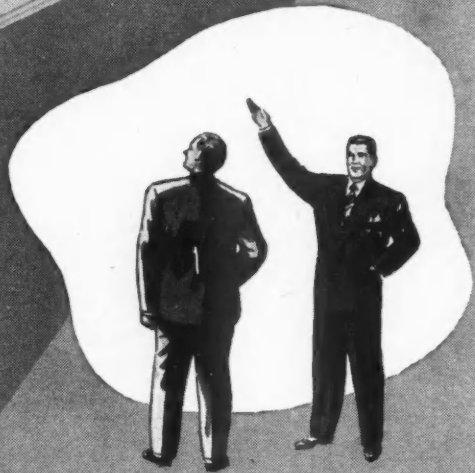
Cut prices to sell shoddy materials may come again. But the discerning contractor is not misled. He knows that there is no real bargain in inferior merchandise.

Dealers can take pride in the sale—and carpenters in the use—of time-tested Upson panels.

Due to excessive demand, Upson Panels are not yet in full supply. But use them when you can. Remember, products of proven worth are hardest to get. It will pay you to wait for quality Upson Panels.

**THE UPSON COMPANY**  
Lockport, N. Y.

**PACEMAKER**



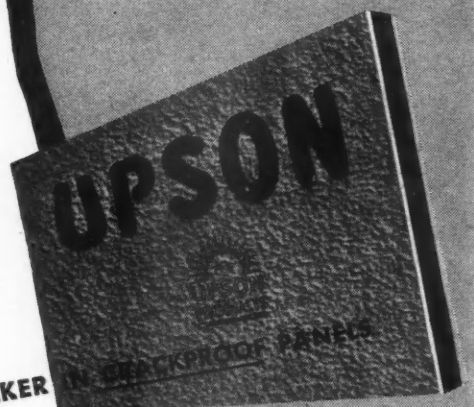
**Upson owners tell their friends:**

"When I built my home 25 years ago, I used Upson Panels. They were so satisfactory that I used them again 6 years ago in a 100 year old house. I am now planning to build in North Carolina and expect to use your Panels again."

F. W. P.  
Providence, R. I.  
Sept. 1, 1944

"We have had Upson Panels in our home for nearly 5 years. We have been completely satisfied with them. They can easily be cleaned, and we need never worry about the walls or ceilings cracking."

A. C. S.  
Donaldsonville, La.  
January 25, 1945



Upson Quality Products  
Are Easily Identified by  
The Famous Blue-Center

# AMERICAN BUILDER

AND BUILDING AGE

F O U N D E D — 1 8 7 9

JULY

VOLUME 69

1947

NO. 7

## C O N T E N T S

### AMERICAN BUILDER and BUILDING AGE

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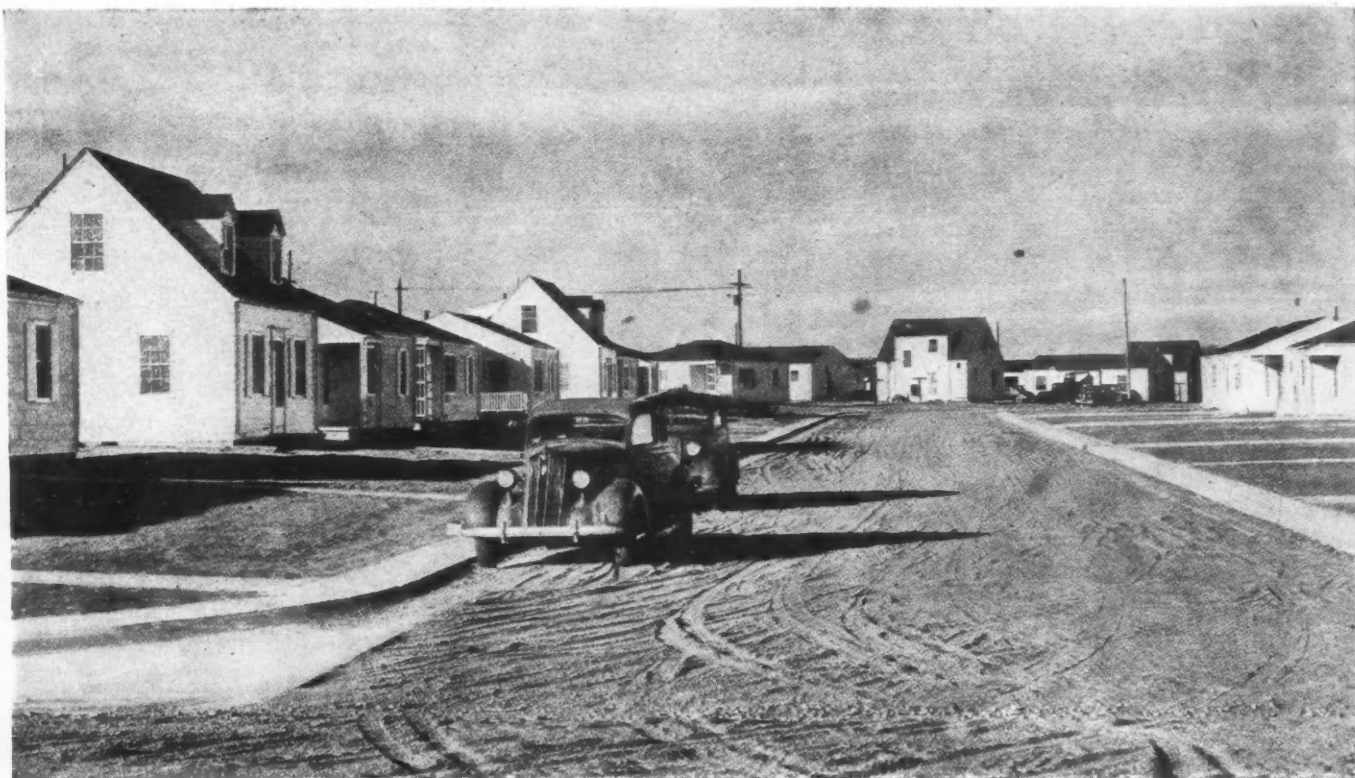
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Editorial Office, 105 West Adams Street, Chicago 3.

AMERICAN BUILDER HAS THE LARGEST CIRCULATION OF ANY TRADE JOURNAL IN ANY FIELD

# They can be built ...



**No selling problem here.** Just a few of the 412 new homes that Garrett-Bromfield & Co. are building in Denver. General Electric equipment included as a basic part of these homes promises the

owners "better living, electrically." And Garrett-Bromfield, like many other builders all over America, know that *better living means faster selling.*



**GENERAL ELECTRIC  
EQUIPPED HOMES**



**More "electrical homes,"** planned, built, and equipped for maximum appeal to homeowners. General Electric Refrigerators, Ranges, Steel Storage Cabinets and Sink Units, and Washers offer all the ease and convenience of electrical living.

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# ...they do sell fast!

**Garrett-Bromfield & Company of Denver, Colorado, report:**

**“We’re including General Electric equipment in homes from \$7200 to \$8350—And they sell faster than we can build them!”**

It's no secret that home-buyers, today, are shopping around before they buy.

Once again, people are judging your homes against those of your competitors. They're comparing quality and price. And they want to know how many and what kind of electric appliances come with the house.

Faced with this situation, you've probably asked yourself two questions:

**If I include completely equipped, ready-to-run electrical kitchens, will they help my homes sell?**

**Can I include this equipment and still keep my prices competitive with homes that don't offer as much?**

The answer to both questions is "YES!" Here's the proof—practical, on-the-site proof from a leading firm of operative

builders, Garrett-Bromfield & Company of Denver, who say:

**“For as little as \$7200 we're offering an 'electrical home' that's equipped with General Electric Refrigerator, Range, Steel Storage Cabinets and Sink Unit, and Washer.**

**“The prospective buyer is usually amazed when we explain that all this top-quality equipment will cost him only about \$2.50 to \$3.00 a month. And that he will probably save more than that through lower operating and maintenance costs.**

**“Does all this help our homes sell?**

**“Well, there may be empty new houses in this area, but they're not ours! As a matter of fact, practically every new home we build is sold before it's started.”**

### What Appliances Should You Offer?

Don't forget that people are as "choosy" about appliances as they are about new homes.

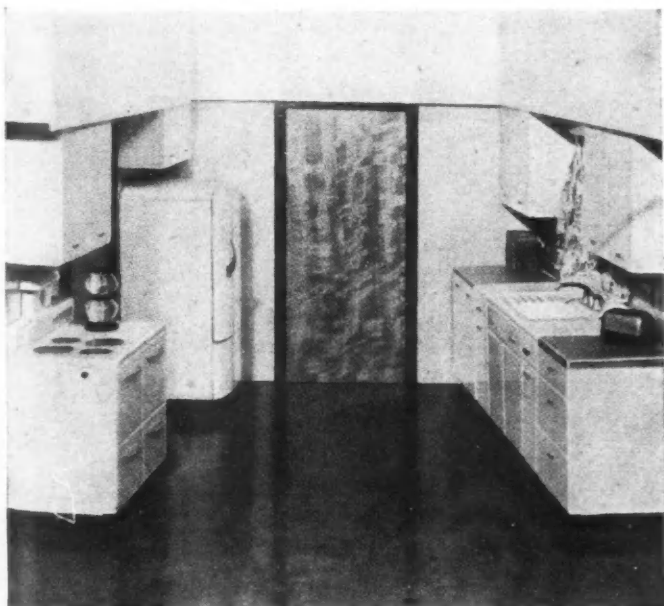
Recent surveys show that 53% of all women and 51% of all men prefer General Electric to any other appliances. This preference is *more than twice* that for the next most popular make.

So, if you want to see your homes in the "best seller" class, why not include the appliances most people want—General Electric.

### How General Electric Can Help You

The General Electric Home Bureau has worked closely with architects and builders all over the country. If you would like the benefit of this experience in helping solve some of your problems, we'll be glad to do all we can.

For complete information about available services, write to Home Bureau, Appliance and Merchandise Department, General Electric Company, Bridgeport 2, Conn.



**General Electric Kitchens** like this are effective salesmen for Garrett-Bromfield homes. All of the equipment is included in the long-term mortgage with only a minor difference in initial cost. The slight increase in monthly payments can be more than offset by the economical operation, long life, and low maintenance of dependable General Electric Appliances.

THE APPLIANCES MOST WOMEN WANT MOST

**GENERAL  ELECTRIC**

# Amazing New Radiant Heating

← →

**RADIANT PANEL REPLACES BASEBOARD  
... IS PRACTICALLY INVISIBLE**

You will scarcely notice this Baseboard Radiant Panel, yet it's right in front of your eyes! It's American-Standard's latest development in home heating. Only 8" high, it fits snugly against the wall, looks exactly like the baseboard—and can be painted any color to match the wood trim.

**Decorator's dream.** Nothing to interfere with drapes or decorations. This Baseboard Radiant Panel gives you full use of every foot of wall and floor space. Permits complete freedom in furniture arrangement.

**No cold spots.** From floor to ceiling, the new Baseboard Radiant Panel provides sun-like warmth throughout the room.

Write for more information about this amazing new Baseboard Radiant Panel Heating. And also ask for our new Home Book. It illustrates and describes American-Standard Heating Equipment and Plumbing Fixtures. Sold through Wholesale Distributors to your Heating and Plumbing Contractor. Available on easy time payments for remodeling. American Radiator & Standard Sanitary Corporation, Dept. P77, Pittsburgh 30, Pa.


Look for this
Mark of Merit

**AMERICAN-Standard**

HEATING  PLUMBING

*Serving the Nation's Health and Comfort*

**TO BUILDERS:**

Complete details of this new Baseboard Radiant Panel are now available. Just write American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.

This advertisement in full color appears in leading national magazines read by millions, many of whom will eagerly accept American-Standard's new Baseboard Radiant Panel as the most modern advancement in residential heating.

**LOOK FOR THE MARK OF MERIT**—It identifies the world's largest line of Heating and Plumbing Products for every use . . . including Boilers, Warm Air Furnaces, Winter Air Conditioners, Water Heaters, for all fuels—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim—and specialized products for Hospitals, Hotels, Schools, Ships, and Railroads.



## PUBLISHER'S PAGE

### **Taxes Are Important, but Expenditures More Important**

**T**AXES are important; but government expenditures are much more important. Excessive government expenditures may temporarily be defrayed partly by increasing government debts; but now or later they always have to be defrayed from excessive taxes.

Few people realize how great is the burden of taxes now weighing down American business. The *total* taxes of a typical medium-sized corporation were about 12 per cent of its net earnings in 1929 and are now more than 40 per cent. Hence, it must make *over 50 per cent more net earnings now* than in 1929 to have as much net earnings left after taxes to invest in its property and pay dividends. Each dollar of net earnings that it invests or pays out in dividends will buy only about two-thirds as much now as in 1929. And taxes on individual incomes now take a large part or the bulk of the dividends of reduced buying power paid out to stockholders.

Those who emphasize and often exaggerate the "profits" now being made in business usually ignore both (1) the great decline that has occurred in the buying power of each dollar of profits and (2) the great increase in the part of so-called "profits" being taken in taxes. But these are facts of vital importance. A huge increase of investment in housing and in the plant of industry and transportation must be made for years if output is to be increased enough to remedy existing shortages, reduce costs of production, pull down prices and raise standards of living. The capital for this investment, if it is to be available, *can be derived only directly and indirectly, from net earnings*. And it cannot accumulate and become available if so much net earnings are to continue to be taken in taxes from small, medium and large corporations and their stockholders to defray government expenditures.

The difficulties of reducing government expenditures and taxes have never been more strikingly illustrated than during the recent session of Congress. President Truman presented a budget for annual federal expenditures of \$37½ billion—*five times* what was spent in 1937 and *ten times* what was spent in 1931. It was contended this budget could not be reduced without imperiling national defense. But the government had only 564,000 *civilian* employees in December, 1932, while it had 929,000 in December, 1939, and 2,078,000 in February, 1947. The budget proposed for the Department of Commerce was *six times* as large as for 1939—of which one-half was for *subsidization* of the promotion of air transport by the Civil Aeronautics Administration. The budget for the Department of Labor—exclusive of the Children's Bureau which has been eliminated from it—was *twenty times* as large as in 1939. The budget for the State Department—exclusive of relief for foreign peoples—was *ten times* as large. Grants-in-aid to states and their political subdivisions, subsidies to different classes of people and subsidies to promote government or private competition with numerous industries, including home-building, have become large parts of the swollen federal budget. But, despite such facts, some selfishly-interested pressure group—which, of course, claimed it favored "economy in government"—bitterly and more or less successfully fought almost every reduction of expenditure proposed.

Only the people can compel reductions of government expenditures and taxes; and they can do it only by voting for public men who vote for reductions and voting against public men who vote against them.

*Samuel O. Drum,*

# One Hand Sawing is *Easiest!*



## *Speedmatic* SAW

**DOES MORE WORK IN LESS TIME**

**GREATLY REDUCES YOUR LABOR COSTS**

Without a doubt, these three main features of the Porter-Cable Speedmatic Saw make it the easiest handling power saw on the market.

**SPEEDMATIC HAS SPEED**—The blade enters cut at 7000 RPM. Cuts straight to the line. Greatly reduces sawing time of your carpenters.

**SPEEDMATIC HAS BALANCE**—It's so precisely balanced for one hand operation that it will saw in almost any position. It will not tip, twist or veer from the line.

**SPEEDMATIC HAS EFFICIENCY**—It delivers the most power right where you need it most—at the fast-cutting blade. Operates equally well on light or heavy work. The husky Helical Gear Drive gives longer, more reliable service.

## *Speedmatic*

**DOES MORE WORK  
PER MAN HOUR**



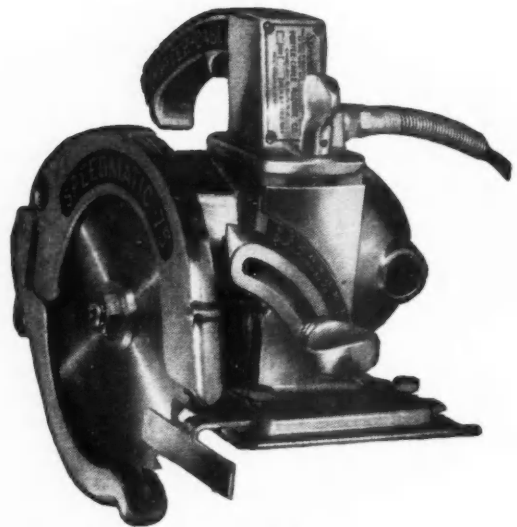
**DO MORE SANDING**

*The Faster, Smoother Way*

Does not require experienced operation. Any handy man can deliver a big day's work with the new Speedmatic Floor Sander. It's powerful . . . light and easy to maneuver . . . does smoother, faster sanding on the hardest floors. Easily carried from job to job.

*Speedmatic*

**FLOOR SANDER**



1. Handle is correctly placed.
2. Shoe is of correct width.
3. Torque reactions of blade are correctly compensated.

See your local dealer for more complete details about the Speedmatic Saw and the Speedmatic Floor Sander—both by Porter-Cable.

**PORTER-CABLE  
MACHINE COMPANY**

1721-7 N. SALINA ST., SYRACUSE 8, N. Y.

Are defin  
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RUST PRO  
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Washer seals  
and cushions.  
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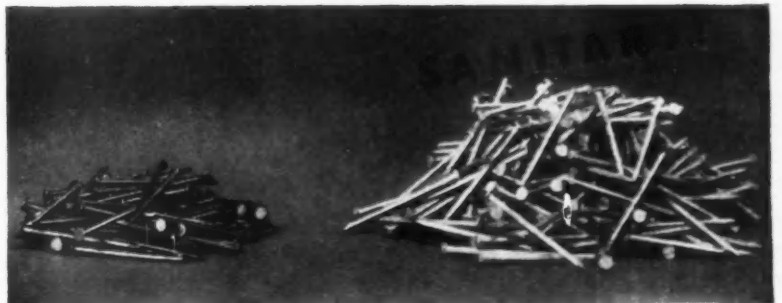
# NICHOLS Aluminum NAILS and STAPLES

- CAN'T RUST
- CANNOT STREAK BUILDINGS
- SANITARY
- 3 TIMES MORE NAILS PER LB.
- MAXIMUM HOLDING POWER

## ALUMINUM NAILS

Are definitely superior for wood siding, asbestos shingle and siding, batten, plaster board, wood shingles, aluminum and asphalt roofing. War developed aluminum alloy wire invades the nail market. It is definitely superior for the above applications.

**RUST PROOF.** Rust from steel nails or oxidation from copper nails for any of the above applications will mar the surfaces on which they are used. Aluminum Nails are solid aluminum. There is no protective coating that can be knocked off the head by hammer blows. **ALUMINUM CANNOT RUST—CANNOT STREAK OR BLEMISH THE SURFACE.** They are **SANITARY**—put them in your mouth with the same safety as food cooked in an aluminum utensil.



1 pound  
Steel Nails

1 pound  
Aluminum Nails

**3 TIMES MORE ALUMINUM NAILS THAN STEEL**  
**ENTIRE NAIL SURFACE ETCHED FOR MAXIMUM HOLDING POWER**

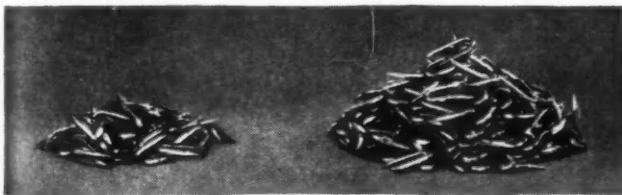
All Aluminum Nails and Staples packed 50 lbs. per keg. A 50 lb. keg contains 50% more aluminum nails than a 100 lb. keg of the same size steel nails. **WILL ALUMINUM NAILS DRIVE? Sure they'll drive!** Send for samples.

**COMMON NAILS** in sizes 3d to 40d. Use for same applications as steel nails when ultimate in corrosion resistance is desired.

**ALUMINUM STAPLES** — 9 gauge, 1" and 1 1/4" sizes.

## ALUMINUM STAPLES

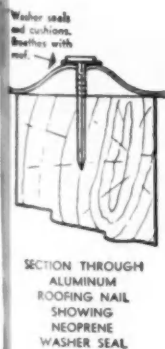
Made in two sizes—1" and 1 1/4" in 9 gauge aluminum wire. Highly desirable for use in medium hard fence posts. Nichols Aluminum Staples cannot rust. Keep in mind that there are three times as many aluminum staples as there are steel staples per pound. Packed 50 lbs. to a keg. There are 337 - 1" staples per lb., 282 - 1 1/4" staples per lb.



1 pound  
Steel Staples

1 pound  
Aluminum Staples

## Nichols ALUMINUM ROOFING NAILS Gora-Lee NEOPRENE WASHERS



Here is the best and most efficient roofing nail and washer combination ever offered. Nichols Aluminum Roofing Nails are completely etched to remove all grease and oil. This process gives maximum holding power. Sanitary! No more slipping or loosening up after application. The Gora-Lee Neoprene Washers, furnished in convenient package with Nichols Aluminum Roofing Nails, are weatherproof and resilient for exposed service. They provide an absolutely tight seal between the nail head and roofing material. These washers have withstood the severest of tests in the service of World War II from 65° to 250° above zero. They produce a cushion-like expansion joint that allows the roof to "breathe" by reducing the "pull" on the nail head. Nails are 10 ga. 7/16" head in 1 3/4" and 2" lengths. Packed 1050 nails and 1100 washers per box. Ten boxes per carton.

Also available in 50 lb. kegs for asphalt and other types of roofing—with or without washers in bulk. One box will cover 10 squares of Aluminum Roofing.

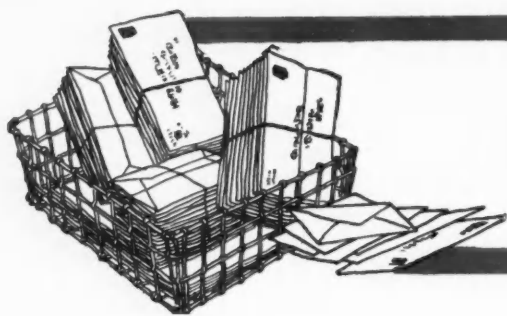
INVESTIGATE NICHOLS CORRUGATED AND V-CRIMPED ROOFING SHEETS AND ROOFING ACCESSORIES

# NICHOLS WIRE AND STEEL CO.

Main Office: DAVENPORT, IOWA

Warehouses: Battle Creek, Mich. • Mason City, Iowa  
Over 40 years in the manufacturing business

**ALUMINUM IS NOT A SUBSTITUTE!**



## Our Readers Say:

### Quit kidding

*To the Editor:* All I hear on the radio and the newspapers is that the prices of new houses are too high. You said the same thing in an editorial. Too high for what? Isn't the truth that the costs are fifty per cent or more higher than they were before the war, and that the prices have to be higher? Isn't the truth just that we builders haven't got the guts to go out and tell the public that the prices are up, and that they are going to stay up, with only a little reduction when business gets going good? If that is the truth why don't the people that speak for builders to the public say so, and quit kidding them?—S.J.O., Buffalo, N.Y.

### Lumbermen to Vets

Mr. L. A. Touchae, Commander, Amvets Post No. 19, Waterloo, Iowa.

Following up our letter to you regarding a contribution from this company to aid your Post in acquiring a home. The day after we wrote you the Des Moines Register printed part of a speech delivered before a convention of the Amvet Auxiliary by your Iowa State Commander, Mr. Edgar C. Corry, Jr. The paper quotes him in part as follows:

"We believe that price fixing and monopolistic practices among the concrete, electrical, lumber industry must be stopped . . ."

This accusation is a very serious charge. In looking back in our files we find that Mr. Corry made the same charge before an Amvet convention in Des Moines which was reported in the Des Moines Register of May 5, 1947. Price fixing and monopoly are criminal offenses. The federal Department of Justice, the FBI and other law enforcement agencies are supposed to prosecute, jail, and fine violators of the laws covering these matters. And they have. If Mr. Corry has proof to back his statements he should immediately place the proof in the hands of the proper government officials. That is his duty as a good citizen, and plank number four in your National Program calls upon Amvets "To put the duties of citizenship first . . ."

This company will never make a donation to any organization whose commanding general says we are crooks. That would smack of bribery, appeasement and cowardice. Instead of a contribution to your local home we propose the following:

The C. W. Chapman Lumber Co. will subscribe \$300 toward a fund which shall be increased by other donations to an amount which will permit your State Commander, Mr. Corry, to thoroughly investigate the real reasons for the failure of the Veterans Housing Program. He is to use as much of the fund as necessary to prod government law enforcement agencies to prosecute violators of the price fixing and monopoly laws which Mr. Corry says are the cause of the failure. Mr. Corry must have the proof, or he would not dare make the statements he did make. The balance of the fund should be used to thoroughly investigate the responsibility of the federal government for the failure of veterans' housing. A great deal of time and money could be saved if Mr. Corry will contact the American Legion, and secure the report of its special committee which investigated this same thing several months ago. Their committee covered the country from coast to coast. It checked all phases of private home building and Federal housing. It did not white-wash private business; it found plenty wrong with it, but the report placed the greatest blame right where it belongs. That was on the federal government, with its vast political bureaus, which utterly failed in everything they promised or undertook.

This company has exposed many wrongs. It has published newspaper advertisements on this subject. It has maintained and still insists that business, whether home building or anything else, cannot be done efficiently when it is kicked in the face at every turn by federal bureaucracy, hampered by federal regulations, taxed to a point of confiscation, and abused by federal propaganda.

We have openly charged that the United States government—by its failure to reduce boondoggling spending and the federal debt by its inconsistency in demanding price reductions while at the same time doing everything that any crack-pot in Washington can think of to raise prices and destroy food and goods—is mainly responsible for the mess we have now.

This company has tried its best to reduce building costs, and it is our honest conviction that almost all private business is trying its best to bring order out of the chaos which it knows is caused by federal bungling.

There are men in government who are also trying to put their country back on its feet. But they are not the pol-

iticians who shout continually for more and better federal spending. They are the patriotic statesmen who will not buy votes from anyone with so-called federal aid, or unjust subsidies, or by ridiculous and inflationary soldiers' bonus schemes. They are the men in Washington who will help Mr. Corry expose any corruption in the building business, but they will also expose what is wrong with the federal government.

You Amvets are young, full of zip, and full of fight. Put that energy to work on a very, very worthwhile project. That project should not be to get something for nothing. It should be a project to save the American form of government, and to again make this a great and wholesome country of which you can be proud, and in which you and your children can enjoy a free, democratic way of life.

We like veterans. We respect and honor most of them for the great job they did for their country. We want them to have the friendly cooperation of all citizens who were not in service in their task of making a living and securing a home. If Mr. Corry gets his fund together, call on us any time for our \$300 share.—J. H. CHAPMAN, President, C. W. Chapman Lumber Co., Waterloo, Iowa.

### Editorial helpful

*To the Editor:* Your May editorial, "Indifference versus Initiative," is squarely to the point. I used it effectively at a meeting here, and sent copies of it to other cities where it was used, and proved to be very helpful in stating the position of the home builders. I find a lot of agreement that if business is going to live through the attacks by public housers and other socialists, business will have to come up with a dynamic program. We will never get any place just telling the government and its bureaus that they are all wrong. We have got plenty to talk about. Let's get it together, and start saying it. That will be the quickest and best way to get the government and the public housers out of our hair.—DeW. K., Chicago.

### Honest statement

*To the Editor:* The first forthright honest statement about the condition of home building I have seen was the editorial in your May issue, entitled "Indifference versus Initiative." This should get wide circulation, and it should be followed up by everybody interested in building homes.—W. McN. T., Philadelphia.

# The PLANNING BOARD



*The Truscon Planning Board Says, "Normal delivery on many of our Steel Building Products is now possible. In fact, on*

*all material for which raw material is readily available, a normal rate of production and delivery is currently in effect." However, since production and delivery schedules change from week to week, we suggest you contact the nearest Truscon sales office for the latest information.*

## 47,354 Truscon Steel Casements for Stuyvesant Town Apartments

A big dent in the New York City housing shortage situation is being made as unit after unit of the new Stuyvesant Town Apartments is being completed. The entire project will cover 75 acres, with 35 separate buildings containing 8,759 modern apartments.

In every room of each of these many apartments, Truscon Steel Casement Windows will bring the occupants ample supplies of nature's free sunlight and fresh air. The beautiful design of the windows themselves helped achieve outstanding architectural distinction in the structures, both for the exteriors and interiors.

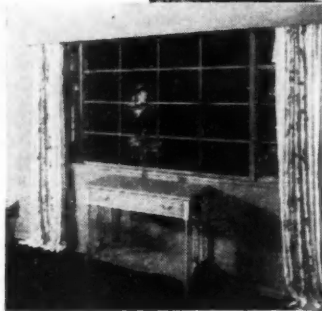
Truscon Steel Casements, due to their individuality and flexibility of arrangement, meet the particular requirements of every type of room. Where windows are opened and closed frequently, or where ventilation needs are great and varied, Truscon Steel Casements fill a definite utilitarian need in addition to being highly decorative. Clean, bright, air-controlled kitchens are possible. The side-hinged casements can be adjusted by fingertip touch to invite or retard the flow of air, to suit the range of requirements in each room.

Truscon heavy steel construction, corner-welding of ventilators and frames, projection-welding of hinges and sturdy hardware assure the home-owner a long-time, trouble-free investment in windows with an economy of maintenance. There is no sagging, binding or warping in Truscon Steel Casements. Perfect fit and uniform contact give complete protection against inclement weather. Truscon's Bondering of all steel surfaces and the baked-on prime coat provide an excellent surface for finish coats of paint, and assure maximum protection against corrosion.

Truscon Casement Screens and Storm Sash are available for quick, convenient installation. Write for free descriptive catalog showing complete range of Truscon Steel Casement types and sizes.



*Stuyvesant Town Apartments, New York City, a Development of the Metropolitan Life Insurance Company*



## Roof Jobs Made Easy

Specify Truscon "Ferrobord" Steeldeck to get the quick, economical, permanent answer to any roof problem you may have.

"Ferrobord" Steeldeck consists of a parallel system of strong structural interlocking steel members, which present a smooth surface over which can be applied built-up roofing



*Application of "Ferrobord" Steeldeck*

of any type, with or without insulation. "Ferrobord" is made from 18-gauge copper-bearing strip steel, having an ultimate strength of not less than 50,000 lbs. per square inch. Each unit is 6 inches wide and has a depth of either 1½ or 1¾ inches.

With these specifications you can design a roof job that's got strength and effective area coverage at reasonable cost. The Truscon Steel Company will be glad to cooperate with local roof companies in selecting the proper type of insulation and built-up roofing to meet certain definite requirements of structures. Write for free catalog.

## Concrete Reinforcing Bars Proved Worth in 1906

*An interesting fact is that the San Francisco earthquake disaster in 1906 served as a proving ground for Truscon's Reinforcing Bars. Among the buildings which did not crack or crumble from the quake were those constructed of concrete utilizing Truscon Bars.*

## Doorways to Skyways

Truscon Steel Hangar Doors are the product of 20 years of manufacturing experience and research combined with the best engineering skill, workmanship and materials. Their design, manufacture and erection is a highly developed art and must be undertaken by

experienced men, in order to attain completely satisfactory installations.

The success of a hangar door installation depends to a great extent on the experience and good judgment of the manufacturer's field organization. Truscon's field crews are comprised of specially trained men who "know how" through years of experience with many installations, to do just the right things to make the job a success.

Truscon designs and manufactures Straight Slide Doors; Tail Doors; Braced, Unbraced and Bifold Doors; Vertical Lift Canopy Doors and Three-Section Vertical Lift Type Doors. Write for free descriptive literature.

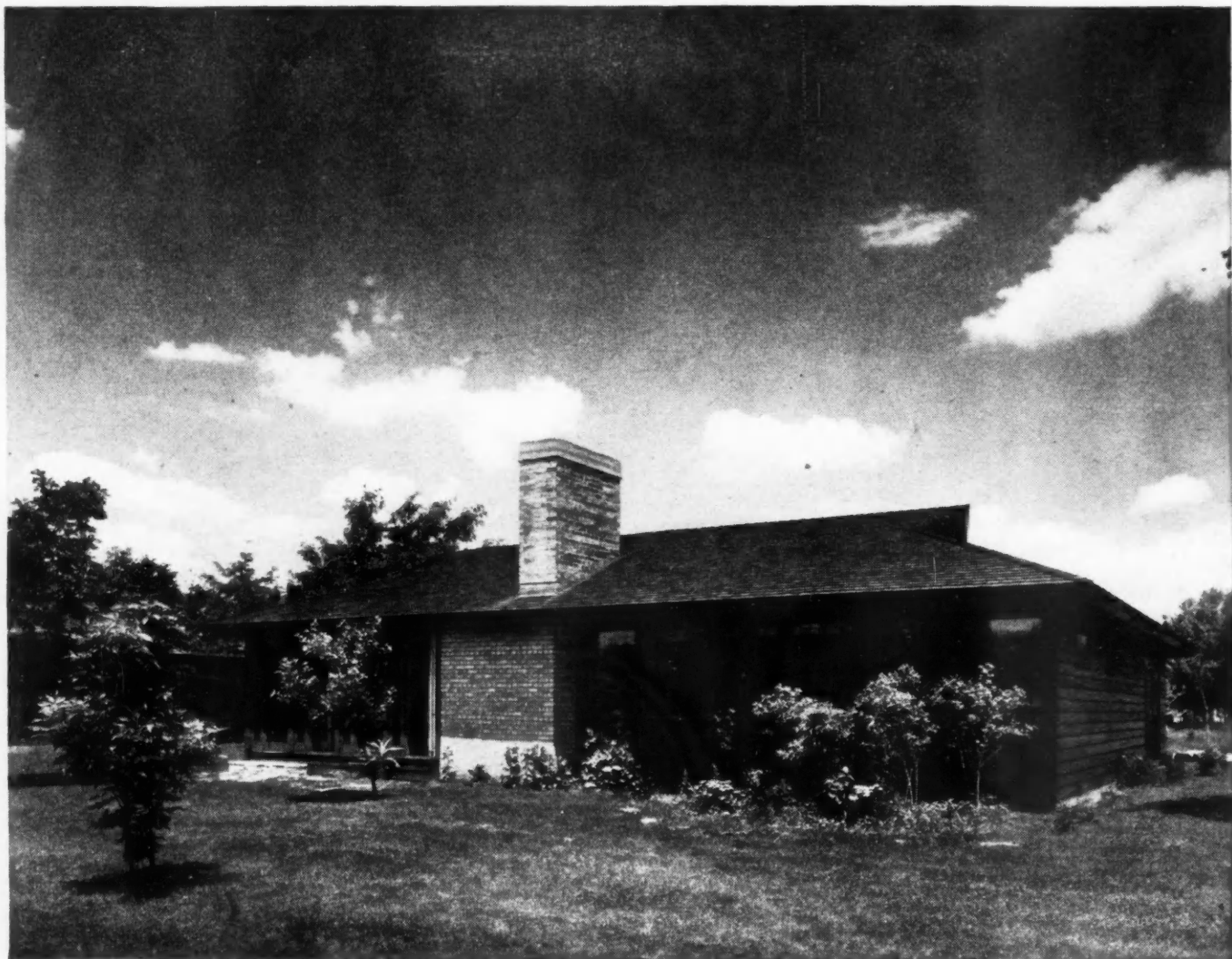


## New Literature

A new 8-page folder on light Industrial Steel Doors, Series 31. Complete with construction and installation details, specifications, sizes and types. Write for your free copy today.

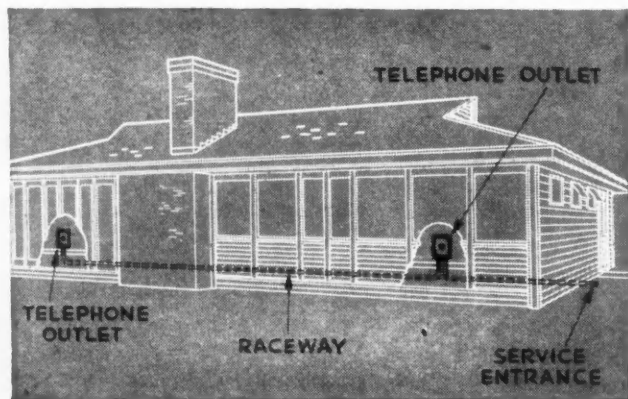


**TRUSCON**  
**STEEL COMPANY**  
YOUNGSTOWN 1, OHIO  
*Subsidiary of Republic Steel Corporation*



*Schweikher and Elting, Architects*

## SMALL HOMES, TOO, NEED RACEWAYS FOR TELEPHONE WIRES



When you pack a lot of livability into a small space, little things mean much in comfort and convenience. A raceway for concealing telephone wires is especially important.

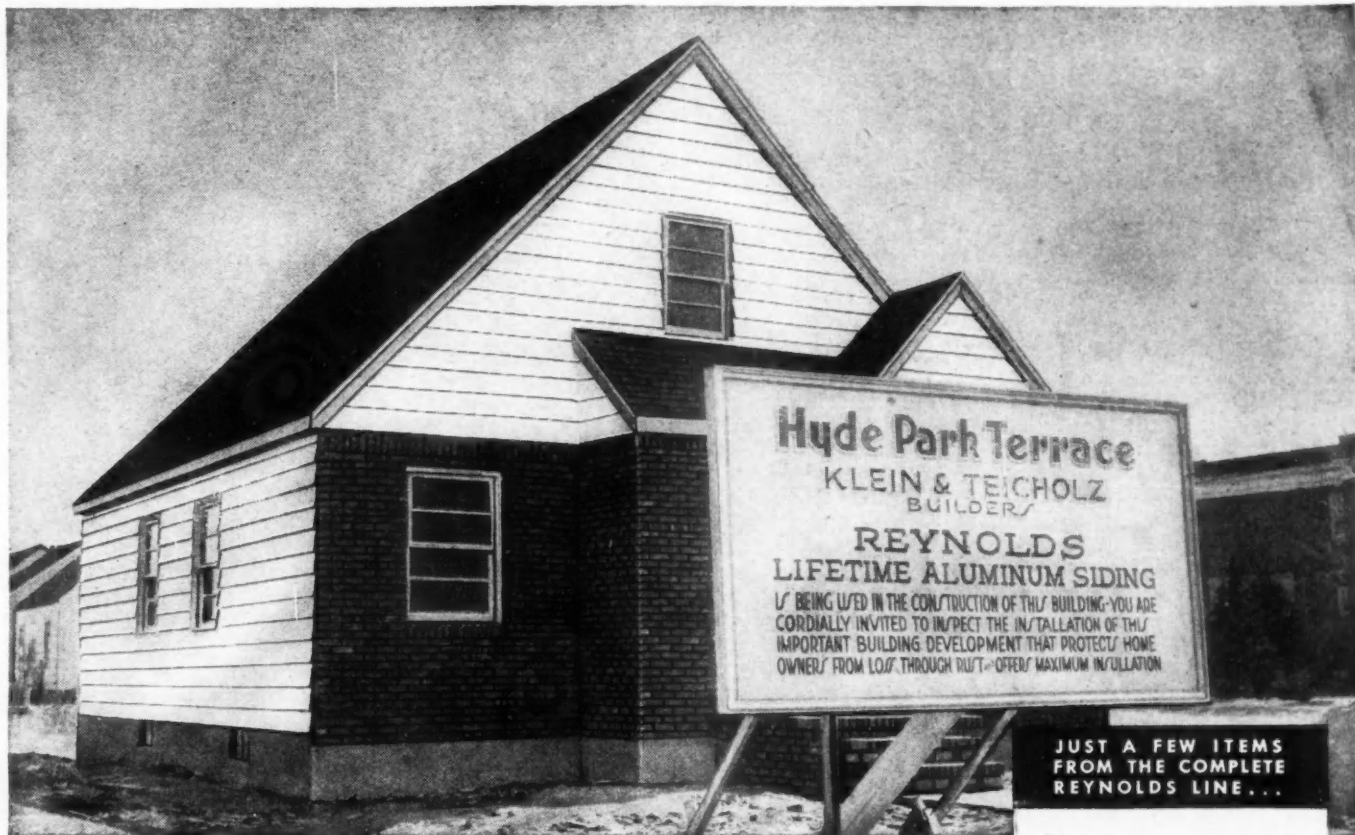
During construction of a one-story home without a basement, for example, the builder can generally assure a good telephone arrangement by (1) providing an entrance raceway for telephone wires; and (2) running a raceway under the floor to convenient telephone outlets. If there is to be an unfinished basement, all that may be needed is the entrance raceway, plus short raceways up within the walls to telephone outlet locations.

Your Bell Telephone Company will be glad to help you plan economical telephone wiring facilities in small homes or large. Call your Telephone Business Office and ask for "Architects and Builders Service."

**BELL TELEPHONE SYSTEM**







## Progressive Builders Side With Aluminum

**I**T's the side to take... for customer satisfaction and builder profit.

The home-owner gets more beauty, more comfort and more lasting value, with this Reynolds Lifetime Aluminum Clapboard Siding. Lines that are straight as a die, never warping, never sagging. A smoother paint job, longer-lasting—requires less paint and less labor. Protection against fire, rust, rot, termites. And best of all, amazing radiant heat insulation! Aluminum throws off the sun-load, keeps the house cooler in summer. And it reflects heat back inside, for more warmth with less fuel in winter.

The builder saves on labor because these aluminum clapboards are light to handle and go up quick... self-aligning, covering all nails. And they help the builder to sell—houses already

built, or a house for an individual client.

Reynolds national advertising is bringing in 2,000 inquiries a week from home builders and home modernizers. That means prospects in your area are being pre-sold now.

Write for A.I.A. File brochures or see Sweets for full details of this aluminum clapboard siding... soundly engineered by Reynolds. Offices in principal cities. Reynolds Metals Company, Building Products Division, Louisville 1, Kentucky.



*Today the base price of aluminum is 30% lower than pre-war!*

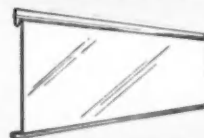
# REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

ALUMINUM SHINGLES-CLAPBOARD SIDING-SHEET ROOFING & SIDING-STUDS-TRUSSES-WINDOWS-GARAGE DOORS-REFLECTIVE INSULATION-UTILITY BLDGS.-HOUSES

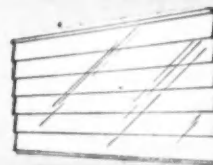
JUST A FEW ITEMS FROM THE COMPLETE REYNOLDS LINE...



Shingles. Interlocking, weather tight, covering all nails. Two sizes: 8 x 14½ and 5½ x 18½.



Clapboard Siding. Fitting together, covering all nails. 8" exposed surface, 12' lengths.



Weatherboard Siding. Crimped like 4-in. clapboard. 8, 10, 12-ft. lengths; 24" coverage.



Casement windows. Under-screen roto-operators. Standard lights, all usual combinations.

# TRENDS

BUILDING MATERIAL — EQUIPMENT — APPLIANCES

## Permanent Residential Starts Up Slightly Over Last Year

DESPITE gloomy forecasts as to the end of the residential building rise in certain areas, data of the Bureau of Labor Statistics as to starts of permanent residential non-farm dwelling units continue to be very optimistic. Starts for the first four months of 1947 totaled 200,600 dwelling units as compared with 205,700 units in 1946, a decrease of 2½ per cent. Based on partial tabulations from all parts of the country it is expected that May starts will show an increase over 1946, offsetting the slight decline of the first four months. Since 1946 starts of 670,900 units compared favorably with the boom building years of the twenties, positive signs of overall recession are not yet apparent. A further indication of a high level of building activity in the immediate future is the volume of FHA applications which reached an all-time high during April, exceeding the record of any previous month.

Although nation-wide residential building starts so far in 1947 are relatively high, individual areas represent wide variations, with areas in the South and West showing gains over 1946, and cities in the northeast and central regions showing a decrease.

### Material Available for Additional Starts

Most building materials are now available in sufficient quantity to support a higher level of starts—unlike last year when the building material situation was the major problem in home building. Overcrowded housing conditions are still critical. The second anniversary of V-J Day will find completions of new permanent dwelling units no more than equal to the normal net increase in new family formation, with little accomplished towards overcoming the backlog.

Since a critical demand still exists, resistance to current home building costs is the only factor which prevents the start of record breaking home building activity. There are indications that the upward movement of costs is coming to a halt, unless building labor makes further demands for wage increases which are not accompanied by increased productivity. The building materials cost index of the Department of Commerce, as of the end of April, was 178.8, compared with 177.5 in March, and 174.8 in February, indicating a leveling off after the in-

crease of 50 points which occurred during the period of April 1946 to February 1947. The principal increased component of the index is still lumber.

High costs temporarily halted the building rise following World War I, but on resumption of activity, costs were still 60 per cent above prewar, and increased even further during the boom years. There are many factors in the general economic situation today that would seem to rule out for the immediate future any return to the prices prevailing in the period before World War II—barring a complete economic collapse, which does not seem likely. The increasing flow of building materials is making possible shorter construction time with consequent cost savings. Increases in operating efficiency on the part of management and productivity on the part of labor can do much to reduce building costs below current high levels. Voluntary price cuts for some building materials are indicated. If these savings through efficiency, greater productivity and lower material prices can be made and passed on to home purchasers, they will lower the price of homes and bring more people back into the housing market.

Although the balance of supply and demand in housing appears remote, the completions recorded each month

bring the end of the critical shortage closer. Estimated completions of all types of dwelling units, permanent, conversions and temporary, including trailers since June 1946 and through December 31, 1947, will add 1,500,000 units to the housing supply. Based on a survey made by the National Housing Agency in conjunction with the Bureau of Census in June 1946, 1,830,000 veterans, 30 per cent of all married veterans, were living doubled up. Assuming that completed housing has been and will be first offered to veterans, there would be 330,000 married veterans at the end of 1947 who have not had an opportunity to move to homes of their own. This does not account for veterans married in the past year, nor for doubled-up civilian families and families who desire and can afford better dwelling units which would increase the present backlog several times.

### New Census Survey On Housing

Illuminating information on present housing conditions will be available shortly when the Bureau of the Census completes the compilation of its April 1947 Survey on Population, Housing, Labor Force and Income. It will be their first postwar survey of this kind and will include the number of families by size and type, the amount of doubling up and migration, the number of dwelling units and whether the units contain plumbing, heating and cooking facilities. The survey will also show the number of individuals and families in various income groups and will be similar to a survey made in 1945.

Sales of retail outlets in the Lumber - Building - Hardware group increased 20 per cent in dollar volume in the first 3 months of 1947 as compared with the similar period in 1946, according to a Department of Commerce report on retail trade. In comparison, retail sales of some soft goods showed a decrease.

### Employment

Total civilian employment at 58,300,000 in May was an all-time high, and 1.5 million above April. Detailed data on construction employment for May are not available, but the March total, according to BLS statistics, was 1,605,000, including 1,094,000 in private construction, 315,000 in public construction and 196,000 in minor building repairs.

"Hear Something Crack?"



—John Knott in Dallas Morning News

# A New Challenge to Building Costs...

## The H & A Woodmaster

### IMMEDIATE DELIVERY

Practically a complete woodworking shop, the new H & A Saw Table, with lightweight, magnesium top, can be carried anywhere on the job and operated from any 110/220 volt, single phase, 60-cycle outlet. Table top—39" wide x 51½" long—is the largest of any Saw Table on the market. A mass production tool for all types of simple, compound, angle and miter crosscutting and ripping, dadoing, angle dadoing, rabbeting, bevel rabbeting, grooving, tenoning and double tenoning can be handled with ease and speed. Unit is safe because saw can be pulled through work, although work can be pushed through saw if desired. Table separates for easy access to arbor and for using dado head. Left side of table can be lowered and accurately set for any angle bevel crosscut, bevel rip and compound cutting operations.

Write for literature, price and name of nearest dealer.



**SPECIFICATIONS:** SAW—10" or 12" diameter with 5/8" shaft. Saw easily adjusted to 3¾". **CAPACITY:** Depth of cuts—8" blade—1¾"; 10" blade—2¾"; 12" blade—3¾". Cross-cut capacity: 18". **WEIGHT:** 405 pounds net (with 1 H.P. Motor). **BEVEL:** Adjustment to 45 degrees.



## Heston and Anderson

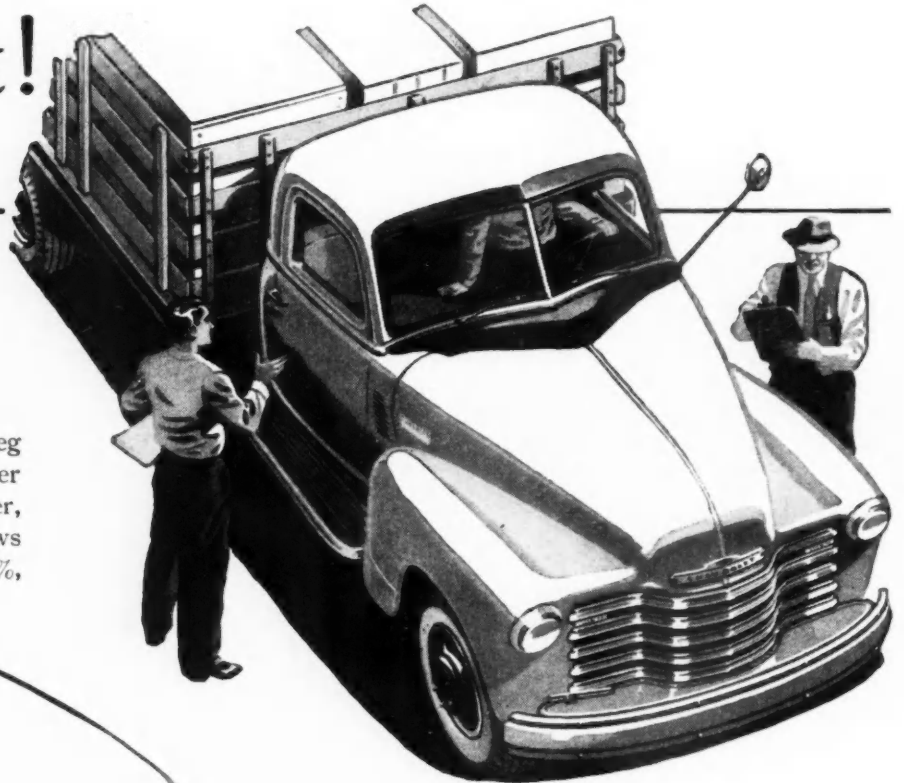
608 W. Kirkwood St. - - - - Fairfield, Iowa

**DIVISION OF ST. PAUL FOUNDRY AND MANUFACTURING COMPANY**

# Never before has there been a *new* line of trucks with so many features to talk about!

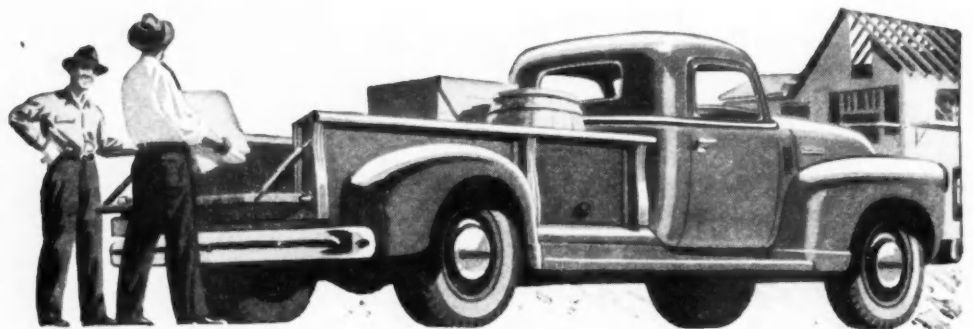
**NEW FOUR-POINT DRIVER COMFORT.** 1. The new cab that "breathes"—a stream of fresh air is drawn in from the outside—heated in cold weather—and used air is forced out.\* 2. Driver's compartment is wider and deeper—more leg room. 3. New, fully adjustable, bigger and more comfortable seats. 4. Wider, deeper windshield and larger windows increase visibility from the cab by 22%, for safer, easier operation.

\*Fresh-air heating and ventilating system optional at extra cost.

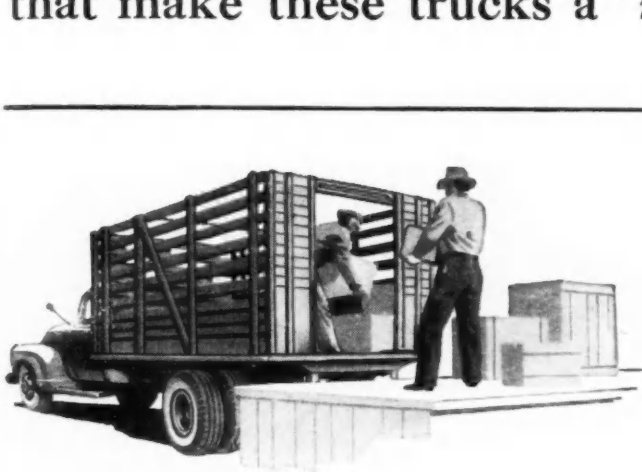


Chevrolet's revolutionary **FLEXI-MOUNTED CAB** is rubber-cushioned against road shocks, torsion and vibration; designed for longer cab life—one of many unique features in today's newest **ADVANCE-DESIGN** trucks. They're new from roof to road, from headlight to tail light, with performance that will give you better and more profitable results on any delivery or hauling job.

World's most economical for their size, Chevrolet's **VALVE-IN-HEAD TRUCK ENGINES** give extra power for extra profits. . . . You'll find **INCREASED LOAD SPACE** in panels and pick-ups to carry the larger loads and shorten the longer jobs—plus more efficient loading in stake and high rack bodies!



Drivers will find new comfort and new safety in the cab that "breathes"—"inhales" fresh air and "exhales" used air—that keeps glass clear and free from fogging . . . plus a host of other new features that make these trucks a "must" for you to see!



Chevrolet's stronger, sturdier **FRAMES** with new super-cargo capacity are designed to carry *greater* loads *greater* distances for a *longer* time. . . . Chevrolet's famous **FULL-FLOATING HYPOID REAR AXLES** are geared for your load on any road.

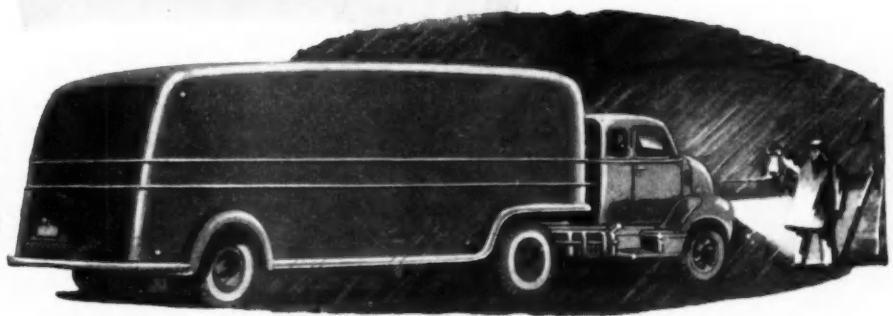


**SEE YOUR CHEVROLET DEALER**

**He can supply Chevrolet trucks, standard or with special equipment, to meet your hauling needs.**

**Longer-than-ever WHEELBASES** for more room in the cab . . . better load distribution!

Chevrolet's **HYDRAULIC TRUCK BRAKES** are quick, safe and dependable! Here is exclusive special linkage, designed to produce brakes at their best!



**NEW ADVANCE-DESIGN**

# CHEVROLET TRUCKS

**FOR TRANSPORTATION UNLIMITED**

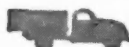
CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN



PICK-UPS



PANELS



STAKES



CAB-OVER-ENGINE



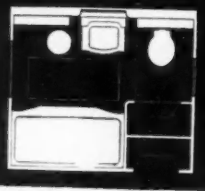
TRACTOR-TRUCKS & CHASSIS FOR SPECIAL EQUIPMENT



**BRIGGS**  
*Beautyware*  
 in national  
 demand—  
 backed by  
 national  
 advertising

At right is reproduction of advertisement appearing in the July issues of AMERICAN HOME and BETTER HOMES & GARDENS. It will take the Briggs Beautyware feature sales story into over five-million homes.

Note emphasis on safety-bottom bathtub—a Briggs exclusive and one of the most important safety features in the industry.



Look for this patented safety-bottom. It's a Briggs exclusive!

**"MILLION DOLLAR" BATH FOR AN \$8000 HOME...**

You can have a bathroom that's high-style . . . even with today's high building costs. A little imagination—mixed with paint, tile and leftover lumber—is the secret! As for fixtures . . . it's no secret at all that *Briggs Beautyware is the best for anybody's money.* Thanks to Briggs' exclusive porcelain-enameled steel construction, even the most modest bath can look "custom-made." And that's not all. For all Briggs' Beautyware fixtures are stainproof—unbelievably easy to clean! See your local plumbing dealer or send for free booklet. It's full of "million dollar" ideas for your Briggs Beautyware bathroom! Briggs Manufacturing Company, 3011-G Miller Avenue, Detroit 11, Mich.

**BRIGGS** *Beautyware*



**PREFERRED...**

to "MUCH LARGER SAW OF DIFFERENT MAKE"

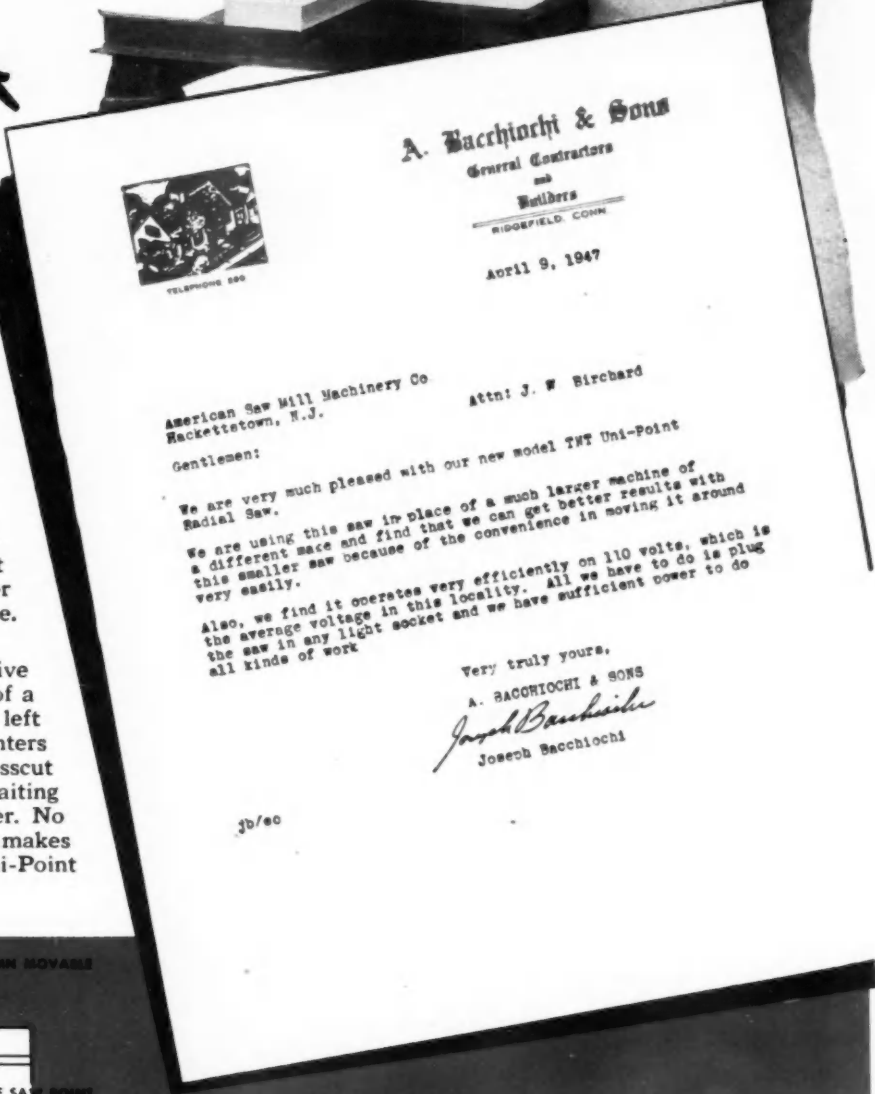


**LIGHTER** This amazing Monarch Uni-Point Portable radial saw gives you every "big saw" feature except bulk. Streamline design and lightweight magnesium make it the most compact, most portable 12-inch radial saw in the world.

Move it anywhere, plug in anywhere. Makes any kind of production cut in wood. Big 3 x 16-inch crosscut and 20½-inch ripping capacity. No other radial saw can even approach a Monarch for output or accuracy. And there's no hazardous, jutting arm on a Monarch. Its safer You can see all the work all the time.

**COSTS 1/5 LESS** More good news: widening popularity and increased production of the Monarch Uni-Point now permit a price reduction of nearly 20%. New lower price includes saw blade and carrying frame.

**CUTS SAWING TIME 25%** Exclusive Uni-Point principle enables *entire column* of a Monarch TNT to tilt vertically and to move left or right through a horizontal arc. Saw enters wood at same point always, regardless of crosscut angle. No trial starts—saves material. No waiting for blade to stop. No repositioning of lumber. No blade adjustments. And *no other company* makes a radial saw with this time-saving Uni-Point feature. Send today for full details.



**A. Bacchiocchi & Sons**  
General Contractors  
and  
Builders  
RIDGEFIELD, CONN.

April 9, 1947

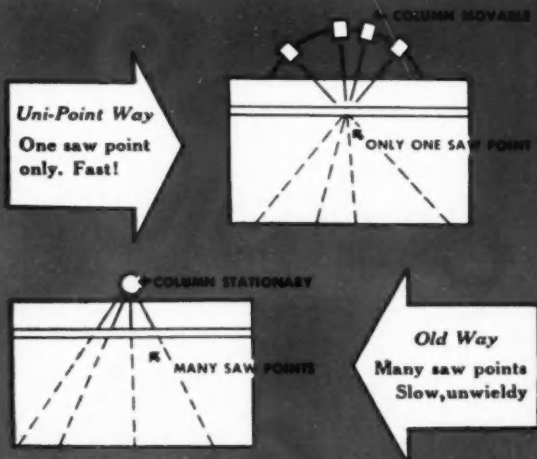
American Saw Mill Machinery Co.  
Hackettstown, N.J.

Attn: J. W. Birchard

Gentlemen:  
We are very much pleased with our new model TNT Uni-Point Radial Saw.  
We are using this saw in place of a much larger machine of a different make and find that we can get better results with this smaller saw because of the convenience in moving it around very easily.  
Also, we find it operates very efficiently on 110 volts, which is the average voltage in this locality. All we have to do is plug the saw in any light socket and we have sufficient power to do all kinds of work.

Very truly yours,  
A. BACCHIOCCI & SONS  
*Joseph Bacchiocchi*  
Joseph Bacchiocchi

jb/ec



**American Saw Mill Machinery Co.**

Manufacturers of Saw Mill and Woodworking Machines  
50 MAIN STREET • HACKETTSTOWN, NEW JERSEY  
Factory Branches: CHICAGO, SAN FRANCISCO, BIRMINGHAM

*Circulation Over*

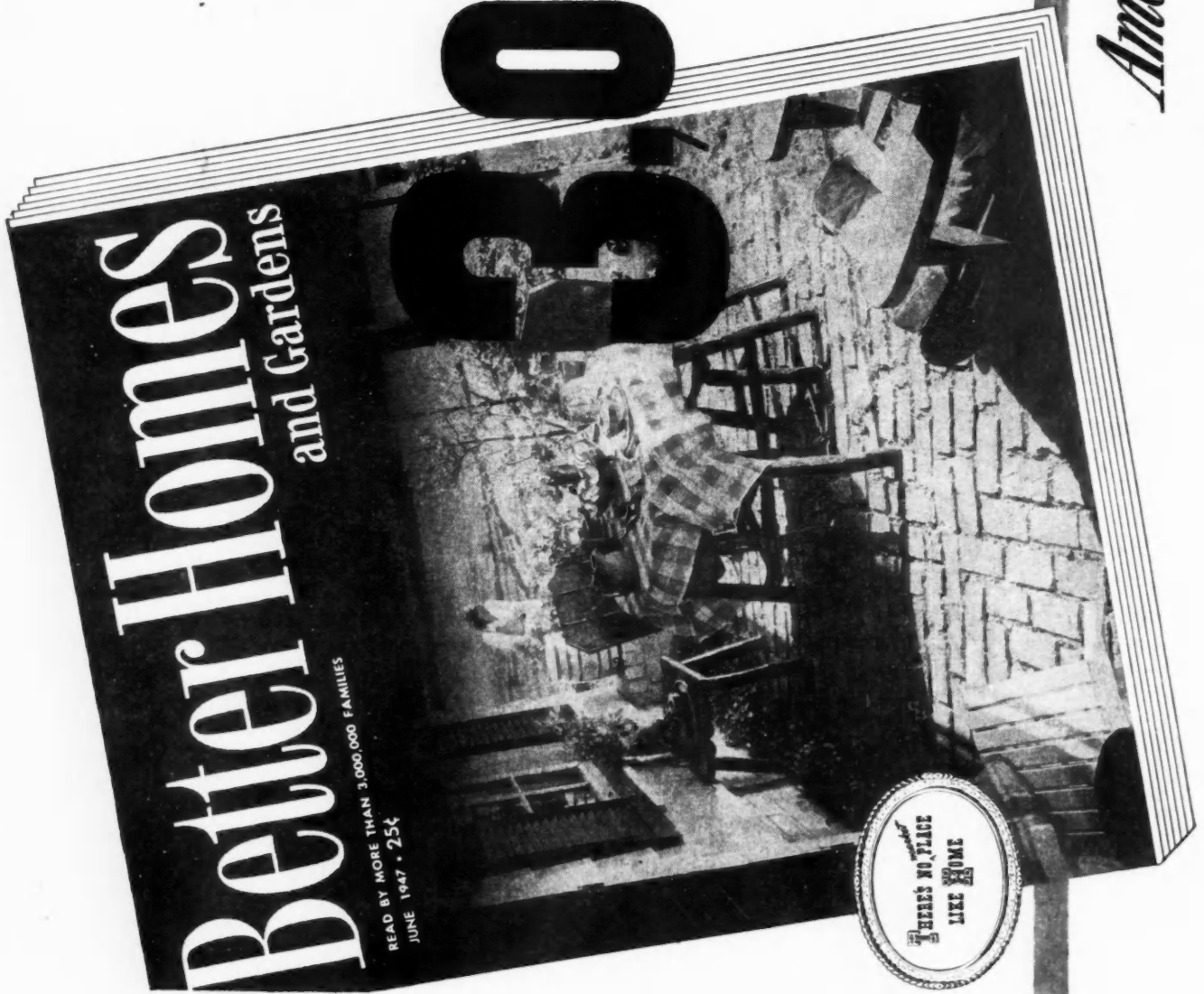
**3,000,000**



Yes, 3,000,000. Three million. Husbands and wives — heads of families — 3,000,000 of them — with good incomes — pore over Better Homes & Gardens for the help it gives them in living better in a better home. (Cover to cover, ads and all.) It's 100% service that screens out casual readers, and gives you this active homemaking market that spends billions every year.

These 3,000,000 families are the heart of the building market — they're the families who not only build their own homes as soon as they can, but who keep on modernizing and changing and improving them. No maker of building material or equipment can afford to overlook this particular 3,000,000.

*America's First Service Magazine*







# BIG PROMOTION behind Double-Coursing

To advertise the merits of Cedar Shingles and processed Cedar Shakes for double-coursed sidewalls, color pages are now appearing in publications of interest to home builders, farmers, contractors and architects. Every advertisement will direct consumers to "See Your Lumber Dealer" for particulars concerning Cedar Shingles and Shakes.

Take advantage of this big promotion at a time when quality wood sidewalls are in great demand.

Send today for a free architectural blueprint of double-coursing application. Address a postcard to

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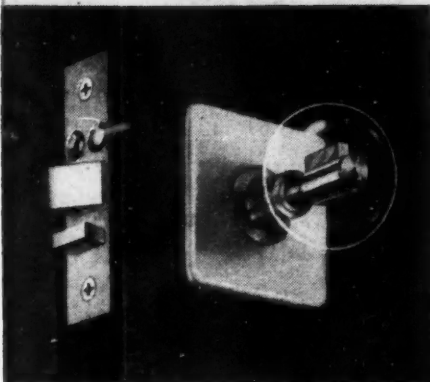


**SPECIFY CEDAR SHAKES AND CERTIGRADE CEDAR SHINGLES**



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MORE  
SECURITY  
For Entrance Doors!



Illustrated with transparent knob to show shear pin

● The Sargent Integrallock\* is a new, safer type of lock. Not only are all vital parts made of strong pressure-formed metals, but it has an exclusive safety feature which prevents the knob from being forced.

● A shear pin has been engineered into the outside knob. Under extreme torsion this pin gives way. Then the knob—freed from the mechanism—spins harmlessly. Yet the regular key to the lock will continue to retract the bolts in the normal way. The broken pin, like an electric fuse, is quickly and cheaply replaced.

● Another Integrallock feature important to you is the simplicity of installation. Even a poorer type of workman cannot fail to install it properly. Installation is faster, too, which brings the installed cost of an Integrallock down surprisingly low. In security, in appearance, in installation economies, Sargent Integrallock is the ideal lock for residential entrance doors.

● For the name of your Sargent distributor and further information about the Integrallock, write to Sargent & Company, East Street, New Haven, Conn.

Quick Delivery from  
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\*Trade Mark



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News, Views  
and Comments

## On and Off the Record

**FPHA ACCOUNTING**—In recent audit by a private firm of accountants the accounting of FPHA was found to be "inadequate, inaccurate and otherwise deficient for the fiscal year 1945 and prior years."

**CORRECTION COSTLY**—FPHA is under the supervision of NHA where attention has been so much centered on housing policy and budgetary matters that little time remained for internal management of FPHA. Result is that FPHA accounts are in such unintelligible shape that auditors doubt that a satisfactory audit could be made. They recommend that if the job could be done it would take so long and cost so much that results would not justify expense. No dishonesty suggested. Just gross incompetence. And that is what some Congressmen and some segments of the public urge as a cure for real and fancied housing problems.

**ALL BALLED UP**—Careful reading of Report on the Survey of the Accounting System of the Federal Public Housing Authority, dated April 30, 1947, provides a ready answer to some of the peculiar and inexplicable antics of FPHA. The records make no proper accounting of anything. Cash, inventories and appropriations appear to be so balled up that even skilled accountants hesitate to tackle the mess.

**PRIVATE BUILDERS**—If private builders attempted to operate with accounting systems that told them nothing, the housing shortages of a year ago would now be worse than ever, and all builders would have gone broke long ago.

**THE JOKER**—There always is one. This time it is 1944 and 1945 management of NHA presuming to tell Congress, the public and the builders what housing should cost. Further investigation probably would reveal that the phony statistics given to Congress by NHA were arrived at in about the same way as the cost data, now revealed to be a jumbled mess of inadequacy and inaccuracy.

**SENATOR TOBEY**—He made public report titled "Report from the Committee on Banking and Currency to Accompany S. 866." Use of the preposition "from" instead of "of" and lack of sig-

natures on the report made it appear that the report was without official status, but intended to be accepted as a committee report. Rumored that the report did not make Senator Taft happy.

**BUILDING STATISTICS**—Bureau of Labor statistics, which always are reliable, show that in February 59 per cent of the starts on new dwelling units were in eight states.

**CALIFORNIA LEADS**—Twenty-one per cent of the February starts were in California. Texas was next with 13 per cent. Others in order were Florida, 7; Michigan, 5; New York, 4; Ohio, 4; Illinois, 3; Pennsylvania, 2.

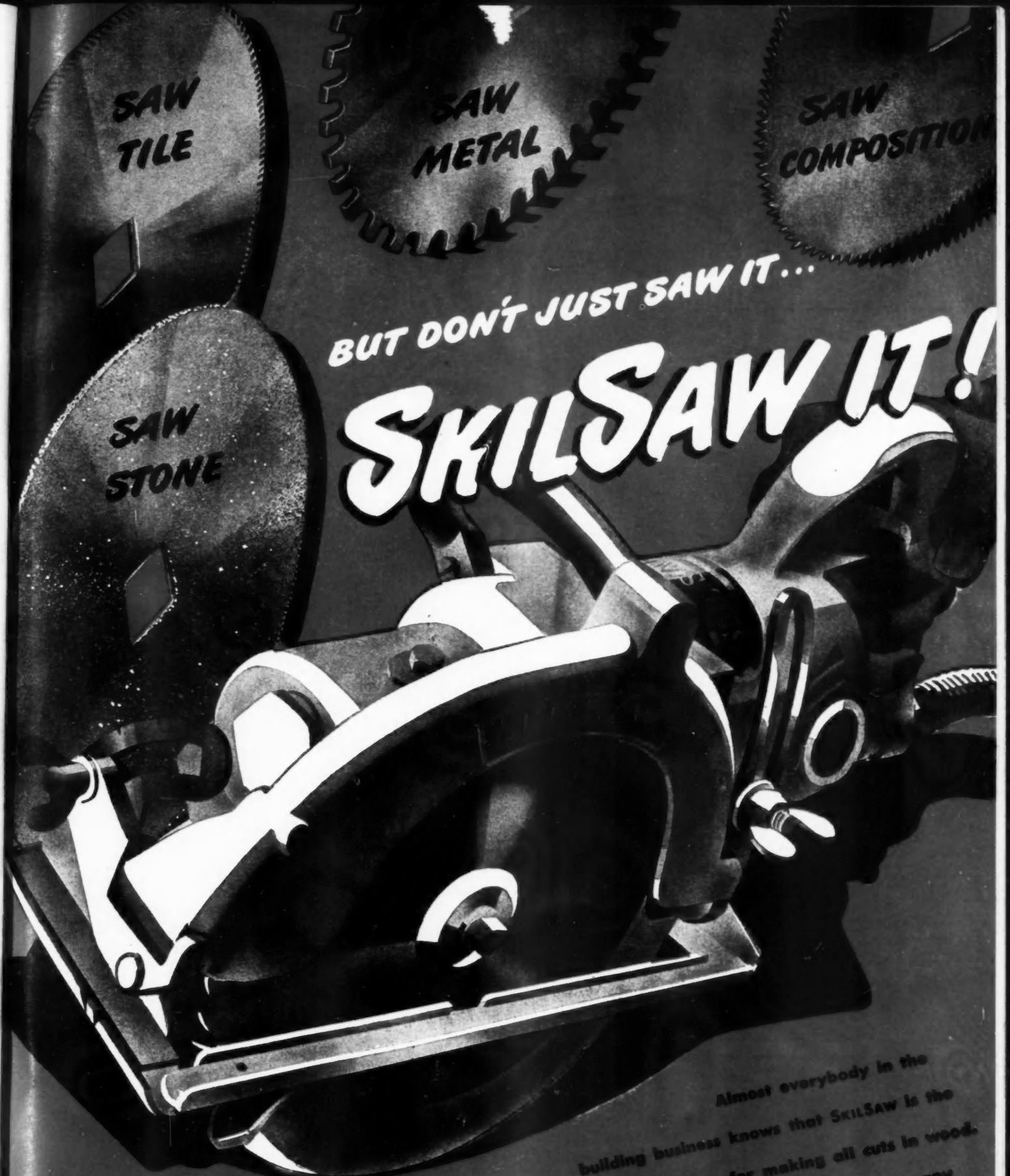
**FOLLOWS PATTERN**—Foregoing figures conform generally to the pattern in 1941 and 1946, with major step-ups in California and Texas.

**WEATHER FACTOR**—Late spring, and excessive rainfall during May in the north and east probably will further accentuate the leads of the west and south. Middle west builders who had managed to make starts since January 1 were forced to halt operations because of seas of mud and water.

**1946 STARTS**—Despite bad weather conditions in much of heavy building volume country, April starts in non-farm areas were only 3,100 below the starts in April 1946.

**COMPLETIONS**—Nearly three times as many completions were scored during the first three months of 1947 as in the same period in 1946. Score, 1947—176,000 to 1946—61,600. Improved material conditions this year and summer weather in the north and east still can bring 1947 starts to one million or more, and completions to 800,000 or more.

**RESTRICTIONS**—Effective June 1, Housing Expediter Crendon announced the end of housing permits. As of that date anyone could build a house for himself up to 2,000 square feet, no limit on bathrooms. Small job allowances were increased from \$400 to \$1,000 for dwellings, and from \$1,000 to \$2,500 for commercial and small industrial structures. Rent ceilings and sales prices established under the HHI priority system were retained.



SAW  
TILE

SAW  
METAL

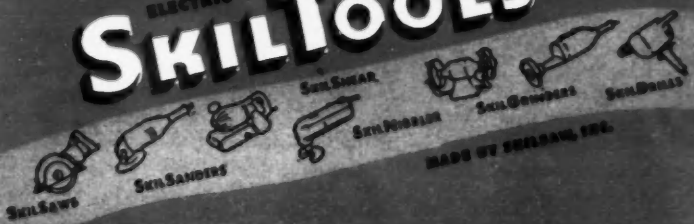
SAW  
COMPOSITION

SAW  
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Almost everybody in the building business knows that SKILSAW is the number one choice for making all cuts in wood. But do you know that SKILSAW cuts many other materials, too... even wired glass? See your distributor today about a demonstration.

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# HERE'S *WHY* THE GAS REFRIGERATOR STAYS SILENT... LASTS LONGER



**LIQUIDS COOL ON EVAPORATION**

When you pour alcohol on your skin and blow on it, it will feel cool. That's because liquids draw heat from the surrounding area as they evaporate. You could test this for yourself with a thermometer. Both gas and electric refrigerators operate on this principle . . . but there's a big difference in application. Study the following illustrations and you'll see why Gas Refrigeration's method is superior.

**SUPPOSE YOU MADE A SIMPLE REFRIGERATOR**



All you would have to do would be to pour continuous streams of ammonia or any other refrigerating liquid and air through a bent metal tube. As the ammonia evaporates on the inside, the outside of the tube cools . . . which causes refrigeration. The evaporated ammonia is then passed off in the form of vapor gas. However, in practical refrigeration, allowing this vapor gas to escape would be wasteful. It must be recovered and used again.

**W**HETHER you're building apartments or private homes, it will pay you to study the simple explanation shown above before placing any orders for new refrigerators.

The chart shows why Servel's method of operation is simpler, different . . . and better. There is not a single moving part in the freezing system. That means there's nothing to cause mechanical humming or clicking. The entire freezing job is done by a tiny, silent gas flame.

That explains why there's an increasing trend toward the Servel Gas Refrigerator. Today tenants and owners expect new household refrigerators to operate silently. Many architects and builders realize that it's good business to install

Servel Gas Refrigerators NOW . . . for once the housing shortage is eased, freedom-from-noise will be an important factor in renting apartments and selling homes.

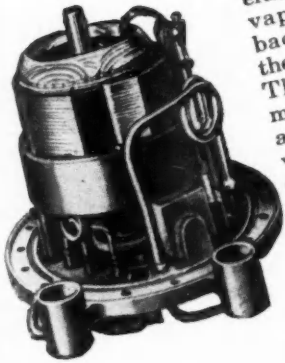
And—equally important—Servel *lasts longer*. Since the freezing system has no moving parts, there's nothing to wear or break down. Servel's repair and replacement bills are remarkably low. Operating costs remain low too. After years of dependable, trouble-free service, the depreciation of the Servel Gas Refrigerator—compared with a mechanical refrigerator—is much less. For complete information, consult Sweet's Catalog . . . or write today to Servel, Inc., Evansville 20, Indiana.

STAYS SILENT  
LASTS LONGER

Servel The GAS

**THERE ARE TWO WAYS OF CHANGING VAPOR BACK TO LIQUID FOR RE-USE**

In an electric refrigerator, the ammonia vapor is compressed back into liquid by the use of machinery. This machinery, or moving parts, includes a motor, pumps, valves, pistons, and compressors.



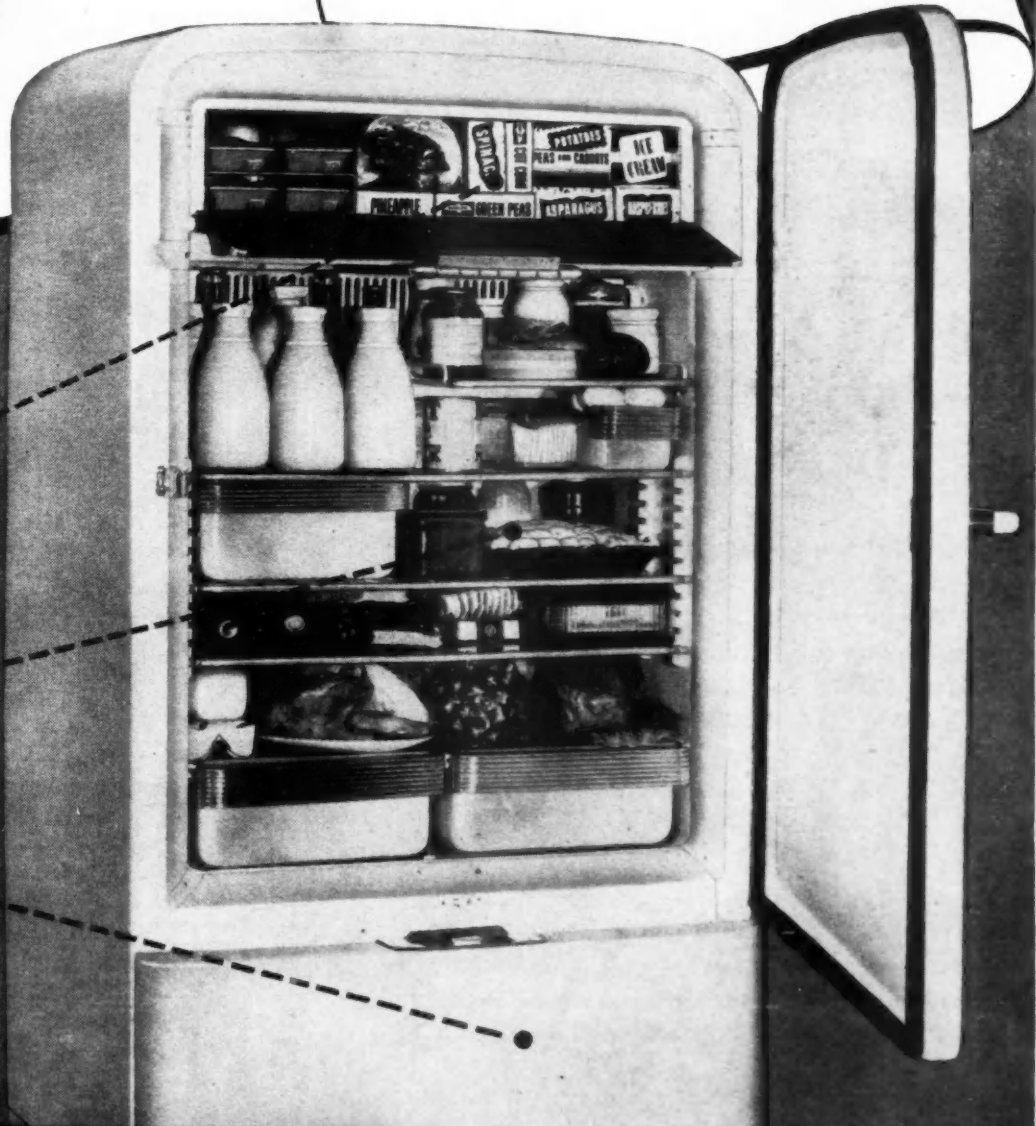
But in the Gas Refrigerator, the vapor is changed back to a liquid by first being passed through water. The water absorbs the ammonia. The mixture is then boiled by a tiny gas flame. The ammonia is driven off in the form of hot ammonia vapor. Cooled by passing through pipes, it condenses again into a liquid. *Not a single moving part is needed.*



Big Frozen Food Compartment

Moist Cold Dry Cold

No Noise No Wear



# Refrigerator



## Don't you hate to see a home owner "behind the 8-ball"?

● Bituminous Coal has no equal when it comes to providing a home with uniform, dependable, low-cost heat. Every architect and builder knows that!

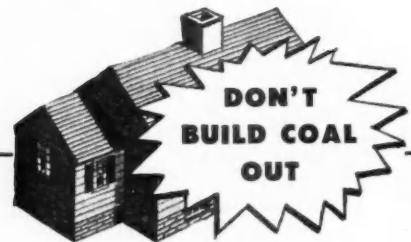
So even when a client of yours *insists* on using some other fuel for his new home, be sure you give him the chance to change his mind in the future—and turn to coal!

Otherwise, he'll be "behind the 8-ball" when cost differentials, stoker developments, and local coal services convince him he should get the benefits of coal heat.

Simply make sure his house plans include: (1) A chimney with sufficient flue capacity to burn coal efficiently; (2) Sufficient space adjacent to the heating unit for eventual coal storage and stoker installation.

The cost of such sensible precautions is negligible. And they constitute valuable insurance on the future value of a house.

Coal supplies uniform, *steady* warmth throughout every portion of each room. For there's always a fire in the furnace—no "pop on and pop off" periods that permit accumulated heat to rise to the ceilings and leave floor areas dangerously cold. That, plus its low cost, is why more than 4 out of every 7 homes in the United States now heat with coal!



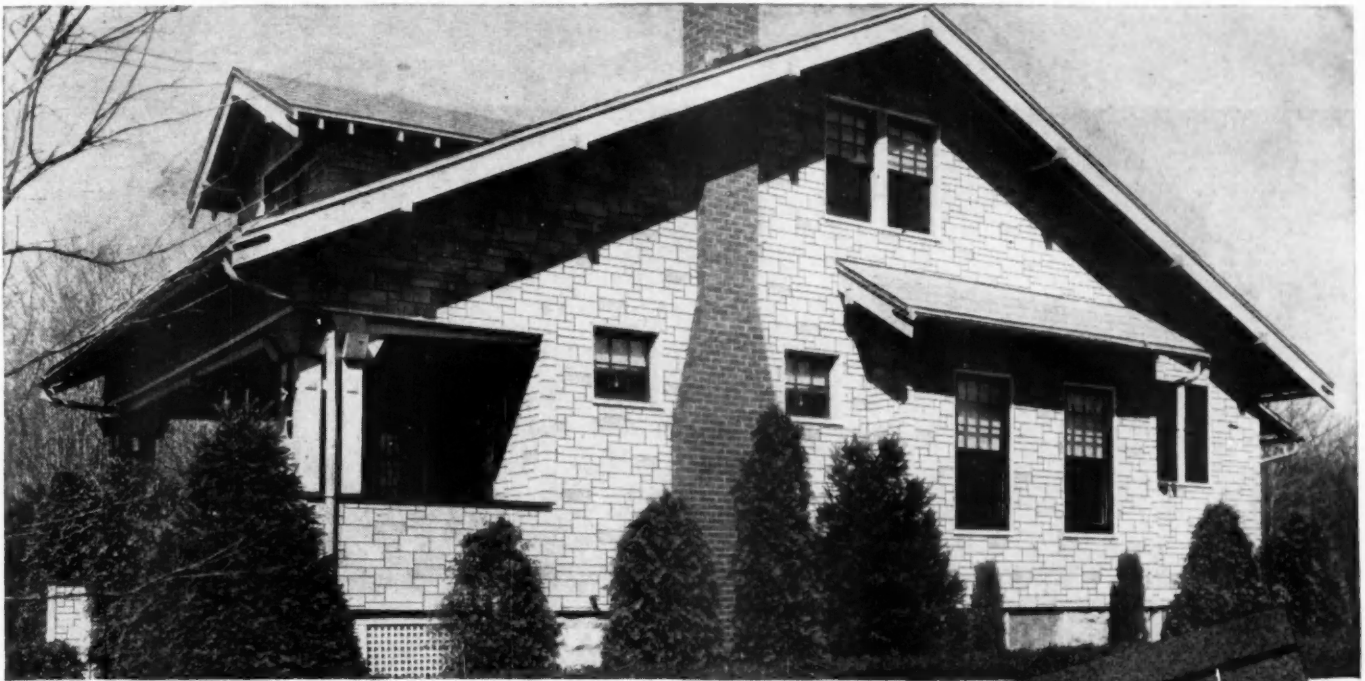
As you undoubtedly know, the modern research facilities of the Bituminous Coal industry are hard at work not only to make coal a still better fuel, but also to devise new, low-cost *automatic* equipment that will make coal-heating even cleaner, more comfortable, more convenient, and more economical. This makes it all the more important that every new home built today be planned to permit the eventual burning of coal—no matter what fuel may initially be selected.

### BITUMINOUS COAL

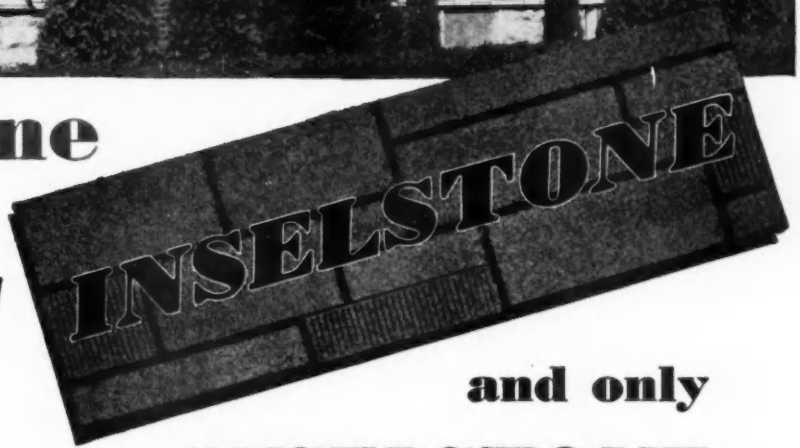
BITUMINOUS COAL INSTITUTE  
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BETTER AND BETTER THINGS ARE COMING FROM COAL!



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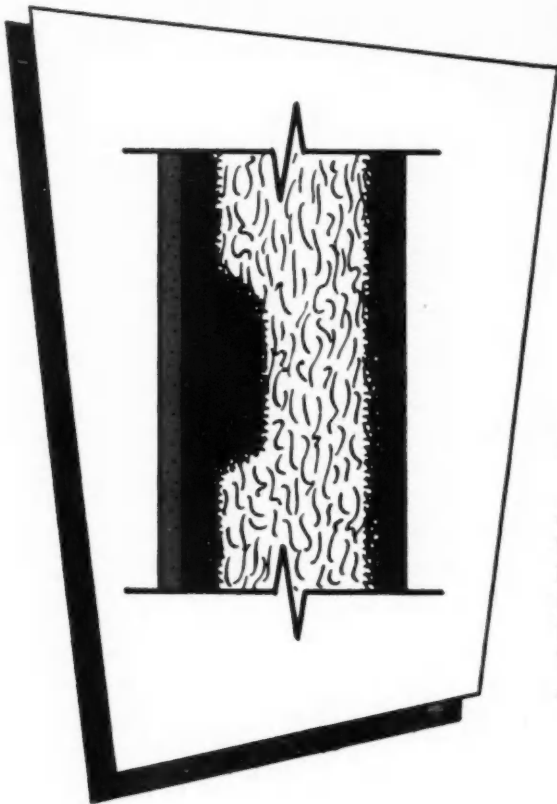


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ANCHORED FACE . . . an exclusive, built-in feature that anchors the stone face permanently to the insulating core. Yes, 32 sockets in each panel of Inselstone—cut uniformly into the weather-sealed board and scientifically filled with mastic to form a permanent bond. That's Anchored Face—construction that won't peel off. That's why leading dealers everywhere insist upon *INSELSTONE* and *INSELBRIC*.

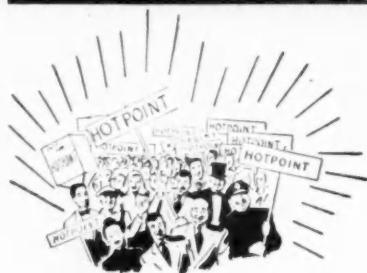
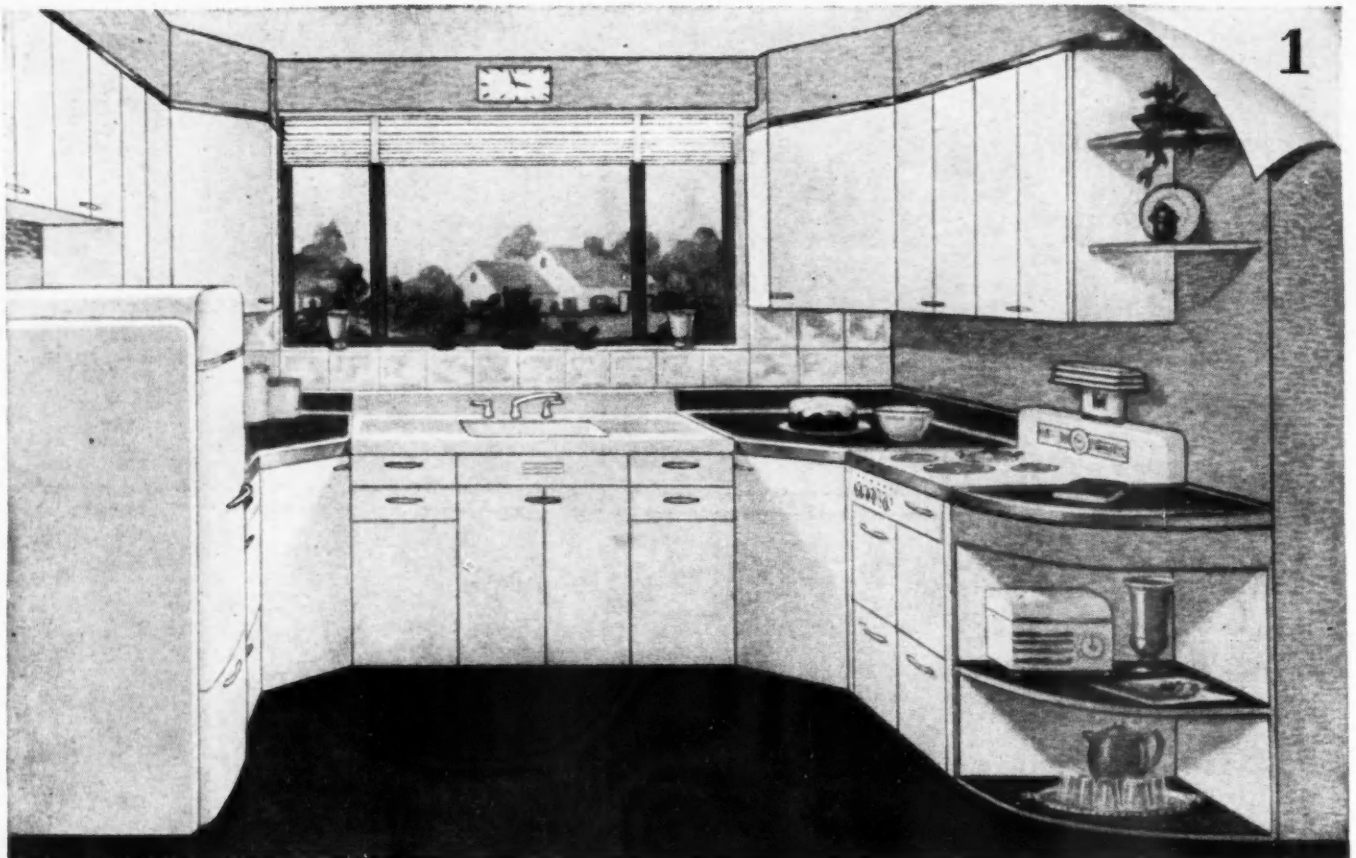
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Makers of Inselbric and Inselstone  
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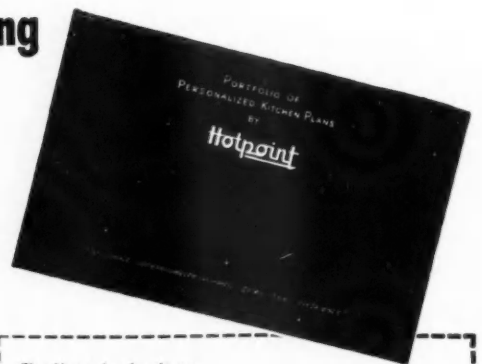


# America picks its FAVORITE KITCHENS

No. 1 in an important Hotpoint series

...based on actual count of inquiries about  
Hotpoint's famous Kitchen Planning Advertising

IT isn't just guesswork when Hotpoint calls the "Blue Bird" kitchen one of America's favorites. This selection is based on thousands of inquiries received by the Hotpoint Institute for this cheerful, convenient kitchen that has been nationally advertised. The Hotpoint Kitchen Planning Service has been swamped with requests for kitchen plans from your potential customers who want to build or remodel. This powerful swing to electric kitchens indicates that, whatever the income bracket, the dream-come-true of Mrs. America is a Hotpoint kitchen with its time and labor saving electric servants. So your market is wide open . . . plan to capitalize on it NOW. To help you do this, Hotpoint has prepared a PORTFOLIO OF PERSONALIZED KITCHEN PLANS. Send the coupon for this handy booklet. It will point the way to an amazingly easy method of enhancing your reputation for building homes today with America's favorite kitchens of tomorrow!



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**2/3  
REDUCTION  
IN PREFAB CUTTING COSTS**

Three Walker-Turner 3 h.p. Radial Saws are set on channel beams on a 40 foot conveyor table which reaches to the railroad siding. The saws are set by control handles placed at both ends of the table.

## PIONEERING WITH PROFIT

A pioneer in the design and manufacture of prefabricated housing, Mr. E. A. Chandler, President of Well Built Manufacturing Co., writes:

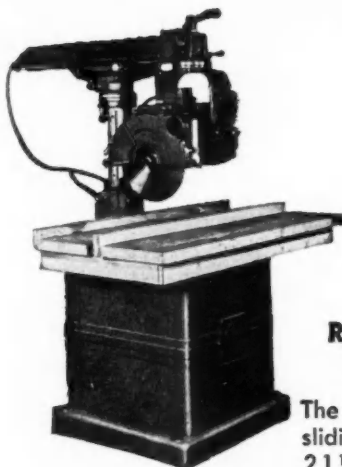
"To meet the problem of rising costs and the shortage of building materials we have designed a special setup with Walker-Turner Radial Saws which has resulted in the greatest production volume in our history.

"With this setup, cutting and handling costs are reduced by 2/3, and waste is cut from 10% to 1/10 of 1%.

"The Walker-Turner Radial Saws were chosen for this setup because they combine versatility, safety and ease of operation—and afford a clear view of the work at any angle of operation.

"In our experience we find that a Walker-Turner Radial Saw pays for itself in less than four months. In eight years we have had 16 Walker-Turner Radial Saws—repairs amounted to less than \$50.00.

E. A. Chandler, President  
Well Built Manufacturing Co.



**Radial Saw  
RA1108**

The self-cleaning sliding ram travels 21½" and is equipped with eight ball bearings. The saw can be set for ripping, mitering, dadoing, compound mitering, routing, shaping, tenoning and any angle of beveling.

Cuts material up to 4¾" deep—Rips material 38" wide  
\*Price with 2 or 3 h.p. motor, less base—\$430.25

**TWENTY-FIFTH YEAR  
1922 1947**

\*F.O.B. Plainfield, slightly higher west of the Rockies and in Canada  
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# MACHINE TOOLS

DRILL PRESSES—HAND AND POWER FEED • RADIAL DRILLS • RADIAL SAWS  
METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES  
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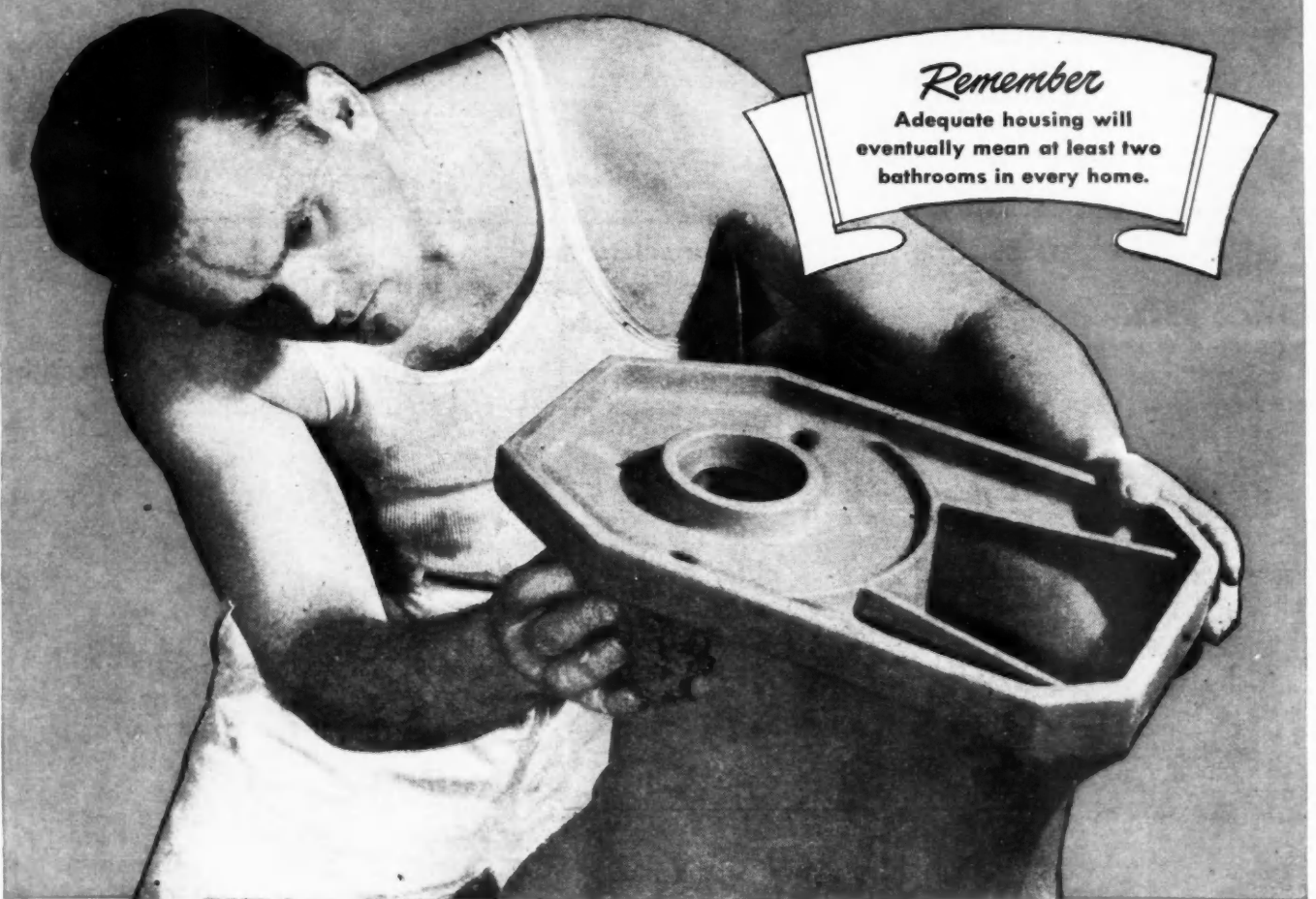
# ELJER KNOW-HOW

*means Better design, Better quality*

Since 1904, Eljer has introduced many design and manufacturing principles now accepted as an industry criterion. Today, the "know-how" of Eljer design engineers and workmen provides assurance that the Eljer fixtures of tomorrow will have constantly improved designs . . . that they will always be of top quality.

To architects, builders and master plumb-

ers, Eljer pledges the certainty that the complete line of Eljer fixtures . . . of real vitreous china or enameled cast iron . . . will possess all the design, beauty and durability features it is possible for experienced workmen to produce, with the most modern manufacturing facilities available in the plumbing industry. See your Eljer distributor or write to: *Eljer Co., Box 192, Ford City, Pa.*



## *Remember*

Adequate housing will eventually mean at least two bathrooms in every home.

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MAKERS OF FINE PLUMBING FIXTURES SINCE 1904



# MONTHLY REVIEW

NEWS OF THE NATIONAL ASSOCIATION OF HOME BUILDERS AND AFFILIATED ASSOCIATIONS

## Los Angeles Builders Active

To the Home Builders Institute of Los Angeles goes the distinction of being the builders' organization at the helm of the nation's greatest local concentration of home building activity. Los Angeles County currently has close to one-fifth of all home building starts in the country.

President of the Institute is Lawrence B. Gibbs, who has been building homes in Los Angeles for 24 years. Now, as president of the Midwick Development Co., he



LAWRENCE B. GIBBS

is developing a 200-acre tract in Monterey Park, converting a former world-famous polo field into homes for veterans. A native of Cambridge, Mass., Mr. Gibbs is a graduate of Rensselaer Polytechnic Institute, and a veteran of World War I.

Secretary-Manager Clifford L. Rawson, a World War II veteran with 3½ years service in the Army Air Force, was the



CLIFFORD L. RAWSON

prewar secretary of the Los Angeles Junior Chamber of Commerce. He joined HBI in February 1946, guided the work of incorporation, and worked out and applied modern techniques of promotion and services. He attended USC, and has resided in Los Angeles for 30 years.

## NAHB Directors Hear Housing Expediter Creedon Announce Lifting of Controls

When the directors and members of the standing committees of the National Association of Home Builders gathered at the Statler Hotel in Washington, May 24-29, for their regular spring meeting, they took up in detail the present status of home construction throughout the country and mapped plans for a steadily increasing volume of new housing, both rental and sale, during the coming months.

The sessions, presided over by President Edward R. Carr, heard officials of both industry and government pledge closer support in the home builders' drive for maximum volume of housing this year. Spokesmen for producers and distributors of building materials presented an encouraging

that all other materials appeared to be merely leveling off.

The highlight of the meeting was Housing Expediter Frank R. Creedon's announcement of relaxations and his vigorous demand upon the construction industry for continued volume production. As if in answer to the home builders' repeated requests for relief from controls, Mr. Creedon informed the directors that he was almost immediately relaxing all but a minimum number of building controls.

In granting the relaxations the Housing Expediter made it clear that he expected an increasingly large volume of residential construction. He said: "With present availability of materials and the way non-



NAHB DIRECTORS shown in executive session during May meeting in Washington.

picture of enlarged production, improved efficiency and quality, and a rapidly stabilizing cost.

Top government housing officials pledged more realistic administration of current regulations and laws and announced relaxations which the home builders had been advocating for many months.

From nearly every part of the country, directors reported recent improvements in the supply of building materials and a strong demand for houses. Only two large cities reported a substantial number of completed homes unsold. In each instance this appeared to be the result of deliberate propaganda designed to discourage veterans' buying through unwarranted statements regarding the trend of construction costs. Actually, the directors reported, economies through more rapid construction in every area appeared to be more than offset by increased wage demands by labor and a continued low productivity of labor. They also indicated that the cost of framing lumber and a few other items was down, but

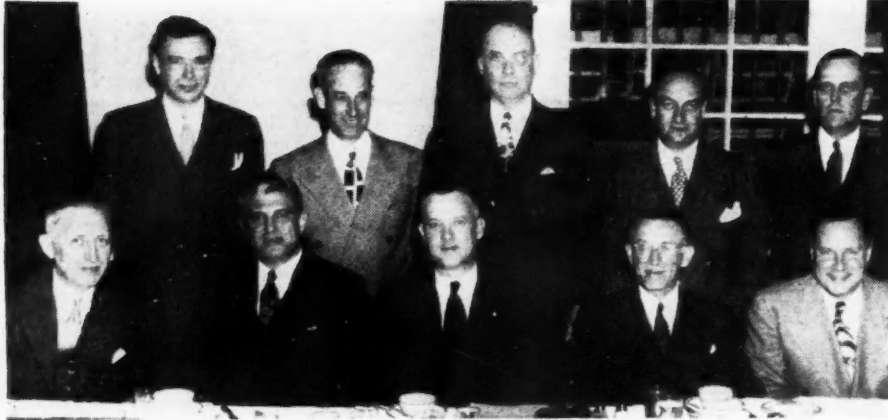
housing construction is being blocked out of the picture, you should take advantage of the situation and greatly increase the number of starts." He also stated that 200,000 permanent privately-financed units had been started in the first four months this year as against 205,000 in the same period last year. As of May 1, he said, an additional 313,000 permanent units were under construction and he was confident at least 200,000 more would be started by August 15, which with conversions, trailers and temporaries should push completions for the year to the one million mark.

While the directors were in session, President Truman presented to the Congress Reorganization Plan No. 3 creating a permanent National Housing Agency. Although a similar plan was soundly defeated last year, it seemed to the directors that the President apparently hopes the Eightieth Congress will be too busy during the remainder of this session to reject it in both Houses.

(Continued to page 36)

**Plan Now to Attend or Exhibit at the NAHB Convention February 22-26, 1948**

## Westchester Home Builders Mark Milestone



**OFFICERS and guests of the Westchester Builders are pictured at their First Annual Banquet. Seated (l. to r.) are Sen. McGovern, Mr. Michelson, Toastmaster James E. Cook, President Irving A. Lipsig, Mr. Church. Standing are Messrs. Fleagle, Porter, Clark, Spiegel, and Henry M. Grant, immediate past president.**

The Home Builders Association of Westchester, Inc., commemorated its first anniversary with its first annual banquet early in May. Set in the dignified atmosphere of the famed Regent Room, Gramatan Hotel, Bronxville, N. Y., some 150 members, friends and guests heard Arnold Michelson, vice president of the Minneapolis-Honeywell Regulator Company, urge the stimulation of housing construction through nation-wide cooperation and support "just as in the war effort." He asked the home

builders to try to return to the normal production of homes as rapidly as possible and despite hampering federal restrictions.

Guests included J. Raymond McGovern, New York state senator; S. W. Church, mayor of the City of New Rochelle, N. Y.; Edward Fleagle, president of the Westchester Chapter, A.I.A.; Raymond D. Porter, president of the Westchester County Realty Board; Silas S. Clark, mayor of White Plains, N. Y.; E. M. Spiegel, president of Home Builders Assn. of Northern N.J.

## NAHB Directors Hear Creedon

(Continued from page 35)

The proposal calls for a permanent "Housing and Home Finance Agency" to replace the NHA. There would be a single administrator, three primary constituent agencies—a Home Loan Bank Board, a Federal Housing Administration, and a



**GEORGE NIXON questions Creedon.**

Public Housing Administration—and a "National Housing Council."

In a statement of policy the NAHB declared it believed a coordination of government agencies is essential, but it is totally opposed to the specific "supervisory powers" which both reorganization plans would give to the Administrator. In voting unanimous opposition to Plan, No. 3, the directors listed the following objections:

1. Because there is no longer need for a housing czar now that the war is over.
2. Because the plan is contrary to the economy program of the 80th Congress.
3. Because the additional taxation involved, both direct and indirect, would increase the cost of housing.



**PRESIDENT Carr presides at NAHB meeting.**

4. Because the construction industry requires less federal intervention, not more.

Another cheering expression was given to the NAHB directors by FHA Commissioner Raymond M. Foley. He told the builders they have been in an unfair position with the public which does not realize the home builder cannot control the current high costs of materials and labor. He stated that he believes labor can play a most important part in reducing costs by providing a full day's work.



**PRESIDENT Carr explains NAHB policies.**

## Nathan Manilow Named President of Chicago Home Builders

At its annual meeting in May, the Chicago Metropolitan Home Builders Association elected Nathan Manilow president to succeed Arthur E. Fossier, 1946 president.

Other officers named are Charles E. Joern, first vice president; Louis Schorsch, second vice president; Kimball Hill, secretary, and Irvin A. Blietz, treasurer.

Directors chosen for the coming year include A. O. Aldrich, George Aquilla, Martin H. Braun, Roy H. Davis, Newton C. Farr, Joseph B. Ford, Mr. Fossier, Hilding



**NATHAN MANILOW**

Johnson, John R. Lewis, John Cummings Lindop, E. C. Mahoney, Joseph E. Merriam, George F. Nixon, Arthur A. Olson, Morton H. Robbins and John H. Sullivan.

Messrs. Blietz, Joern, Lewis, Manilow and Nixon were also named National directors, and Messrs. Schorsch and Fossier as alternates.

## Editor of Home Builders Monthly Replies to the "Awful Truth"

Writing in the May issue of the official publication of the Home Builders Association of Metropolitan Washington, the *Home Builders Monthly*, Editor Paul H. Bolton answered a recent blast against the building industry. He wrote:

"Elizabeth Gordon, personable Editor of *House Beautiful*, attended the Chicago Convention of NAHB and spoke interestingly on two of the forum panels. She assumed to hold a good concept of the home builders' problems and gave some forthright suggestions. That is why it is hard for us to rationalize her sudden caustic and scathing denunciation of builders generally . . . in a current editorial outburst. We cannot help feeling that such copy is written for sensational reading; playing to the mass newsstand reader . . . at the expense of her gracious home builder friends . . . contradicting her Chicago remarks.

"*House Beautiful's* May issue came out with an article called 'The Awful Truth,' a tremendous blast at the building industry, prices and the whole situation."

Then Editor Bolton reviews the article and concludes, "'The Awful Truth' impresses us as being no truth at all, but the same narrow-minded example of singling out an isolated case or two in order to put sand on the track of all home builders. Yes, Elizabeth Gordon, you know better . . . a lot better . . . than that!'"

## Foley Names Maurice R. Massey New FHA Zone Commissioner

Appointment of Maurice R. Massey, of Washington, as Federal Housing Administration Zone Commissioner in charge of Zone 1, which includes the ten northeastern states, has been announced by Raymond M. Foley, FHA commissioner. He succeeds John G. Rouse, Washington, who has assumed new duties as special assistant to Franklin D. Richards, assistant commissioner of FHA.

Before being appointed to FHA in 1934, Mr. Massey was a partner in the firm of J. R. Massey & Son, of Philadelphia, the oldest real estate and brokerage firm in



MAURICE R. MASSEY

Pennsylvania. In 1941 he was named an assistant to the first assistant commissioner in charge of mortgage insurance operations.

He served in the Army Air Forces from 1942 to 1945 and after his release as a lieutenant colonel he returned to the FHA as assistant to F. A. Van Patten, zone commissioner for Zone 2, which covers the sixteen southern and southwestern states.

He has lectured extensively on housing, real estate and financial matters at several universities, as well as before banking groups and other institutions.

## Texas Association Boasts a Membership of Over 800

In a recent report to all members of the Texas Association of Home Builders, V. F. Buchek, president, told of the accomplishments of the organization during its relatively short existence. He said, in part: "Last fall a small group of home builders from Dallas, Houston, the Sabine area, the Texas Panhandle, and San Antonio met. The TAHB was formed, and it now has both state and national charters. The Fort Worth Chapter has joined the ranks, and we now boast a membership of over 800, composed of all members of the affiliated local associations and some individuals from communities without NAHB chapters.

"In the few months of its life, the state association has already accomplished gigantic tasks. For example, a proposed bill, sponsored by large eastern insurance interests which would have permitted insurance companies to enter the home building industry in Texas, was defeated—defeated largely through the efforts of the members of the state group testifying before committee hearings in Austin."

## Cortright's Column

By Frank Cortright

Executive Vice-President, National Association of Home Builders of the United States



**The professional mourners** in Washington who have been moaning recently about the status of home construction and high prices have certainly not been talking for those responsible for the housing program. It is becoming increasingly clear that the defeatist talk about home building has originated with Washington's swivel-chair carpenters—not with men at the top who know housing facts.

**The crying** isn't coming from Housing Expediter Creedon. After a careful study, he has gone further than many people in the industry in flatly forecasting one of the biggest construction years on record. He foresees a million units completed in 1947 if several final controls are maintained "a few months longer."

NHA Administrator Ray Foley recognizes that home builders are doing a big job of constructing and often have been put in an unfair position with the public when blamed for cost conditions they cannot control.

**Compare the attitude** of these two top administrators with the anonymous experts who have been filling the air with lament about lack of starts, poor progress, high prices. Why newspapers have featured the dismal forecasts—adding to buyer reluctance—instead of printing the facts as reported by these responsible officials is one of the minor mysteries of the day.

The actual record shows that we are doing well—that completions are coming through in good volume and so are new starts—that there is good reason to hope for a million-unit year. Above all, house prices are not out of line with the cost of other things the country needs—and is paying for.

**It would be well** if the Housing Expediter's statements were given prominent recognition everywhere. It is not just hopeful talk he is giving—it is reporting facts. That kind of optimism—based on facts—can do far more for the country than all the "weeping Willie" talk along the Potomac.

Defeatist statements will never help us build a staunch, sturdy economy—or get out the kind of housing production the nation needs, and can use. Home builders propose to build the country away from recession instead of trying to talk one into existence.

We've got the capacity to carry forward a strong, sustained program of construction. That kind of activity will support high employment and a strong purchasing power fully capable of meeting a high-wage, high-price-level economy.

I say, let's have more facts, more production, and less defeatist talk from anonymous experts.

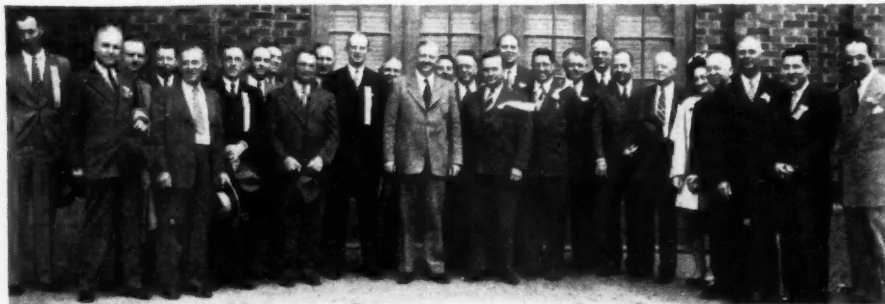
**Before long**, home builders are going to see what the engineered house looks like. For many months, technical committees have been working out practical ways of applying pre-tailoring principles to materials and equipment for house construction. Now they have just about finished up their basic work.

Although the idea of the house has been widely discussed, the designers and engineers have been working quietly, without fanfare, to get the project into the realistic plan stage. First blueprints are to be disclosed this fall.

**Preliminary results** are interesting. While no one can forecast now with any accuracy the effect of the planning principles on final costs, home builders will do well to watch for the announcement and study the proposal carefully when it is unveiled. The country is going to hear a great deal about the "industry engineered house" in coming months. And if the planning ideas work out as well in actual practice as they look on paper, the "engineered house" may have a great deal of appeal.

**In many ways**, the principles incorporated in present plans involve much learned by home builders in recent years. Certain ideas go further and incorporate some interesting departures from commonly accepted practice. One thing is sure: There will be plenty of public interest when the announcement is made, and many inquiries directed to builders are likely.

## Memphis Builders Stage Successful Show



A GROUP of Memphis Home Builders at the opening of the Second Annual Home Show.

The Memphis National Home Show staged during April by Curry National Home Shows of Dallas, Texas, and sponsored by the Home Builders Association of Memphis and The Memphis Commercial Appeal attracted more than 20,000 persons, according to John B. Goodwin, association president, shown in the center of the above group, next to Memphis Mayor Polk.

More than 85 exhibits were presented, including every kind of electric appliance,

home furnishings and model homes. The display of the HBAM consisted of a moving picture of actual construction in various subdivisions—projects of the members—and proved to be a focal point of interest.

Other features of the show included attendance prizes which ranged from Bendix washers and sewing machines to combination radio and record players, ironers and other items. These were awarded at the close of the show.

## More Than 110,000 Attend Chicago Home Show

Staged around the theme that "It's Good Economy to Buy Homes Now" the First Chicagoland Home Show, sponsored by the Chicago Metropolitan Home Builders Association, drew an attendance in excess of 110,000 between May 17 and 25. It was neither a gadget nor an accessory show, but depicted home building in all its phases. More than ten per cent of the exhibitors were actual home builders. The Association's institutional display showed accomplishments of Chicago Metropolitan home builders since 1940 and also featured a thermometric graph illustrating that the rise in home building costs is not out of line with increased costs of other commodities.



MARTIN C. HUGGETT, executive vice president of Chicago Chapter, at Home Show.

## Cleveland Builders Hold Annual Banquet

The annual banquet and dance of the Home Builders Association of Greater Cleveland was held at the Hotel Cleveland on June 5. Guest speakers were Edward R. Carr, Washington, D.C., president, National Association of Home Builders, who flew to the meeting after attending an industry conference in the afternoon in his home city, and Ed Gavin, Chicago, editor, *American Builder*.

President Benton Lefton of the Cleveland association presided, and opened the formal part of the program with a brief message of thanks to his officers and the committee on arrangements. He selected Executive Secretary James V. Funaro as the object of special praise for the conduct of his office.

The meeting was distinguished by offering a complete cross-section of housing attitudes among those included in the invited guests. FHA, NHA and U.S. Department of Commerce officials, labor leaders, city councilmen, the American Legion housing chairman, and Cleveland's

most noted advocate of public housing were present. Total attendance, which included most home builders in Cleveland and their key employees, was about 500.

Both the speakers were in agreement that home building prices and costs would not come down far or fast, but that competition for markets and competition for jobs would increase the efficiency of home building, and the man-hour output of labor. Both agreed that with Congress about to adjourn for the summer, there was very little likelihood that the Taft-Ellender-Wagner bill would be offered on the Senate floor for a vote. Both Carr and Gavin urged positive industry-wide action for a home builders' program as the best defense against social housing legislation.

Mr. Carr urged the Cleveland builders to embark on an objective study of Cleveland's slum clearance needs and land redevelopment opportunities, with a view to obtaining facts as a basis for a local program.

## Seattle Association Inaugurates Public Information Program

To combat the resistance of buyers to current building costs the Seattle Master Builders Association is undertaking a publicity program to inform prospective home owners on the facts of the construction cost situation. Commenting on the project, V. H. Dent, executive vice president, said: "There has been so much misinformation reaching the public regarding costs of construction that the public attitude toward costs has been warped.

"The Master Builders, in conjunction with the Realty Board and the Mayor's Housing Committee, have been working toward getting facts to the public. 'There is nothing, either good or bad, but thinking makes it so.' Shakespeare told us this some centuries ago. It's not so much the costs that are haywire, it's the thinking. And it's our job to see that the public gets the facts.

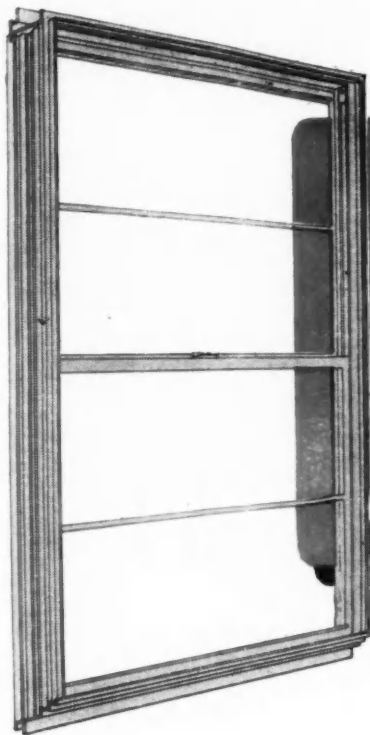
"True, some elements of cost are out of line—such as production of labor—nevertheless the overall cost structure is not out of line with the value of other commodities."

## Carr Points Out Prewar Record at Washington News Conference

Home builders were producing for the low cost market before the war interrupted, NAHB President Carr recently said.

"FHA figures show the average annual income of borrowers on new houses in 1941 was \$2,250," he said. "More than 70 per cent of the FHA type borrower on new houses had annual incomes under \$3,000 and nearly 30 per cent had incomes under \$2,000. Remember, we produced 619,000 houses in 1941.

"It is the favorite contention of the public housing advocates that private builders have failed to provide good housing for the low income groups. These figures conclusively show that the industry was doing a good job before the war. The promise of the future is based upon solid performance in the past. The notable progress in the pre-war period, impeded as it was by the lingering effects of a major depression, indicates some of the possibilities which are ahead."



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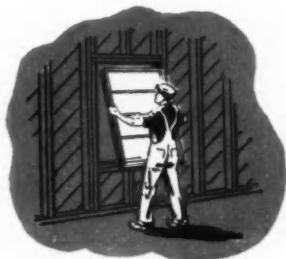
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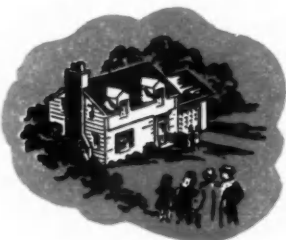
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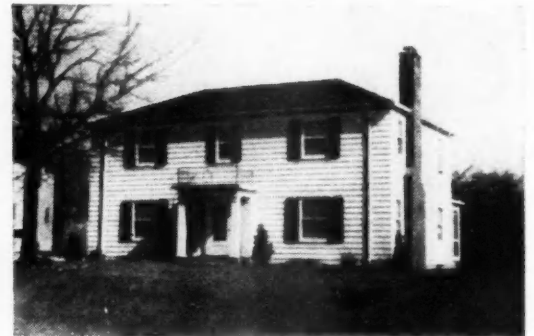
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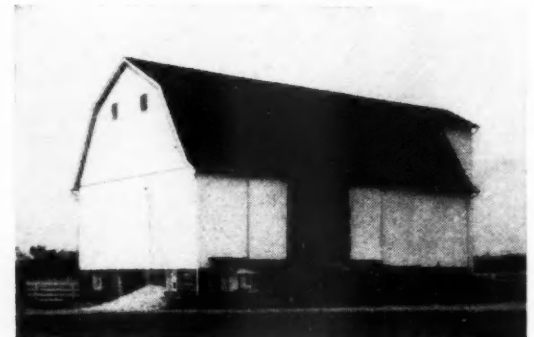
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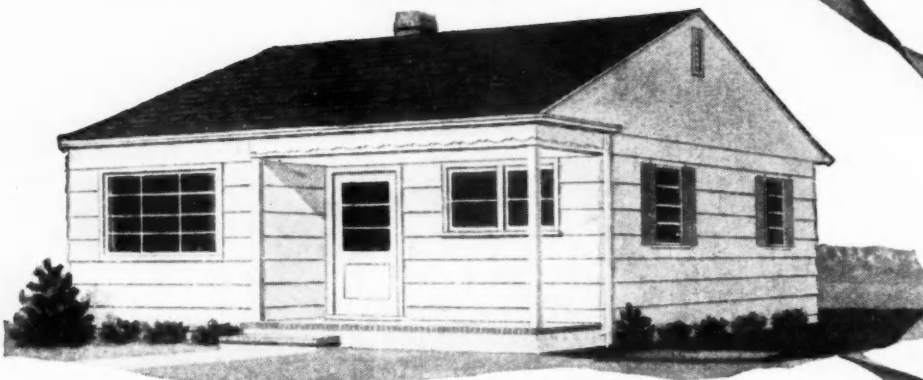
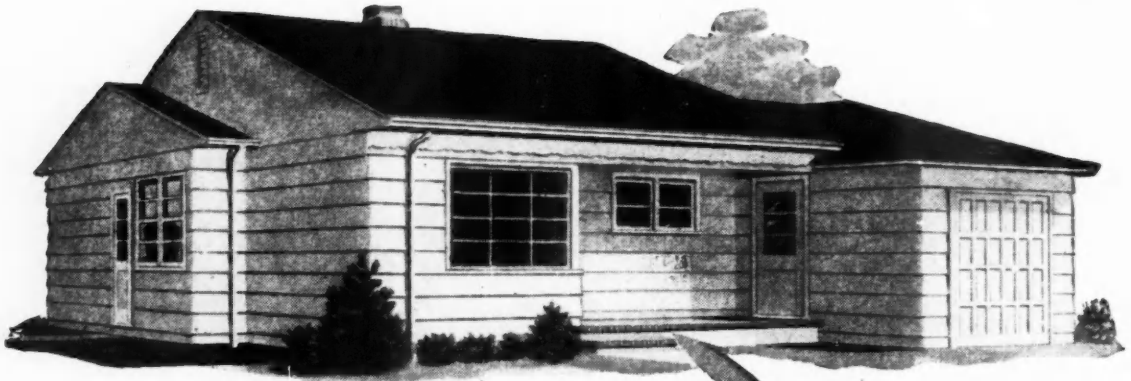
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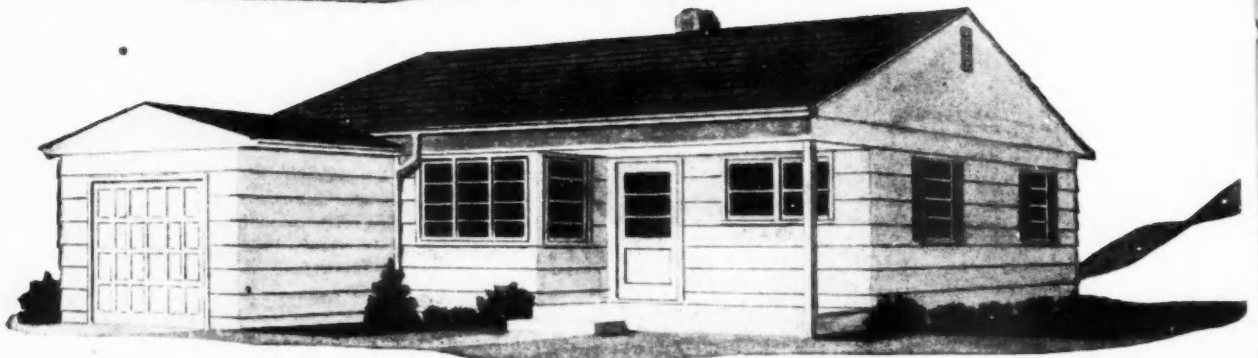
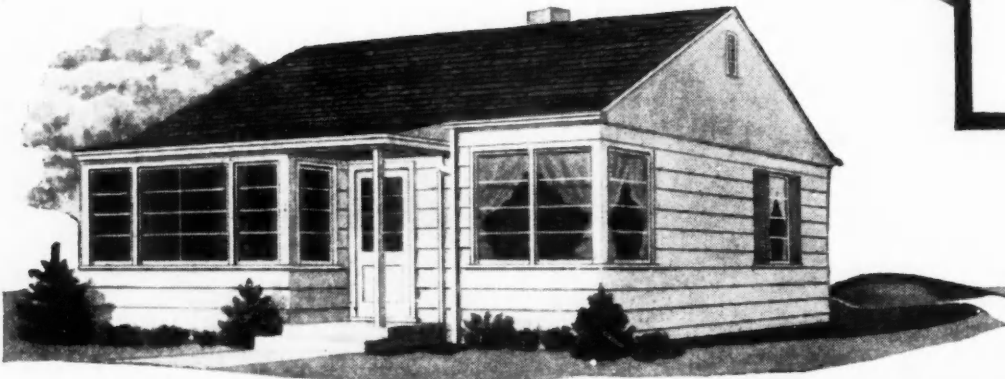
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# Another group of *Related designs*



*Enriching a Plan*  
that has  
**DEMONSTRATED**  
its  
**POPULARITY**



The new designs illustrated on these pages, together with the House of the Month, are now being released to lumber dealers who employ the Weyerhaeuser 4-Square Home Building Service.

# another *Business builder* in the WEYERHAEUSER 4-SQUARE HOME BUILDING SERVICE

● One of the biggest problems facing the home builder who is planning to erect several houses in the same cost bracket and in a single neighborhood is to procure a practical, well planned interior with a variety of exterior treatments.

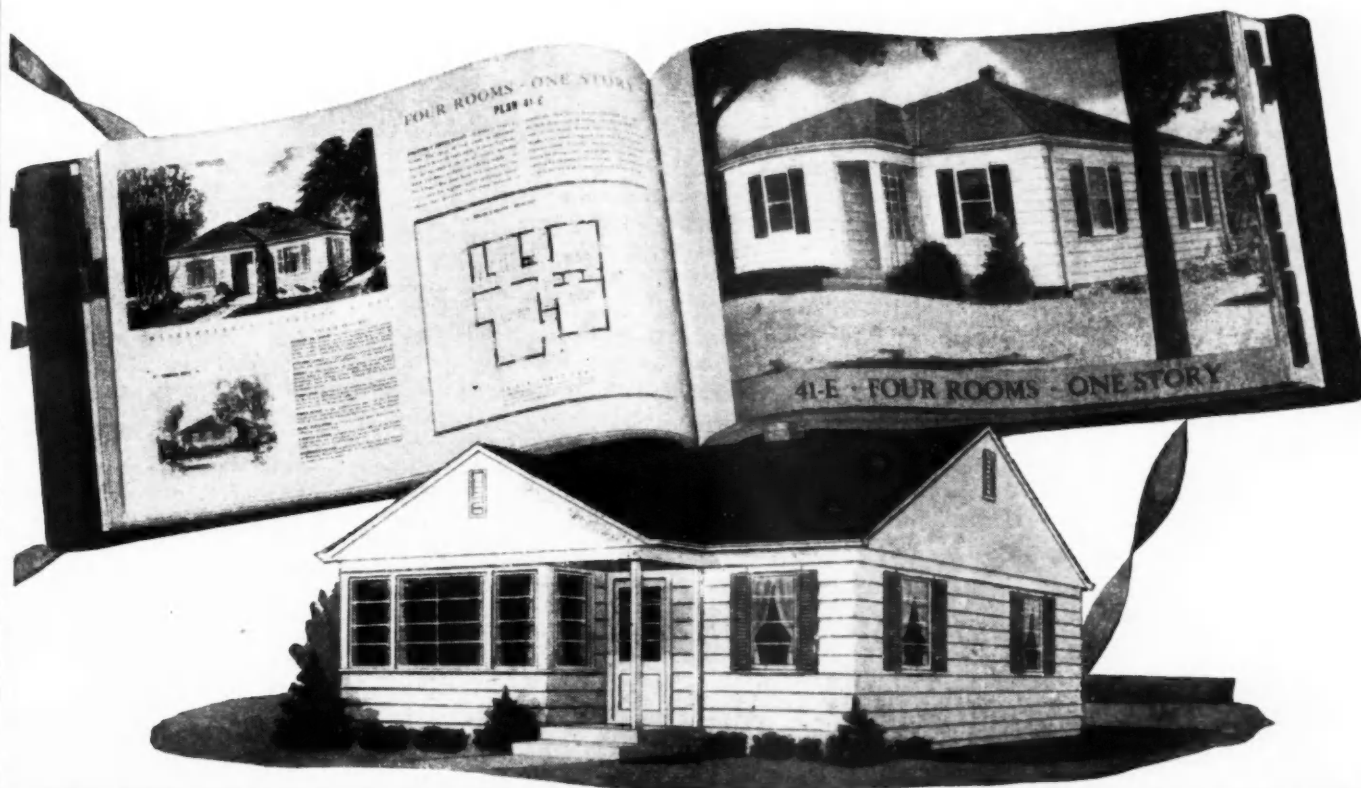
Illustrated here is a group of Related Designs developed from one of the most popular homes of the Weyerhaeuser 4-Square Home Building Service. These Related Designs have almost identical floor plans, but are designed with strikingly different exteriors. Last month you saw the first of a series of such groups. With these Related Designs, the home

builder is in a position to render a most valuable service to his customers and to a growing community. He is able to offer houses of proved popularity with a range of exterior treatments, every one of which reflects definite character—that quality of charm and attractiveness which skilled architects incorporate in their work. Here is variety, sound construction, and high salability.

For further information see your Weyerhaeuser 4-Square Lumber Dealer.

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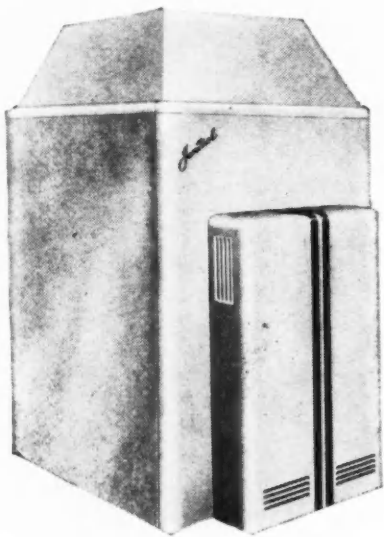
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**THE NEW, IMPROVED, GAS-FIRED**

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**IS THE MOST PRACTICAL**



**G**RAVITY warm air has always been a popular method of heating small and medium homes. Now it has been brought up to date by the newly designed, completely automatic Janitrol Gas-Fired Furnace.

#### Versatile for Many Floor Plans

Especially suited to small basements, this new Janitrol takes little floor area, eliminates the need of space for fuel storage. It's good looking too, with attractive gray casing and neatly rounded corners... looks as modern as its design.

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The Janitrol Gravity Furnace is economical... to install... to use. It gives a gentle, continuous flow of warm air to each room, without blowers or motors. Operation is fully automatic, furnace requires no attention... simplicity of design and

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Write today for the new Heating Guide File A.1A 30B. Architects, Builders, and Contractors will find it most useful.

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# Janitrol

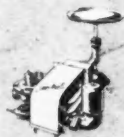
**GAS-FIRED  
HEATING EQUIPMENT**



Winter Air Conditioner



Gravity Furnace



Conversion Burner



Unit Heater

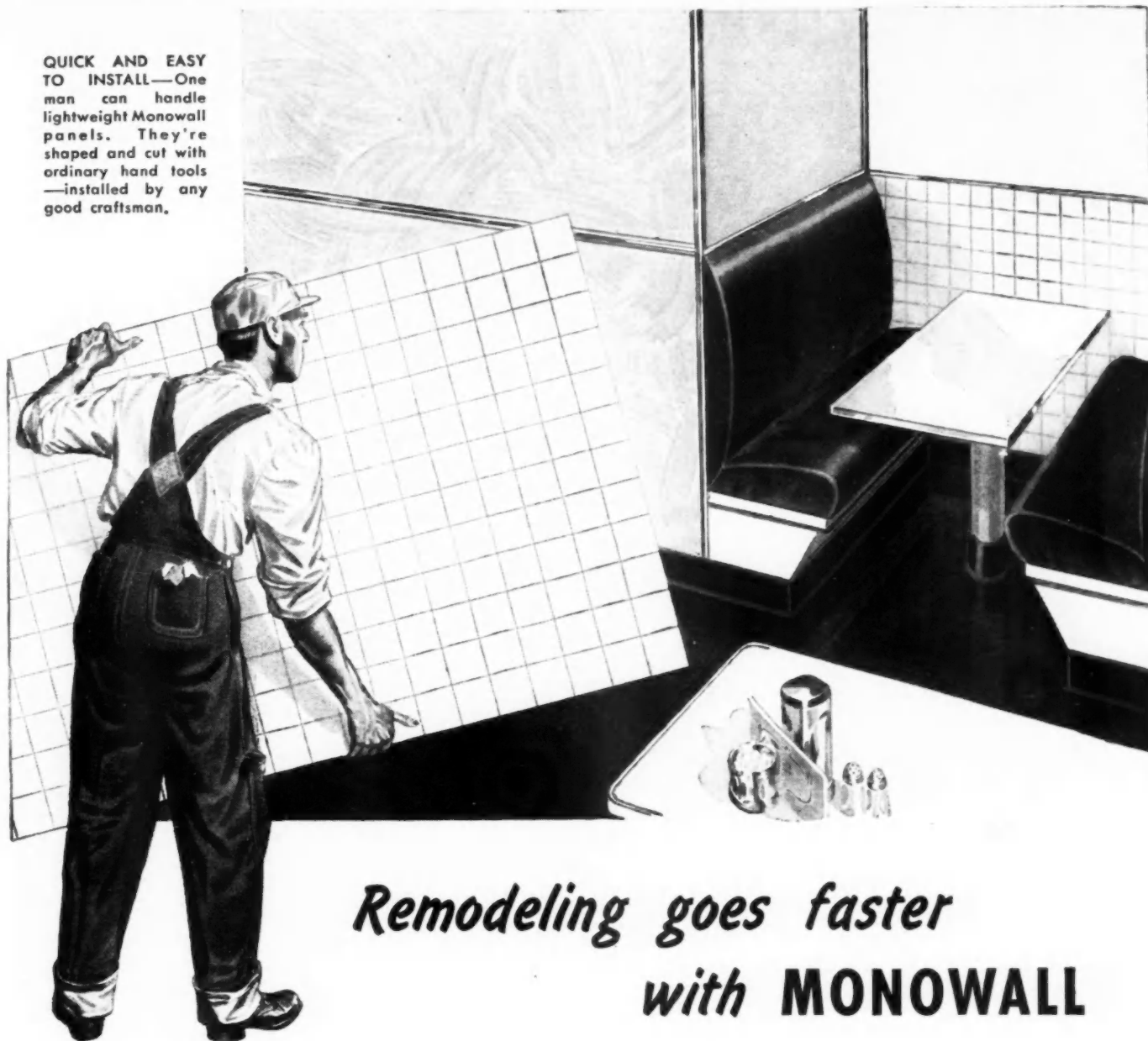


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MONOWALL AND TEMLOK ARE REGISTERED TRADE-MARKS.

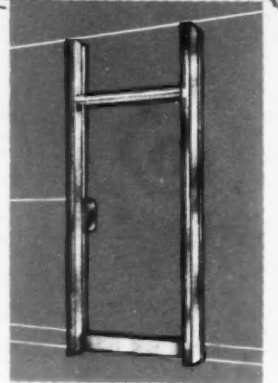
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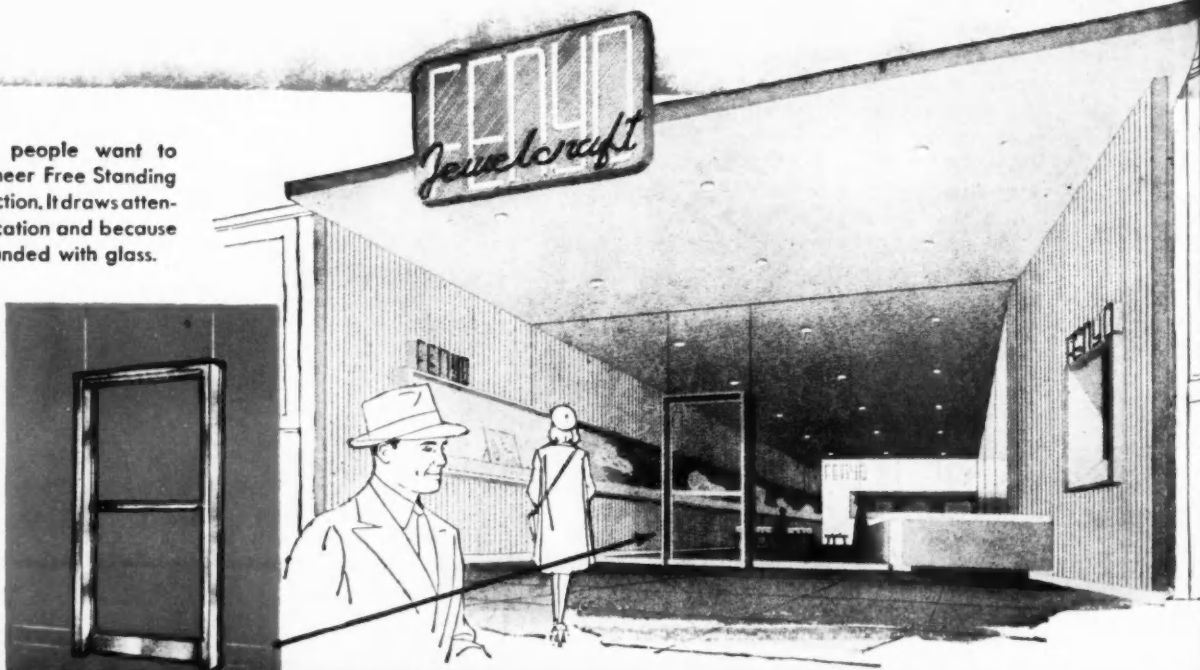
# entrances that say "Come In"

Shopper's eyes are drawn to the sign on its striking aluminum backing—then to the interior which is fully displayed by floor-to-ceiling glazing and the stream-lined Full Vision Entrance.

**KAWNEER OFFERS A COMPLETE  
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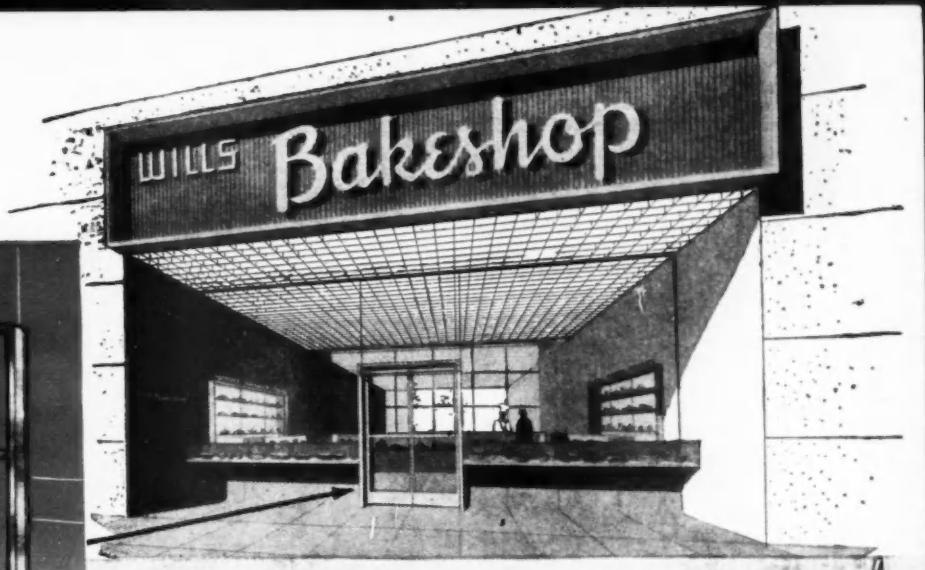
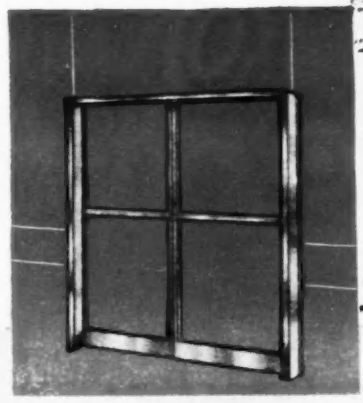


Doors should make people want to enter—and this Kawneer Free Standing Entrance fulfills this function. It draws attention because of its location and because it is completely surrounded with glass.



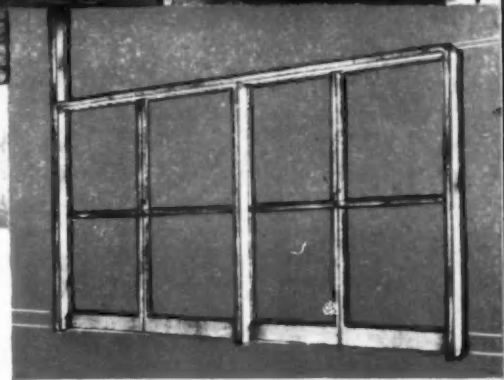
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Entrance.

This Free Standing double-door offers a compelling and friendly invitation to enter. The entire front—sign, showcases, and walls—were designed to bring out the entrance as the main point of interest.



The Fenyo, Catty Patty, and Gregory Stores were designed by Ketchum, Gind and Sharp, Architects, New York City. The Bakeshop was designed by the Design Department of the Kawneer Company.

To handle Gregory's large volume of traffic, two Full Vision double-doors are placed in a prominent location where they are quickly seen, yet they do not interfere with the internal operation of the store.



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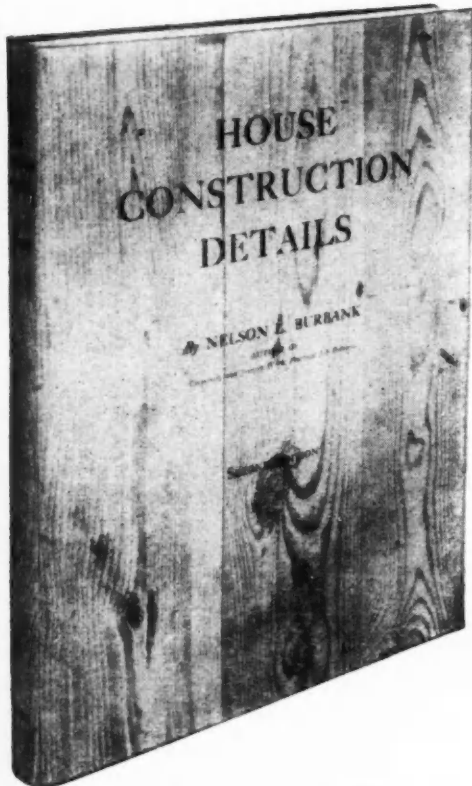
# Kawneer

SALES-BUILDING  
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# HOUSE CONSTRUCTION DETAILS

By **NELSON L. BURBANK**



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Many of the new materials such as plywood are shown in application. Various systems of pre-fabrication are shown in addition to traditional methods of house carpentry. Chapters on painting, wiring, insulation and sound proofing, and on heating and air conditioning show modern methods. Graphic and factual information from widely scattered sources is brought together and cross-indexed for quick reference.

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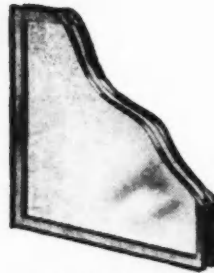
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# How to Install *Thermopane*

REG. U. S. PAT. OFF.



CUTAWAY VIEW OF  
THERMOPANE UNIT

Because *Thermopane* is being used more and more in buildings of all types, you will welcome this step-by-step explanation of *Thermopane* installation. It requires no special skills or special tools. For more complete glazing details than illustrated below, check your Sweet's File or write us.

## IN WOOD SASH



1. Be sure opening is square so unit will not bind. Bed sash with high-grade glazing compound free of corrosive agents before the *Thermopane* is inserted.



2. Place unit on approved setting blocks located in from each corner and centered  $\frac{1}{4}$  the length of the unit. Press in evenly. Allow equal clearance between edges of glass and sash.

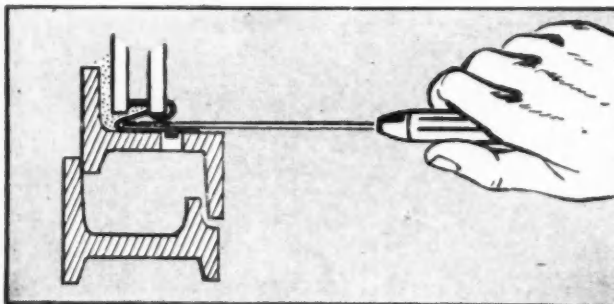


3. Fill voids on all edges with glazing compound to prevent air infiltration and water leakage. Do not use blocks at sides or top of *Thermopane*.



4. Cover perimeter with glazing compound before applying face stops. To avoid point pressure, do not toenail unless sash is rabbeted to receive stop.

## IN STEEL SASH



Specially-designed L·O·F phosphor bronze clips are now available from L·O·F Distributors for installation in steel sash.

1. Bed sash with glazing compound.
2. Insert *Thermopane* unit.
3. Put clip on end of putty knife.
4. Insert clip between edge of *Thermopane* unit and steel section until clip lug snaps into hole.
5. Fill all edge voids.
6. Face finish with glazing compound.

## STANDARD SIZES

*Thermopane* is made in more than 60 standard sizes, readily adaptable for new construction or remodeling—for Picture Windows, Window Walls, double hung wood window units and residential steel casements. Your L·O·F Distributor has most of the Picture Window standard sizes in stock. Libbey-Owens-Ford Glass Company, 1877 Nicholas Building, Toledo 3, O.



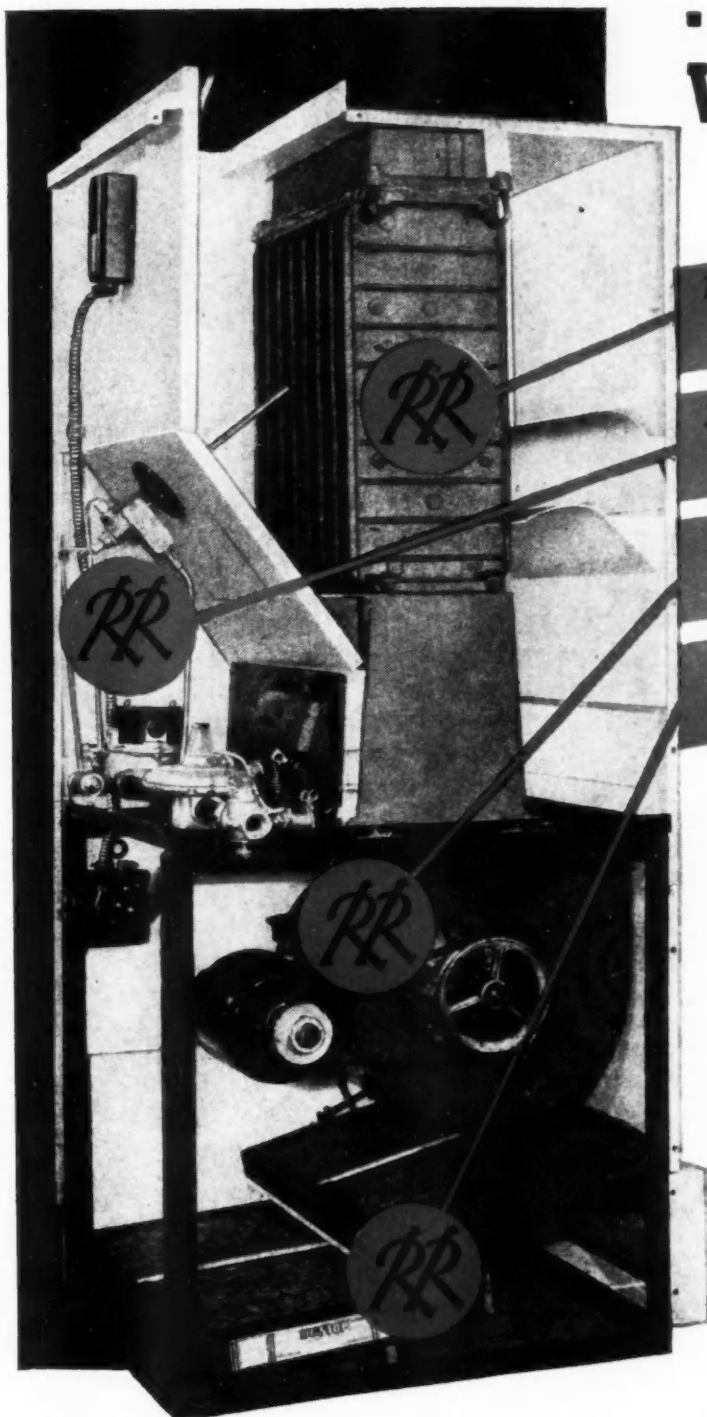
**LIBBEY·OWENS·FORD**

*a Great Name in* **GLASS**

ONLY L·O·F MAKES *Thermopane*

# Turn Prospects into Customers

## ... with new Richmond Winter Air Conditioner



**NEW CAST-IRON-CHROME ALLOY**  
... heat exchanger lasts longer under  
higher temperatures.

**MORE EVEN PERFORMANCE**  
... limit control prevents unit from  
overheating.

**IT'S QUIETER ... blower fan floats  
on rubber.**

**SPUN GLASS FILTER easily renewed.**

IT'S EASIER TO SELL a prospect when you show him something he will want. That's why it's easier to sell with the new Richmond Winter Air Conditioner. A single unit in a smart Dulux white enamel finish, completely packaged, it fits in home, office or store. Heats, humidifies, circulates, filters... comes in four sizes... occupies only about 4 to 6 square feet. Covered by *both* AGA approval and a one-year replacement guarantee. Get details from your Richmond wholesaler or write Richmond Radiator Company, 19 East 47th Street, New York 17, N. Y., for the name of your nearest distributor.

FACTORIES AT METUCHEN, N. J., MONACA, PA., NEW CASTLE, DEL., UNIONTOWN, PA. (2)

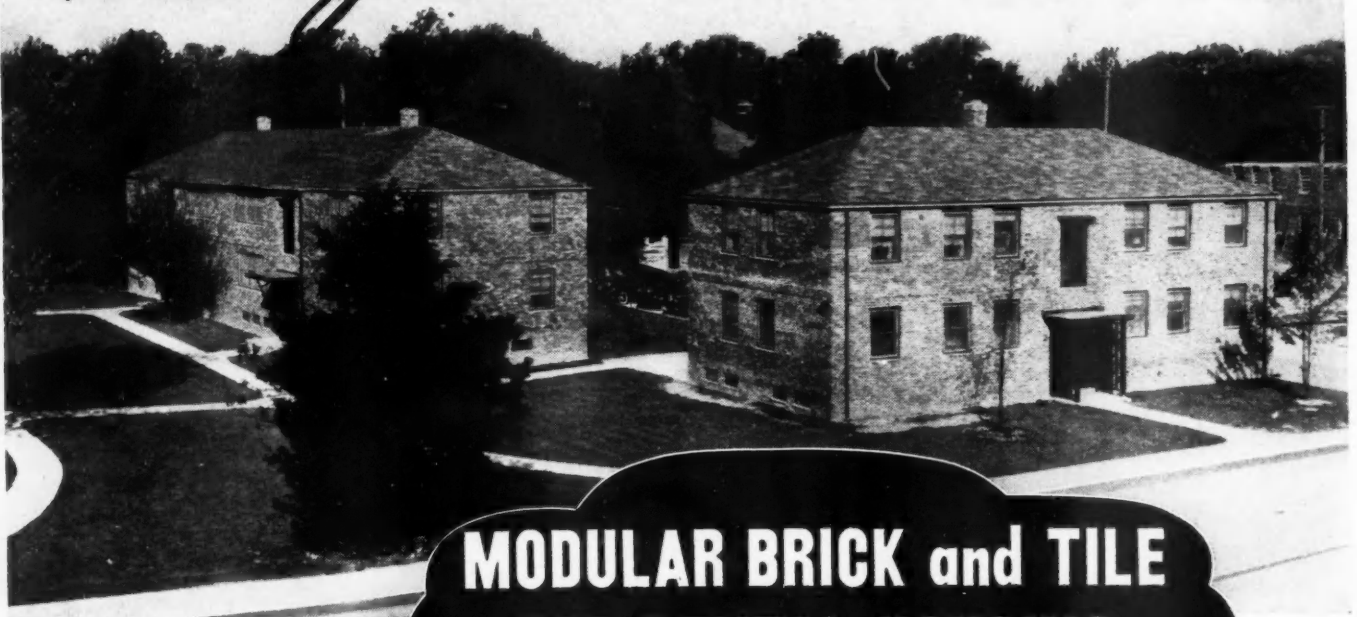


### RICHMOND RADIATOR COMPANY

*Affiliate Reynolds Metals Co.*

Enamelled Cast Iron Ware • Vitreous China • Pyrex-Glass • Gas Boilers • Gas Winter Air Conditioners • Gas Gravity Furnaces • Radiators

*Quality* available at lower cost...



## MODULAR BRICK and TILE FOR RENTAL HOUSING

Prospects for building seem to depend largely upon availability and lower cost of high quality building materials.

Contractors and builders, who are constructing rental housing, can rely on modular brick and tile for both these points.

There is no shortage of brick and tile. Quality is high as usual. And costs of masonry construction are lower than costs of other types. These factors are very important to investors who put up the money for rental housing.

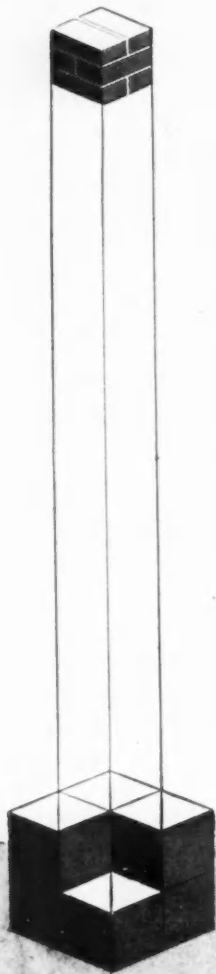
But lower first cost is not the whole story. Reduced maintenance and repair charges make possible lower annual operating costs. Year after year, this is the real test of costs.

In modular sizes, brick and tile mean more savings through simplified estimating... less cutting and fitting... better workmanship with less labor... reduced construction time.

And the good looks, sound construction and great fire-safety of rental housing of brick and tile assure maximum *rentability* for the life of the structure.

### Booklets to Help You

"Your New Home in Brick," our new plans book of 30 small homes is now available for 50 cents. Two FREE booklets: "Announcing Modular Sizes of Brick and Tile," and "Your Home of Burned Clay Masonry" are also available. Just address your request to Structural Clay Products Institute, Dept. AB-7, 1756 K Street, N.W., Washington 6, D.C.

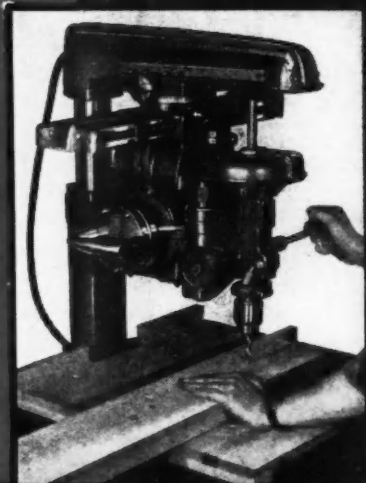
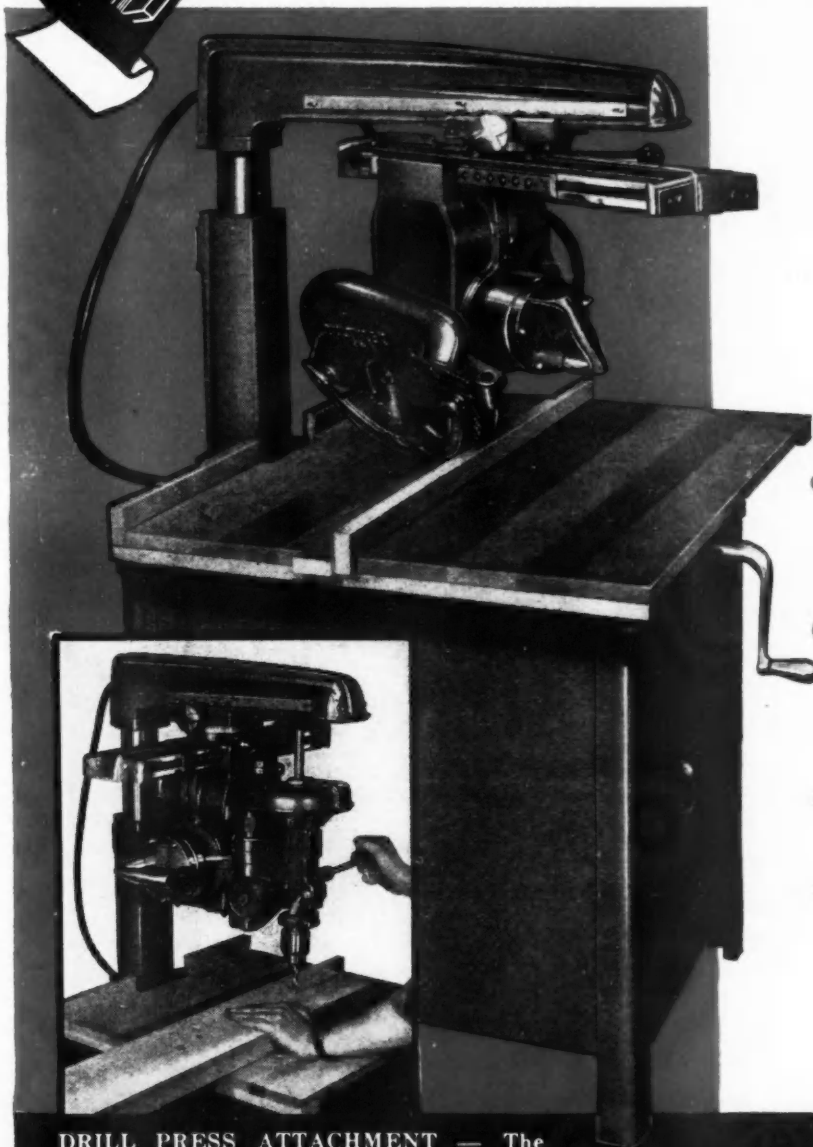


Now it will be built with modular-designed  
**BRICK AND TILE**



# More Operations with a **MULTIPLEX**

## Radial Arm Saw



You will save time and labor by using a Multiplex. It is no longer necessary for the contractor or builder to take a truck load of single purpose tools out to the job. One Multiplex will handle almost any wood working operation.

- Exclusive **VERSATILE ELBOW**, or center pivot track, rotatable 360°, permits an infinite number of saw positions for accurate cuts at any angle.
- No other saw compares with the Multiplex in **Mitering Capacity** -- difficult **LEFT HAND** as well as conventional right hand miters up to 90° are handled with ease.
- No idle travel of cutting head. Every movement carries a "pay load".
- Accurately calibrated and legible eye level scales permit quick set up for any operation.

*Write for full information and name of nearest dealer.*

**DRILL PRESS ATTACHMENT** — The Multiplex 30A and 40A can be quickly and easily converted to a high speed ball bearing drill press. Can also be used for shaping, carving, routing, circle routing, sanding, planing and other operations.

**RED STAR PRODUCTS, INC.**  
3455 VEGA AVENUE, CLEVELAND 13, OHIO U. S. A.

*Build as a*



Notice the ease with which metal windows can be washed from within.



**Why**

## METAL WINDOWS?

All over America architects, engineers, contractors and builders are planning ahead today for the homes of tomorrow—and in the homes of tomorrow they know there must be new features to add to the beauty and the utility of those homes. One feature every home should have is steel windows. They not only offer greater utility but add to the beauty and lasting appearance of any home. Consider the advantages Ceco metal windows offer:

- 1** Tighter weather seal—precision engineering keeps out cold, dust, rain; keeps heat in.
- 2** Gives more light—affords from 20% to 60% greater light area.
- 3** Lowest initial cost installed—metal windows cost less than any other type of windows installed . . . initial cost is the final cost.
- 4** Easy to install—no weather stripping necessary. Minimum labor in installing hardware. No planing or fitting.
- 5** Controlled ventilation—up to 100% . . . catches stray breezes . . . controls drafts.
- 6** Easier operation—always fit . . . no sticking, warping or swelling.
- 7** Fire safety—Ceco metal windows are fire resistive.
- 8** Easily washed from inside—both sides of window can be washed from within.

Partial list of other Ceco Products: Aluminum Frame Insulating Storm Panel for Metal Casements • Meyer Steelforms • Reinforcing Steel • Metal Frame Screens • Metal Weatherstrips • Steel Joists • Metal Lath and Accessories

### CECO STEEL PRODUCTS CORPORATION

GENERAL OFFICES: 5701 West 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities

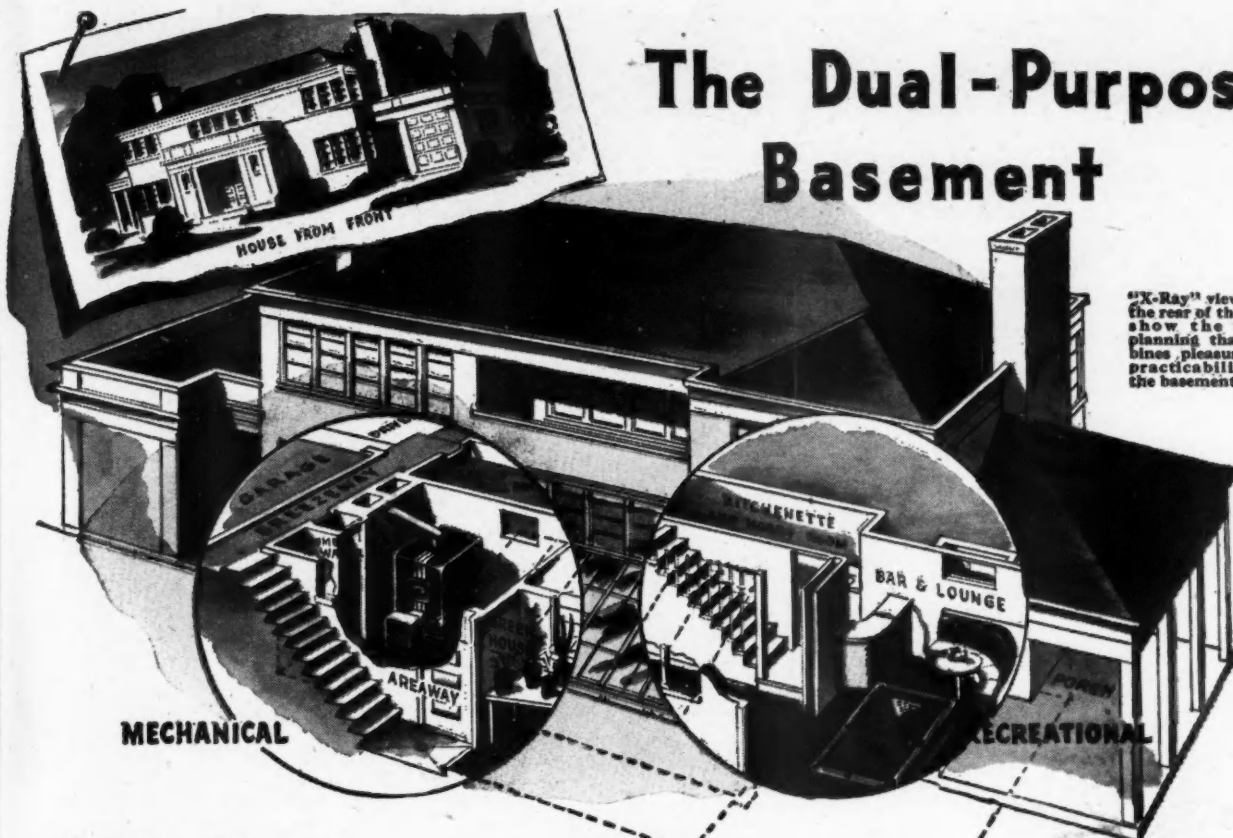
*In construction products* **CECO ENGINEERING** *makes the big difference*

*Bo*

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# The Dual-Purpose Basement

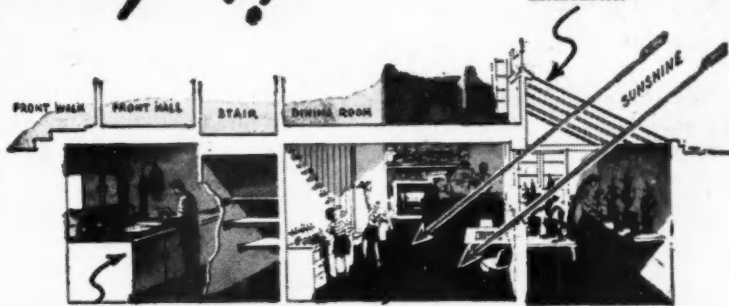


"X-Ray" views from the rear of the house show the smart planning that combines pleasure with practicability—in the basement!

## Both Barrels hit Bullseyes!!

Today's emphasis is on basements—recreationally and mechanically. Once, the basement was The Cellar, a dark and damp little dungeon just big enough for the lawnmower, the furnace and the summer's canning. But no longer! The basement is the foundation of today's house in more ways than one—and the possibilities for pleasure-plus are brought out with a punch in this lovely home and its practical basement!

The designer of this house insures *comfort* by providing for coal heat.\* Even with its kitchenette, hobby and social rooms and sunlit greenhouse, this basement has no feature that promotes more pleasant living than the coal heating system—the sealed bin and the automatic, bin-fed stoker. Coal heat is the pleasant way of heating because it's the sensible way—it's clean . . . healthfully even . . . economical. And Bituminous Coal will be here for a long, long time. Heating with coal is the *proven* way. You're bidding "Pleasant Living!" to your client when you design his home for coal!

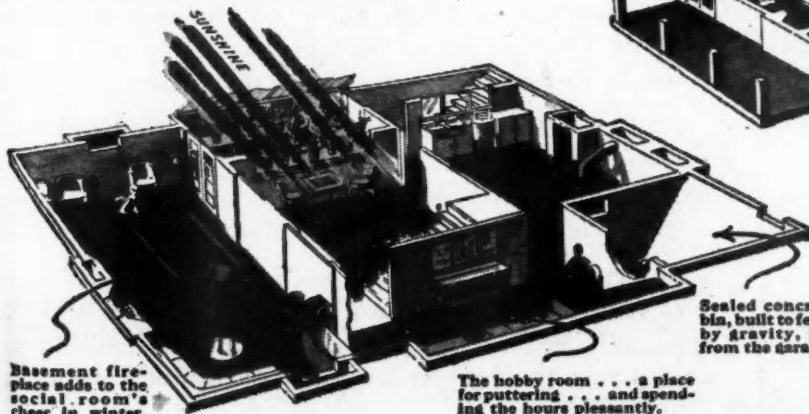
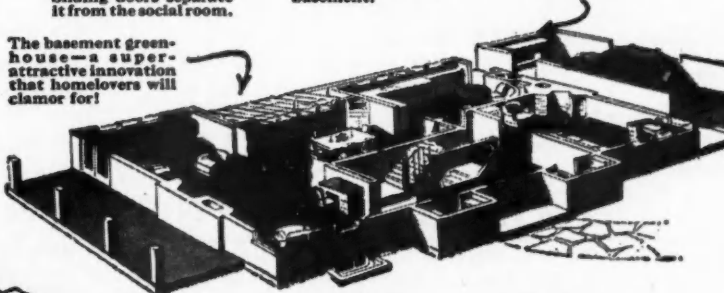


The basement kitchenette—ideal for snacks or full-course dinners—makes party-giving a pleasure. Sliding doors separate it from the social room.

The social room, complete with refreshment bar and lounge, moves the rumpus to the basement.

The garage is roomy, with inside entrance to the house.

The basement greenhouse—a super-attractive innovation that homelovers will clamor for!



Sealed concrete coal bin, built to feed stoker by gravity, is filled from the garage.

Basement fireplace adds to the social room's cheer in winter.

The hobby room . . . a place for putting . . . and spending the hours pleasantly.

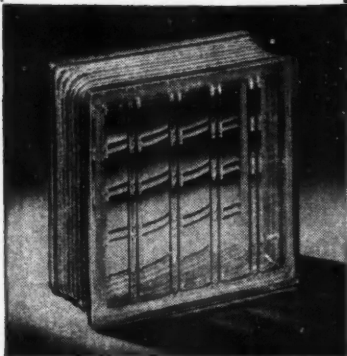
## Norfolk and Western RAILWAY

CARRIER OF FUEL SATISFACTION

\*Speaking of coal, the choice of millions is Fuel Satisfaction—the superior, all-purpose bituminous coal mined along the Norfolk and Western.



OWENS-ILLINOIS  
**INSULUX**  
 GLASS BLOCK



*Build your business with Insulux!  
 Investigate the functional uses  
 of this truly remarkable build-  
 ing material.*

**Room for living...** light for liking it! Here, an Insulux Glass Block wall panel admits additional cheerful daylight to this attractive living room, yet preserves interior privacy.

## To borrow light . . . and light only! . . .

**I**NSULUX Glass Block offers this practical means of borrowing light from adjacent areas, at the same time maintaining privacy and hiding unwanted views.

Builders everywhere are taking advantage of the versatility of Insulux through its appropriate use in modern homes, stores and offices for both exterior and interior walls.

Clients will appreciate your suggesting Insulux in the building you now have under construction. Insulux requires no painting—is impervious to grease and moisture. To clean Insulux, simply wipe it with a damp cloth.

Remember, too—Insulux often heightens value, facilitates re-sale. Build your own prestige with this remarkable material. A letter, or the coupon attached, will bring an interesting free booklet illustrating new uses for Insulux in homes.

### SEND FOR FREE BOOKLET

OWENS-ILLINOIS GLASS COMPANY  
 Dept. D-56, Insulux Products Division  
 Toledo 1, Ohio

Gentlemen:

Please send me your New FREE booklet, "Ideas for Brighter Homes."

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Y'm str  
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Resul  
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 wear our  
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MODERN  
 BEAUTY



I'm strong for radiant heat!



I'm strong for convection heat!



# Modine gives you BOTH of these heat heating principles blended into one!



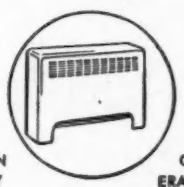
## 1 RADIANT HEATING

Mild, radiant heat in just enough quantity to offset heat loss from window areas — that's what those arrows represent, coming from the Modine Convector Panel below the window. To this we add . . .

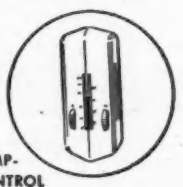
## 2 CONVECTION HEATING

Warmed air circulated by Convection Heating. Hot water or steam passes through copper heating unit which draws cooler, floor-line air into bottom of convector where it's warmed, rises and then passes out through grille.

**Result:** Dependable new heating comfort for moderate cost homes and apartments . . . distinctive room charm and cleanliness without unsightly radiators! Yes, Modine Convector Radiation provides a modern, blended heating system for modern living — a heating system that makes possible individual room control — that responds almost instantly to sensitive automatic controls — that gives you gentle air circulation without the use of moving parts that wear out. If you're planning to modernize, think of Modine Convector Radiation . . . look for Modine's representative in the "Where-to-Buy-it" section of your phone book . . . or send in coupon below for new, free Convector booklet! MODINE MANUFACTURING CO., 1701 Racine Street, Racine, Wisconsin.



MODERN BEAUTY



CLOSE TEMPERATURE CONTROL



EASY TO INSTALL



ADDS TO LIVING SPACE



PRICED FOR TODAY'S HOMES AND APARTMENTS

# Modine

## CONVECTOR RADIATION

The Modern "proved by use" heating method

Modine Mfg. Co., 1701 Racine St., Racine, Wis.  
Yes! I want your new free booklet containing complete facts on Convector Radiation. Please send it today!  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_

## There's a lot of unselfish thinking back of this campaign!

Of course, we hope this big full-color ad in the Gold Bond Saturday Evening Post series will sell more Gold Bond Building Products. But we hope, too, that it will get more folks... young couples, especially... steamed up about owning a better-

built home of their own, and soon. From the thousands of letters we've had so far, we think these ads are doing the right kind of job for the whole building industry.

**NATIONAL GYPSUM COMPANY, BUFFALO 2, N. Y.**



You'll build or remodel better with **Gold Bond**

You can start building sooner if you start planning now. See your local Gold Bond Dealer!

## Closer to heaven than you may think...

*"Through all the long hard war years, when Ted was overseas, we dreamed about a heaven all our own. Our own house in our own yard. With a sunny little garden out back... and a sunny little toddler out in front selling mud pies..."*

That's more or less the way thousands of couples have felt and we know from our mail that it's been hard at times keeping your chin up. But if a home of your own is your idea of heaven we can assure you that you are a lot closer to it now.

Materials are flowing again. Not all you want, but more and better materials than have been available for years. Products developed by research to make

your new house superior to any you could have built before. You'll say it was worth waiting for!

For instance, you can build sturdier, weather-proof, more firesafe walls with Gold Bond gypsum sheathing under the clapboards, brick or other outside finish. Costs no more than old-style sheathing!

You can keep summer heat out and furnace heat in with National Gypsum Company's new high efficiency, fireproof home insulation... Gold Bond Rock Wool. Pays for itself by cutting fuel bills as much as 40%. If you own your home now, you can have this same modern efficient insulation "blown" right into outside walls and top floor ceiling.

You'll have inside walls of lasting beauty if your architect specifies Gold Bond gypsum lath and plaster. And you'll have something new and beautiful in room decoration if you use quick-drying Gold Bond Sunflex paint. Comes in a wide range of colors.

Your Gold Bond lumber and building material dealer is headquarters for over 150 Gold Bond building products, each researched and engineered by National Gypsum Company, to build better value into your new home or to make your remodeling job easier. For suggestions see your Gold Bond dealer.

**NATIONAL GYPSUM COMPANY  
BUFFALO 2, NEW YORK**

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

**DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE**

<p><b>GOLD BOND FIREPROOF GYPSUM SHEATHING</b></p>	<p><b>GOLD BOND FIREPROOF GYPSUM LATH</b></p>	<p><b>GOLD BOND FIREPROOF GYPSUM PLASTER</b></p>	<p><b>GOLD BOND FIREPROOF FINISH LIME</b></p>	<p><b>GOLD BOND FIREPROOF ROCK WOOL INSULATION</b></p>	<p><b>GOLD BOND SUNFLEX 1-HOUR WALL PAINTS</b></p>
<p>Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costs less than old-style sheathing.</p>	<p>Gold Bond Gypsum Lath is the perfect plaster base. Can't warp, expand or contract. Adds fire protection and structural strength for better wall and ceiling construction.</p>	<p>Gold Bond Gypsum Plaster is especially processed to bond perfectly with gypsum lath. Builds fire-safe, rock-like walls and ceilings with greater durability and beauty.</p>	<p>Over the plaster, goes a coat of Gold Bond Finish Lime. This is the smooth white finish that you see in a new house before the wallpaper or paint is applied.</p>	<p>Builds a fireproof blanket of insulation around the house for greater year-round comfort, family health, and fuel savings up to 40%. Available for new or old homes.</p>	<p>Dries in one hour with no objectional painty, after-odor. Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.</p>

# PROOF



## in Pink Envelopes!

● WE'VE HAD thousands of letters—many in pink envelopes—from women who took the trouble to write for more information about Stanley Blue Ribbon Kitchen Cabinet Hardware. With that evidence of interest, here is a line you can't afford to overlook.

Even though none of the advertisements carry any particular request for inquiries, still letters continue to come in month after month.

Why not get your share of this business by recommending Stanley on all custom cabinet work and remodeling jobs? Write for full information today on this universally liked Kitchen Cabinet Hardware. The Stanley Works, New Britain, Conn.

Advertisements like this are telling millions of homemakers each month about Stanley Cabinet Hardware, through magazines like "Better Homes & Gardens".

# STANLEY

Trade Mark

HARDWARE · HAND TOOLS · ELECTRIC TOOLS



## Somehow I feel like dressing up for Stanley

● My kitchen's dressed up... with gleaming Stanley Blue Ribbon Cabinet Hardware... why shouldn't I? Stanley Hardware not only gives my kitchen a well-groomed appearance, but it saves me twenty times a day from irritating little annoyances. With Stanley Hardware, doors really latch when they're supposed to... release when they're supposed to... open free and easy on the hinges. Knobs are neat and trim, stay neat and trim! Latch handles, pulls and knobs are designed with ample finger room for grown-up hands.



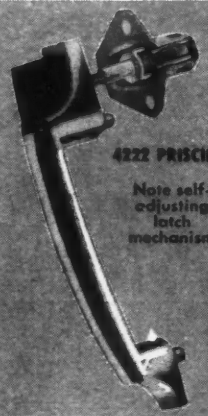
**NEWPORT PATTERN**  
Chromium with beautiful red or black plastic thumb-piece. Drawer pulls to match.

**PRINCESS PATTERN**  
Attractive blend of chromium and colorless plastic thumb-piece — with matching pull.

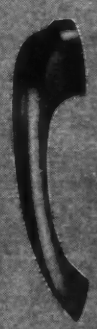
When you plan your kitchen or pantry, plan on Stanley Blue Ribbon Hardware. See it at your dealer's — the most practical hardware, at a price that's much lower than you'd think. The Stanley Works, New Britain, Connecticut.

# STANLEY

TRADE MARK  
HARDWARE · HAND TOOLS · ELECTRIC TOOLS



**4222 PRISCILLA**  
Note self-adjusting latch mechanism



**4224 NEWPORT**



**4220 REGENCY**



**4221 PRINCESS**

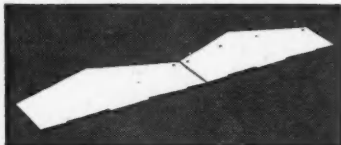


**4223 CENTURY**

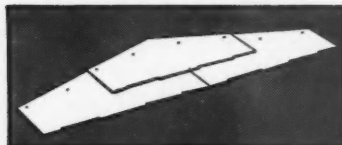
Full-head and knob pulls to match, in contrasting or matching colors.

*The most beautiful,  
low-cost Asbestos Roof  
ever developed...!*

*J-M American Colonial* shingles last 35 years PLUS\*... and they're easy to apply



**1. Applied like any Strip Shingle**—Each American Colonial is an asbestos strip equivalent to 5 ordinary shingles.



**2. Self-Spacing Feature Saves Time**—Second course shingles are lined up over the points on the preceding course.



**3. Automatic Alignment**—No chalk lines necessary, no delays measuring courses. Any roofer could actually lay American Colonial Shingles blindfolded.



**4. Easy to Handle**—Bundles weigh about the same as asphalt strips. Use only 80 pieces per square. Only 4 nails per shingle, in pre-punched holes.



**5. Easily Applied on Ridges**—Special Hip and Ridge shingles supplied in exactly the same textured grain, the same beautiful, weathered appearance and colors as the main roof shingles.

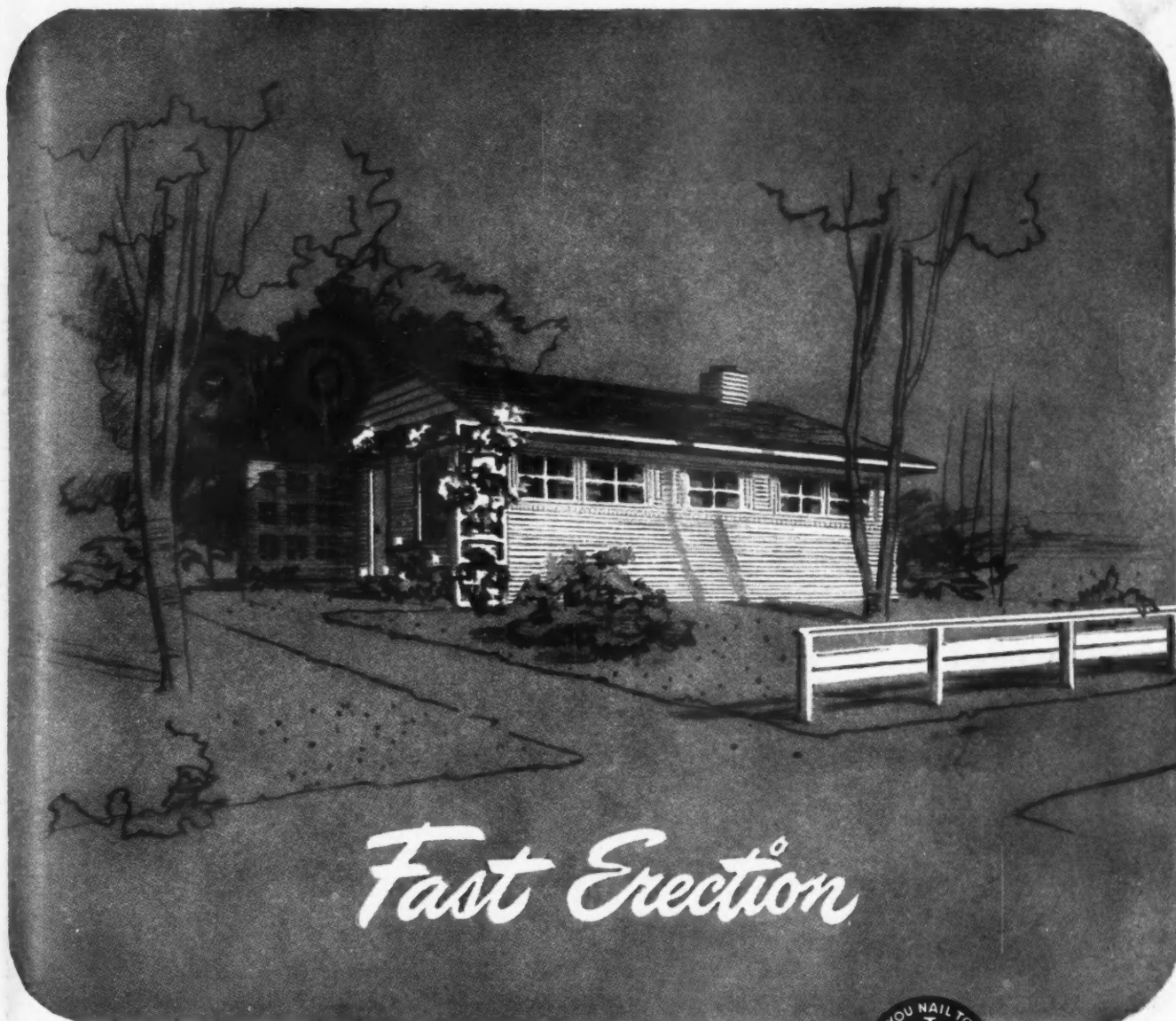


**6. Cutter Speeds Application**—When shingles must be cut to fit around valleys, dormers, along the rake, etc., a shingle cutter does the job easily, quickly—right on the roof.

**\*YES, 35 YEARS PLUS**—Thousands of J-M Asbestos Shingles have now been in service 35 years and more. They're still as fireproof, rotproof, and weatherproof as the day they were applied—show no signs of deterioration—no signs they won't last another 35 years or more! That's why we say American Colonial Asbestos Shingles last 35 years PLUS. Johns-Manville, Box 290, New York 16, N. Y.



**Johns-Manville**



## Fast Erection

Stran-Steel framing is a building product of Great Lakes Steel Corporation



Stran-Steel achieves its construction speed through unique engineering features. An efficient, simplified framing system, it requires only a few basic members and fittings. Members are delivered *pre-cut* to blueprint specifications, ready for assembly. Joining is accomplished with self-threading screws or by welding. Collaterals are attached simply by *nailing* them directly to the patented nailing groove, an exclusive feature of Stran-Steel. Joists and studs are ready-punched at convenient intervals to admit pipes and conduits. With the members in place, the punched holes are always in alignment.

Stran-Steel appeals to prospective owners, since the advantages of a durable, non-sagging, fire-resistant frame are almost self-apparent. It appeals to architects and builders because it provides the strength of steel without curtailing freedom of design. For complete information on Stran-Steel framing, see

Sweet's File, Architectural, Sweet's File for Builders, or the January Issue of Building Supply News.

BUILD WITH



### GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Dept. 30 • Penobscot Building • Detroit 26, Michigan  
UNIT OF NATIONAL STEEL CORPORATION

# EXCLUSIVE REASONS WHY ARCHITECTS AND BUILDERS FAVOR KIMSUL\*



"Kimmy"



**1** **MANY-LAYER CONSTRUCTION**—KIMSUL\* insulation is designed on a scientific many-layer principle...automatically provides uniform coverage over every square inch of insulated area.

**2** **COMPRESSED PACKAGE**—KIMSUL is delivered compressed to 1/5th installed length and packaged in easily-handled rolls. Requires 1/5th the storage space of non-compressed insulations.

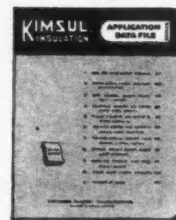
**3** **EXTRA WIDTH**—The KIMSUL blanket is made extra wide to provide *insulated* fastening edges... and to fill irregularities in framing spaces.

**4** **USE FOR CAULKING**—Trimmed pieces of KIMSUL are efficient for caulking heat-leaking cracks, such as those around windows and doors—reducing waste.

**5** **FLEXIBLE BLANKET**—KIMSUL can be easily tucked around obstructions, fitted into non-standard openings, pulled around corners.

*We are producing all the KIMSUL insulation we possibly can, but due to the great demand, distributors may have some difficulty in supplying KIMSUL dealers as promptly as usual.*

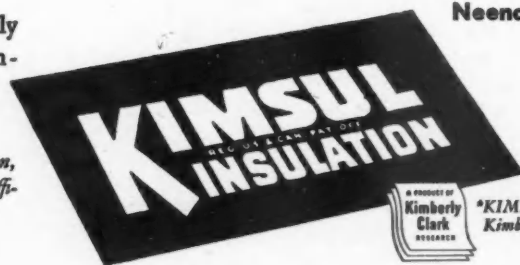
KIMSUL insulation is a prefabricated blanket, with uniform thickness built right into it in manufacture. It's simple for anyone to install... just cut to desired length, expand and fasten in place. It's fire-resistant, moisture-resistant, fungi-resistant—termite-proof. And it's lightweight, clean, and odorless... no irritating dust or splinters, easy on workmen's hands. KIMSUL is remarkably efficient for homes, commercial buildings, and industrial construction.



*For you—this helpful Application Data File. Detailed information on the best and easiest ways to insulate new or existing buildings with efficient, easy-to-use KIMSUL. A request on your letterhead will bring your copy.*

**KIMBERLY-CLARK CORPORATION**  
KIMSUL DIVISION

Neenah, Wisconsin



\*KIMSUL (trademark) means Kimberly-Clark insulation

EVAN  
becau  
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EVAN  
gallon  
and s  
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on th



**EVANS**  
*Automatic*  
OIL-BURNING  
**WATER  
HEATER**

**EVANS**  
*Automatic*  
OIL-BURNING  
**GRAVITY  
FURNACE**



# These **EVANS**

## *Products Help Sell Homes!*

EVANS oil-burning Water Heaters and Furnaces increase salability because they have eye-appeal and have been designed to meet modern needs with economy in first cost and operation. Whether your chief interest is design, construction, selling or financing, there's a profit advantage to you in using EVANS water heating and home heating products.

EVANS *automatic* oil-burning Water Heaters in 20, 30 and 45-gallon capacities cover the range of home, cottage, clinic building and similar requirements. Low cost operation and generous hot water supply combine to insure satisfied owners.

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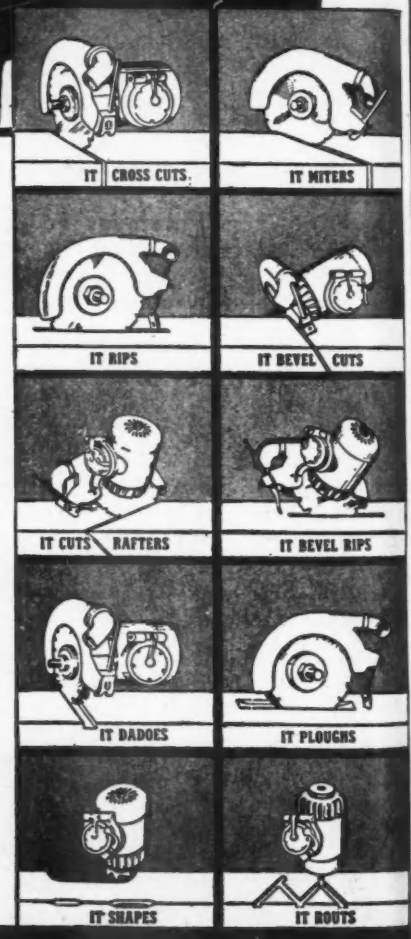
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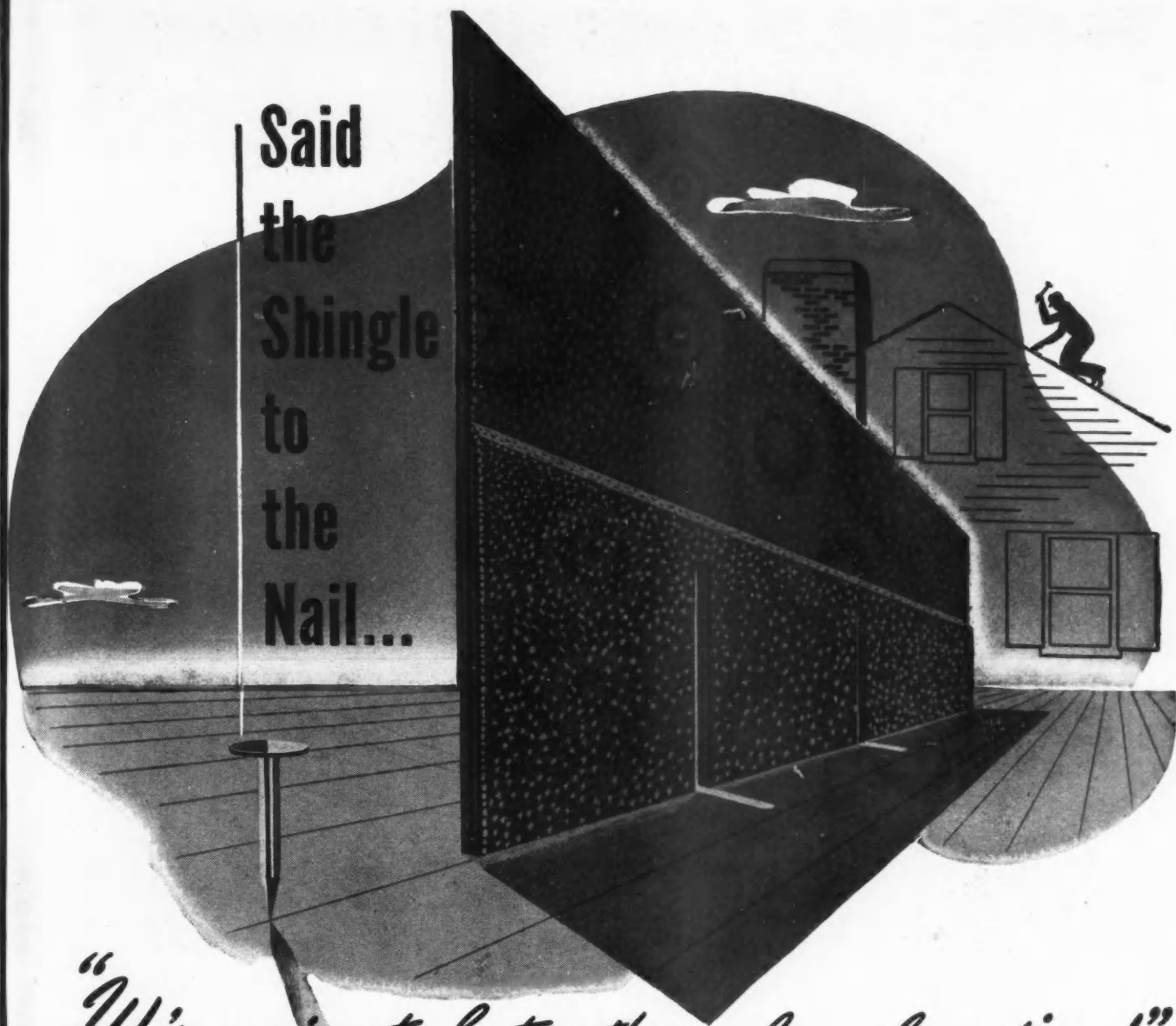
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Chances are they'll celebrate a silver wedding... since it's a Flintkote Thikbut Shingle speaking. These sturdy shingles are built for extra years of service.

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# AMERICAN BUILDER

L D I T O R I A L

## *Industry's Opportunity*

**E**ARLY in June—at the time this was written—there appeared to be no chance that S-866, the Taft-Ellender-Wagner bill, would pass the Senate during the current session of Congress. One of the reasons was Senator Taft's evident conviction that the bill was too long, too vague, and too controversial, and that it needed revision before being offered for a vote on the Senate floor. Taft was known late in May to be considering a move to introduce the bill on the Senate floor for discussion and recommitment, but not for a vote during the session ending on or before July 31.

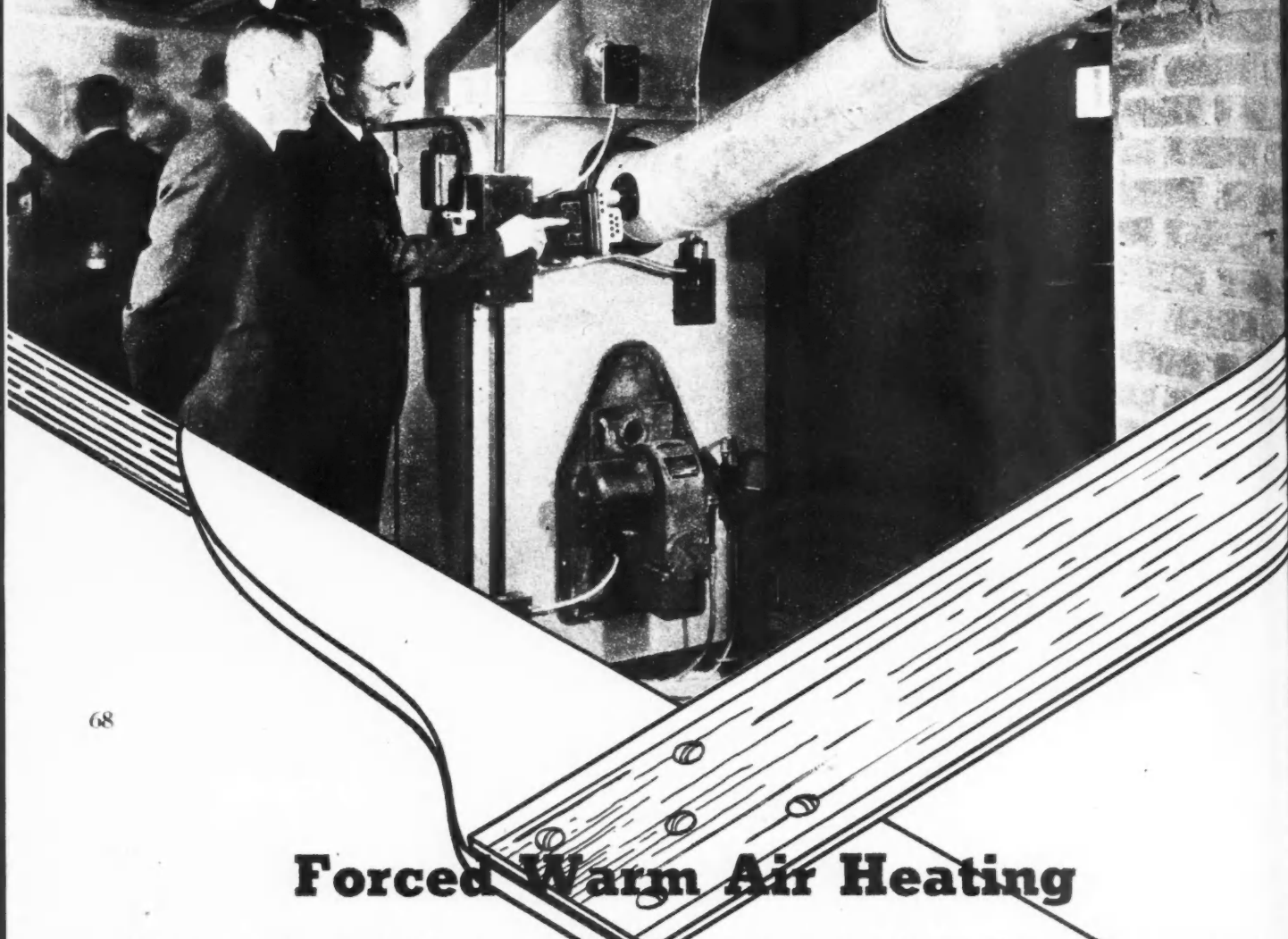
Another reason for believing that the bill would not be offered for passage in 1947 was a known doubt in the minds of the sponsors that it could be pushed through the Senate in view of the narrow margin (7 to 6) by which it squeezed through the Senate Banking and Currency Committee. A third reason was that it did not make good political sense to push a bill calling for an expenditure of seven billion dollars while Congress was curtailing the federal budget and decreasing income taxes in an attempt to cut government spending. Added to these political and economic considerations for not allowing the bill to be voted on by the Senate at this time is the certainty that it would lose in the House.

Assuming that the political winds do not change, and that Senator Taft does not change his mind before Congress adjourns for the year, two extremely important opportunities will be open to the home building industry for the first time since the beginning of the NHA-OPA drive to socialize home building through extended bureaucratic control. One of these is the opportunity to use the five months during which Congress will not be in session to institute objective studies of housing, marshal the facts from these studies, chart a course accordingly, and create an industry-wide front for the presentation of the facts and an industry program to Congress and to the public.

The other opportunity, based on a belief in Senator Taft's intellectual honesty, and his desire to be right in whatever he does or does not do regarding housing, is to enlist the Senator's aid in producing an industry-written bill, if the facts warrant a bill, or to present him with data making it economically and politically possible for him, or incumbent on him to oppose any kind of housing bill.

No matter what specific action is taken, there are now at least five months available for home builders to change from defensive tactics to offensive action against the opponents of free private enterprise in Congress. The 1948 session will be short due to the national conventions of the two major parties, and that might mean that the industry has a year and a half in which to work, before the T-E-W bill and other proposed housing legislation again will become an active threat. The safe course is to assume that there are only five months, the first breathing spell the industry has had, and to use that five months charting and implementing a positive course. Failure to do so inevitably will mean the ultimate passage of public housing and restrictive legislation far worse than anything proposed thus far.

# Engineered House Construction



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## Forced Warm Air Heating

**T**HIS, the second article of this series to appear in the *American Builder*, is on Forced Warm Air Heating, more commonly known as air conditioning. However, before proceeding with the subject, it might be better to clarify the term "Air Conditioning," as it is, no doubt, the most misused phrase in the heating industry today. The true definition of air conditioning is that any time the temperature or moisture content of air is either increased or decreased, or both, by a mechanical means, it is being conditioned. It is, therefore, possible to condition the air in a room or a building, by heating it with a fireplace, a stove, a radiant heater, etc. The contents of this article will, therefore, be confined to the subject, forced warm air heating.

There have been many misstatements made about forced warm air heating systems, some of which can be attributed to the lack of knowledge about the system, while others can be attributed to the desire to make a sale. One of the most glaring misstatements is that it will do a good job of cooling. It is a known fact that

in order to do a job of cooling, some means must be taken to cool the air. This can be done by moving the air across coils through which cold water or a refrigerant pass, or over ice, or through cold water sprays or some other method to remove the heat and humidity. It is not possible to do a job of cooling by the recirculation of the air, as one would be led to believe. Another thing is that it requires a greater movement of air to cool than it does to heat. This, then, necessitates the installation of larger ducts, registers, etc., than are required for heating. Based on this knowledge, no one should be led to believe that satisfactory cooling can be accomplished with a system designed for heating.

The forced warm air heating system is in reality a warm heating system in which air circulation is effected by means of a motor driven fan, rather than the difference in the weight between the heated air leaving the top of the casing and the cooled air entering the bottom, as is done in a gravity warm air system. There are, however, many advantages derived from forced warm air heating

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**In this second article on warm air heating the Anicka house used in last month's feature is again the basis for this engineering study**

**By J. L. Shank**  
Consulting Engineer

systems, and these will be discussed in this article.

It is not necessary to locate the furnace centrally to obtain good positive results. This in reality means that the furnace may be located in any out-of-the-way place in a basement, in a utility room on the same floor level as the living rooms, or even in the attic space above the living rooms.

The forced warm air furnace, like the gravity warm air furnace, is constructed of cast iron, usually made in sections assembled and cemented or bolted together on the job, or constructed of steel, which are made up with welded or riveted seams. The proper design of the furnace depends largely on the kind of fuel to be burned. A special unit is required for the fuel used, whether it be coal, oil or gas. Each type of fuel requires a distinct type of furnace for highest efficiency and economy.

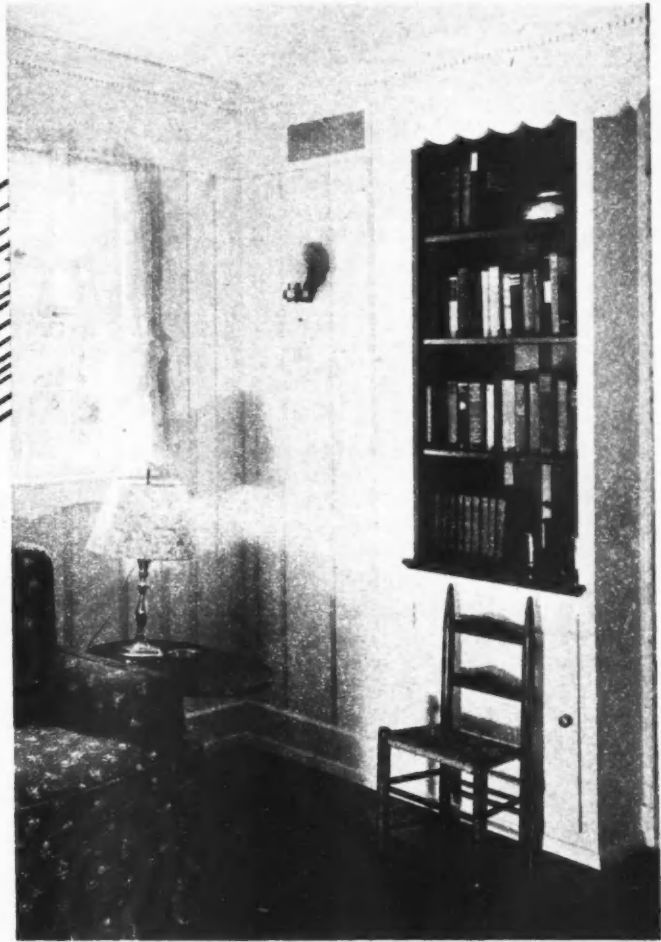
When burning bituminous coal, it is essential to have a large combustion space with easily accessible secondary radiator or flue travel, whereas anthracite coal or coke requires a large firebox capacity and a liberal secondary heating surface. If the furnace is stoker fired, an adequate firebox height is essential, as well as liberal heating surface.

In burning oil, the correct size combustion space is necessary to obtain the full efficiency from the fuel burned. In addition to this feature, the furnace should be designed with a long fire travel and have an extensive heating surface. By having these features incorporated into the furnace, a low stack temperature will be obtained which means a high overall efficiency in the heating unit.

The gas-burning unit should have a low flue resistance so that the noncombustible gases will vent off readily. In addition to the low flue resistance, the unit should have an extensive heating surface and be so designed as to have close contact between the combustion gases and the heating surface.

In summing up the furnaces for each type of fuel to be burned, it might be said that coal burning furnaces require large openings or flues for the passage of gases, whereas oil requires smaller passages, and gas very small passages. In lieu of what has been said previously about furnaces, it is well to select a unit which is distributed on a nationwide basis so that when repairs are required, they will be available with the least amount of inconvenience to the owner.

A good humidifier is essential in any warm air heating system, and a fair degree of humidity control can be obtained thru the use of an automatic humidifier usually supplied as standard equipment with any forced air furnace. To bear out the statement that a good humidifier is essential, it might be well to discuss climatic conditions. It is a known fact, that in a majority of localities in the United States, with the exception of a few days, the humidity is greater than that required for comfort conditions. This being true, why is the addition of moisture to the air required in a forced air heating system to maintain a good living condition? Cold air will retain very little moisture, whereas heated air will hold a considerable amount of moisture, depending, of course, on how warm it is heated. Consequently, if on a zero day the relative humidity outdoors is 40 per cent, which is considered comfortable, and it is brought indoors through natural



**PLACING of warm air registers has radically changed. Note the position of the one in the photograph above.**

infiltration or otherwise, and heated to 130 or say 160 degrees, the relative humidity would then be considerably less than 40 per cent, the comfort condition. This, then, would require the addition of moisture to obtain the desired comfort condition, which can be obtained only through the use of a good humidifier.

Filters in a warm air heating system are essential. They remove lint and dust which otherwise would be deposited on walls and furnishings. The filters should be of a permanent or throw-away type, and should be the products of a reputable manufacturer. They should also be examined every three months, and cleaned or replaced, depending on the type used.

The distribution piping system can be small and so installed as to provide full head room in all parts of the average basement, or be concealed if so desired. The system may be either the "trunk system," or an "individual duct system." In the event either of the systems is installed, the velocities should not exceed those set forth in the following chart.

**APPROXIMATE DESIGN VELOCITIES THROUGH DUCTS AND REGISTERS**

	Low Velocity System (fpm)	Medium Velocity System (fpm)	High Velocity System (fpm)
Main ducts.....	500	750	1000
Branch ducts.....	450	600	750
Wall Stacks.....	350	500	600
Baseboard registers (down deflecting)	300	400	500
Wall registers above 5'	500	550	600

By staying within these velocities, positive air circulation will be assured, and with proper balancing give a uniform temperature distribution.

The distribution of the air in a room greatly influences the comfort conditions of the room. It has been found that the type of register used as well as the location of the supply registers and return grilles affects these comfort conditions. It has also been found that changes in the type, air velocity and location of the supply register affect the room conditions more than the change in the location of the return grilles. It is, therefore, essential that the warm air registers be properly located, and when these warm air registers are placed in the baseboard, or just above the baseboard, they should be sized on a basis of not more than 300 feet per minute average face velocity. However, when wall registers are placed above the breathing line (register top 18 inches below ceiling), they shall be sized on a basis of 500 feet per minute minimum velocity, excepting bathrooms and toilets. Such registers should be horizontal, or a slightly downward direction flow. Where the distance from the register to the opposite side of the room is over 15 feet, a higher velocity should be used. It is also good practice to install the warm air registers in an inside wall, and to locate the return air grilles in an outside wall nearest the greatest exposure.

Volume dampers of the locking type should be placed in each warm air branch, from 6 to 12 inches from the main trunk. Splitter dampers may be necessary at any branch. Return air ducts as well as all outside air inlets should be similarly equipped.

No return air should be taken from baths, laboratories, kitchens, or garages. There should, however, be vent openings taken to the outside from these rooms and a

fresh air inlet connected to the heating unit to provide a sufficient amount of air to replace that vented out.

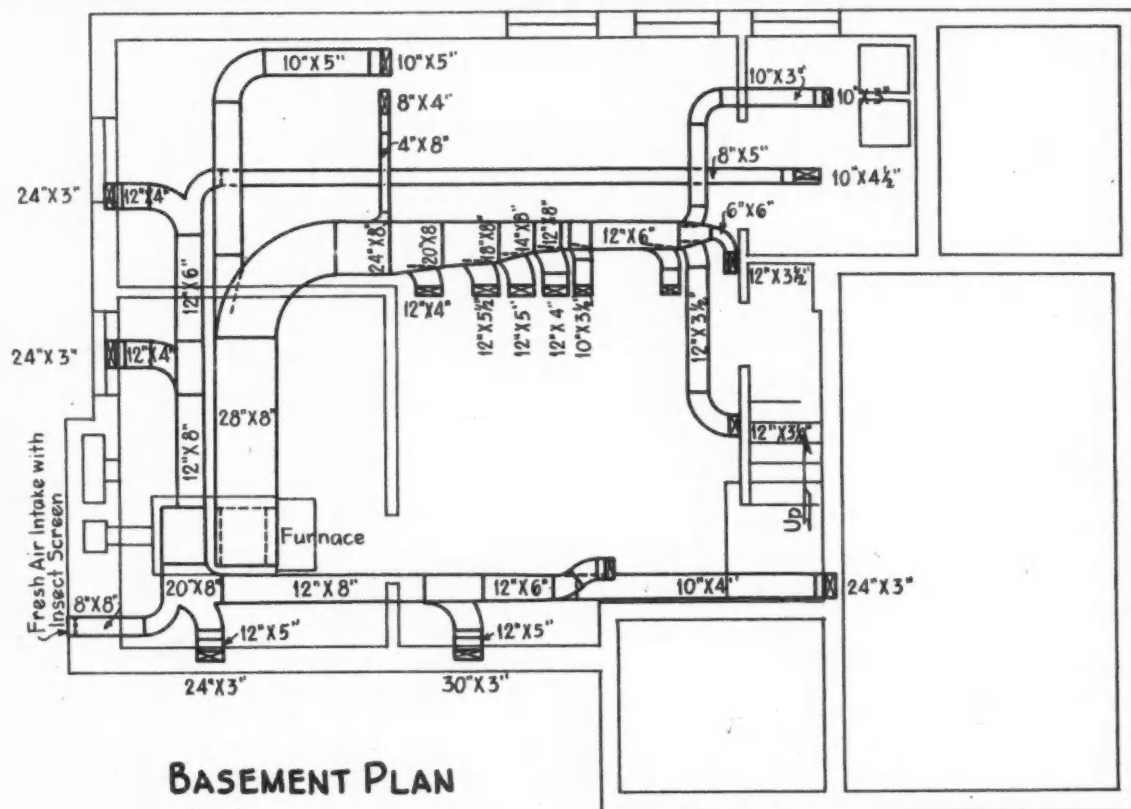
Where a rectangular duct trunk line is used, the rectangular ducts should be constructed of galvanized iron; up to 12 inches wide, use 28 gauge; to 18 inches wide, 26 gauge; to 30 inches wide, 24 gauge; and wider, 22 gauge. All ducts 24 inches or wider should be cross-broke on top and bottom and have standing seams or angle iron braces. All joints should be S, and drive strips, or locked. *No warm air duct, round or rectangular, should come in contact with masonry walls.* Insulate around warm air ducts through masonry walls with not less than 1/2 inch of insulation.

If the round pipe trunk line system is used, the round pipe trunk line should be constructed of galvanized iron; up to 14 inches, 26 gauge; 18 inches, 24 gauge; larger than 18 inches, 22 gauge. If slip joints are used, joints should be stripped with asbestos paper.

The wall stacks should be constructed of I.C. tin or 28 gauge galvanized iron. It is advisable to wrap all warm air stacks with one layer of 10 pound asbestos paper. All joints should be stripped with asbestos paper. Where stack heads, boots, or other fittings, either for warm air or return air, go through the first floor, all openings around such fittings should be filled with asbestos fiber or other noncombustible insulating materials to make this opening gas or dust tight. This is a requirement of fire underwriters.

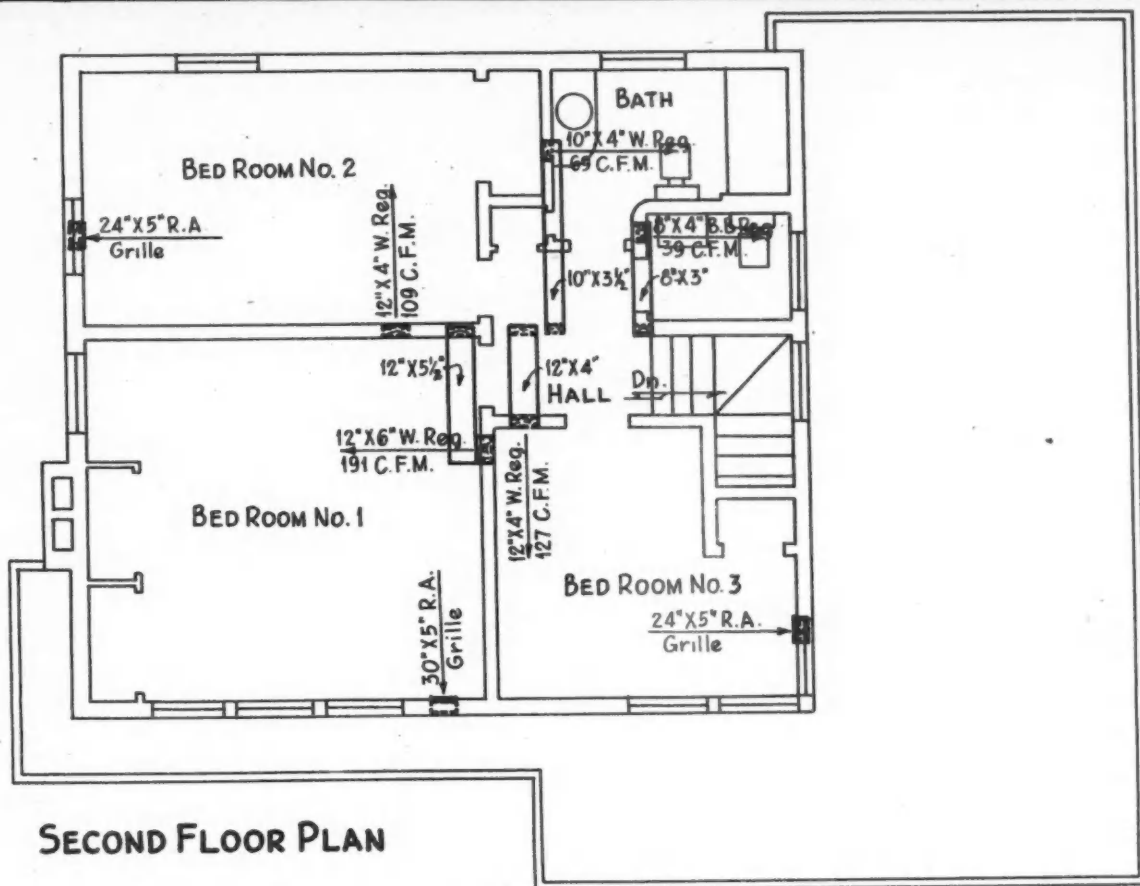
All exposed warm air ducts in attic space or under unexcavated and unheated sections should be insulated with not less than two layers of air cell asbestos paper or equal. In cold attic spaces more insulation is desirable.

All ducts should be securely suspended from an adjacent building member.



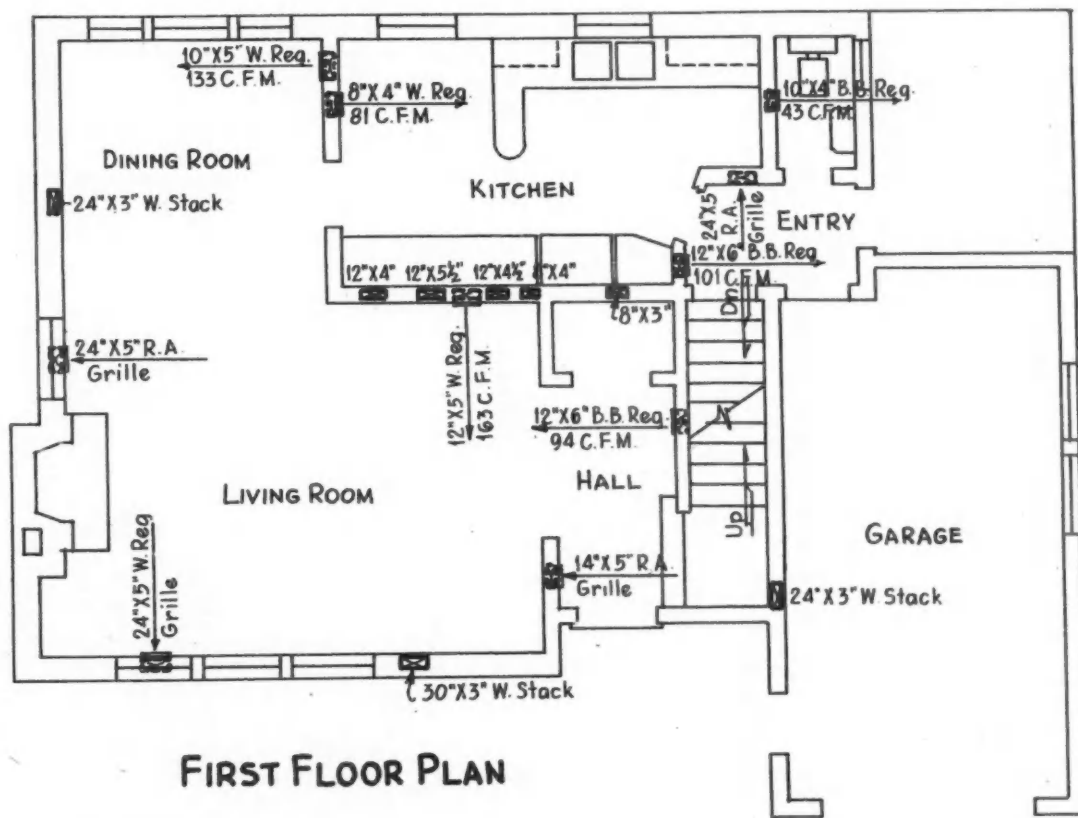
DETAIL showing location of furnace, chimney, arrangement of ducts and smoke pipe in basement.





### SECOND FLOOR PLAN

PLAN of second floor showing various rooms with location and size of warm air registers.



### FIRST FLOOR PLAN

FIRST floor plan revealing location and size of all warm air registers and cold air returns.

CALCULATION SHEET												
	FIRST FLOOR						SECOND FLOOR					
ROOMS	Reception Hall	Living Room	Dining Room	Kitchen	Lavatory	Entry	Bed Rm. 1	Bed Rm. 2	Bed Rm. 3	Bath	Lavatory	
Factors	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	Exposure B.T.U.	
Infiltration	Windows .72 Doors 1.42	48 2770	30 1730	34 1960	13 750	20 2270	68 3920	34 1960	51 2940	17 1100	17 900	
Total Exposed Wall	104	272	160	128	64	40	216	188	120	105	30	
Glass	1.13	36 3250	64 5790	39 3520	24 2160	7 175	21 1900	48 4340	24 2100	36 3250	12 1220	12 1080
Net Wall	.2	68 1085	208 3330	121 1935	104 1665	57 910	19 3040	170 2720	164 2520	84 1340	93 1765	18 200
Floor	.1				15 45	12 35						
Ceiling	.1				15 120	12 95	210 1680	150 1200	100 800	45 405	24 195	
Total B.T.U.	6695	11890	9455	5785	3000	7340	12660	7940	8330	4490	2545	
Approximate Length of Duct in Feet to Each Room	85	71	79	81	88	74	105	77	107	113	112	
Furnace Bonnet Temp.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	160°F.	
Temperature Drop Between Bonnet and Register	21¼°	17¾°	19¾°	20¼°	22°	18½°	25¼°	19¼°	20¾°	28¼°	28°	
Register Temperature	138¾°	142¾°	140¼°	139¾°	138°	141½°	133¾°	140¾°	133¼°	131¾°	132°	
C. F. M. Factors	.0142	.0137	.0140	.0146	.0143	.0137	.0151	.0138	.0152	.0154	.0154	
C. F. M. Room Requirement	94	163	133	81	43	101	191	109	127	69	39	
Location of W. A. Register	Baseboard	Wall	Wall	Wall	Baseboard	Baseboard	Wall	Wall	Wall	Wall	Baseboard	
W. A. Register Size	12" x 6"	12" x 5"	10" x 5"	8" x 4"	10" x 4"	12" x 6"	12" x 6"	12" x 4"	12" x 4"	10" x 4"	8" x 4"	
W. A. Stack Size	12" x 3½"	12" x 5"	10" x 5"	8" x 4"	10" x 3"	12" x 3½"	12" x 4"	12" x 4"	10" x 3½"	10" x 3½"	8" x 3"	
Return Air Grille Size	14" x 5"	24" x 5"	24" x 5"	None	None	24" x 5"	30" x 5"	24" x 5"	24" x 5"	None	None	
Return Air Stack Size	14" x 3"	24" x 3"	24" x 3"			24" x 3"	30" x 3"	24" x 3"	24" x 3"			

TABLE revealing how heat loss and B.T.U.'s were calculated for this heating installation.

All warm air registers and return air grilles should be of proper size and area and be the full width of the stack to which they are connected. In addition to this, they should be properly sealed to the stack head or register box, in such a manner as to prevent any leakage of air between the head and the registers.

All return air grilles should be located at the floor line.

Automatic controls are essential for the proper operation of a forced warm air heating system. Without them, air stratification, high bonnet temperatures, excessive temperatures, and heat overrun or lag probably will be encountered. The controls considered desirable for a forced warm air heating system are a room thermostat located in a living room where maximum fluctuation in temperature can be expected, in order to secure frequent operation of the fan. The thermostat location should not be on an outside wall, in a bedroom, bathroom, or sun room where it is affected by the direct radiant heat from the sun or from a fireplace, or by direct heat from any warm air duct, register or chimney. An adjustable automatic furnace switch should be placed in the bonnet of the furnace to start and stop the blower at predetermined temperatures. Under average conditions it should be set to start the blower at from 130 to 175 degrees F. and stop the blower about 25 to 30 degrees F. below the cut-in point. The lower settings are usually used for high side-wall register installations, and higher settings for baseboard register installations. For most satisfactory results, these settings should be as low as feasible. A protective high limit control should be wired in conjunction with any automatic temperature control and be located in the bonnet of the furnace also, to prevent overheating of the heater unit. This control is usually set at a temperature not higher than 250 degrees F., and the customary setting is not more than 30 degrees F. higher than the blower control setting.

The controls for the operation of a hand-fired unit should be those previously listed, plus an electric motor damper for opening and closing the furnace dampers.

The controls for a stoker-fired heating unit should consist of a room thermostat, blower operating control, limit control, and a hold fire control, such as a high-low stack

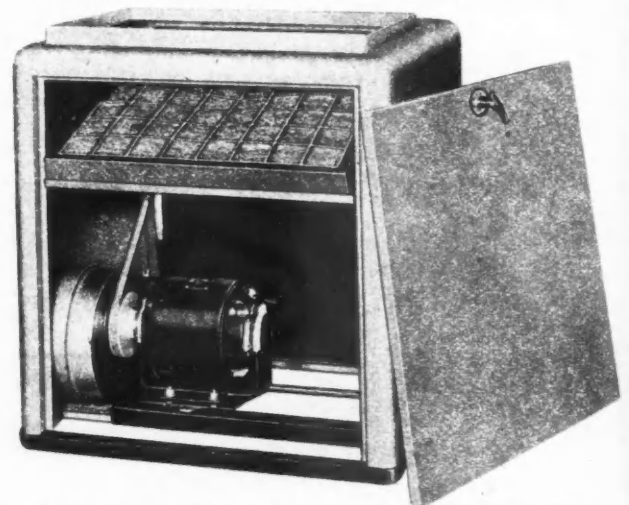
switch or time interval contactor. Where the heating unit is oil-fired, use a room thermostat, blower operating control, limit control, and protectorelay or other approved ignition control.

When a gas-fired heating unit is used, the controls should consist of a room thermostat, blower operating switch, limit control, and approved safety devices to close and vent the gas line.

While the above control systems are known as intermittent operation, tests have indicated that continuous fan operation has provided better operating results. This continuous fan operation can be accomplished with very nearly the same controls as are used for intermittent operation.

Zone control on large installations is advisable, and can be accomplished by having thermostats operate dampers in warm air ducts leading to various portions of the building.

The building used to demonstrate the correct design of the heating system is the same that was used for the gravity warm air heating system, illustrated in the June issue of the *American Builder*. The building is a standard



BLOWER and air filter for forced warm air heating plant.

two-story Colonial house designed by Walter T. Anicka, architect, Ann Arbor, Mich.

The system incorporated in the residence is designed for an outside temperature of 10 degrees F. below zero with an inside temperature of 70 degrees F. in all rooms except the bath, which is designed for an inside temperature of 80 degrees F.

The coefficients of heat transfer used are 0.20 B.T.U. for walls, 1.13 B.T.U. for glass, 0.72 B.T.U. per lineal foot of track, 0.10 B.T.U. for floors in the unexcavated portion of the building, and 0.10 B.T.U. for exposed ceilings. The method of calculation of the heat loss is set



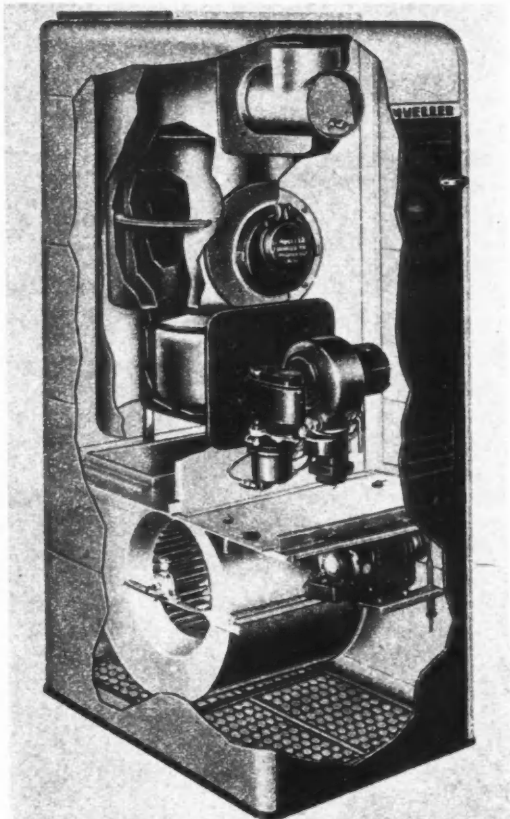
GOOD duct work is essential.

The size of the furnace was then determined by totalling the B.T.U. heat loss of the building, 80,030 B.T.U., plus the 27,205 B.T.U. required to heat the incoming outside air, the outside air replacing that vented out of the kitchen, bath, and toilet rooms where no air is recirculated. The furnace size was then determined to be a 107,235 B.T.U. per hour unit.

After determining the size of the furnace, it was then necessary to select the correct size blower. This was done by totalling the c.f.m. supplied to each room, which totalled 1150 c.f.m. The next step was to determine the resistance against which the blower was to operate. This was accomplished by determining and totalling the resistance on the supply side of the system which was 0.025 feet, the resistance on the return side of the system, which was 0.025 feet, the resistance through the furnace unit, casing, and hood, which was estimated to be 0.05 feet, the resistance through the filters of 0.10 feet, the resistance through the warm air registers of 0.03 feet, and through the return air grilles at 0.02 feet, the total resistance against the blower thus being 0.25 feet.

In summing up the results of the system as designed, it may be said that it is a good competitive installation. As a matter of fact, it might be said that certain portions of the system are not equal to minimum design requirements, requisite of a good installation. However, the system will be quite satisfactory and very economical to operate, providing good materials are used and are supported by good workmanship.

The information used in figuring and designing this forced warm air heating system was obtained from the Technical Code for the Design and Installation of Mechanical Warm Air Heating Systems, issued by the National Warm Air Heating and Air Conditioning Association, and the Guide, published by the American Society of Heating and Ventilating Engineers.



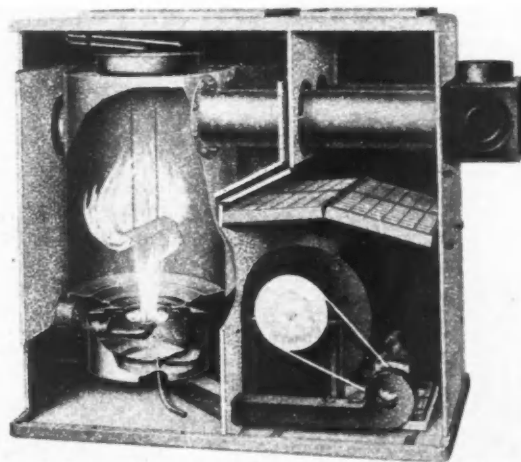
CUT-AWAY view of typical forced warm air heating plant, oil-fired.

forth in the calculation chart, which when totalled gives the total B.T.U. heat loss in each room.

After the heat loss was calculated, the warm air registers and return air grilles were located. Then a sketch of the duct layout was made, connecting all registers and grilles to the heating unit. The equivalent length of duct for each register was calculated, allowing 10 diameters of straight pipe as the equivalent for each 90 degree elbow having an inner radius not less than the depth of the rectangular pipe.

A bonnet furnace air temperature of 160 degrees F. was then selected. According to the standards of good practice the bonnet furnace air temperature should be between 145 and 165 degrees F. The lower the value, the larger the number of air recirculations. However, in this particular job, with 160 degree F. bonnet furnace air temperature, the air change is at a maximum of eight changes per hour. The number of air recirculations should range from three to eight per hour.

The temperature of the air at each register was then determined by taking a temperature loss of the duct at 0.25 degrees per lineal foot from the furnace to the register. After determining the air temperature at each register the c.f.m. and size of the register and ducts were determined.



ANOTHER type of forced warm air cabinet heating plant, showing burner, filters and blower.

# Modular Coordination— Another Progressive Step

**It represents fundamental improvement in building design and construction; opens way to improvements in quality and to reduction of cost**

**I**N recent years two words—*modular coordination*—have become increasingly familiar to a broad segment of the building industry and promise to become more so because of plans now under way for the use of more efficient building techniques in construction—techniques based on coordinated dimensions of building equipment, with correlated dimensions in the design of the building itself.

Reduced to simplest terms, *modular coordination* may be defined as the dimensioning of building units so that they will fit together, and the use of building dimensions consistent with such coordinated sizes. It involves:

1. *Sizes* of building materials and equipment which permit their field assembly with a minimum of cutting and fitting.
2. *Details* which show the assembly of these sizes, and
3. *Building plans* which correlate building dimensions with the above *sizes* and *details*.

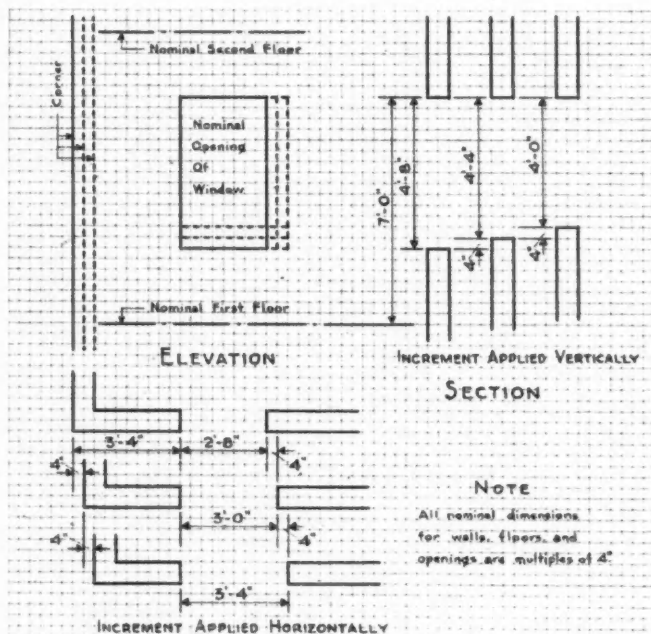
This definition, however, fails to indicate the years of painstaking research and arduous work which have followed the development of the basis for modular coordination by the late Albert Farwell Bemis. Actually, it was not until 1939 that an industry-wide approach to the problem was initiated, though the economies and simplifications obtainable through the dimensional coordination of materials of construction have long been established. The undertaking was started in that year following a general conference called by the American Standards

Association, which unanimously recommended that the ASA organize a project, since then known as *Project A62*, for the coordination of building materials and equipment.

The sectional committee working on the project, as is customary with committees under the procedure of the ASA, is composed of 59 members broadly representative of the construction industry and related interests. As the basis for its work, the committee adopted the principle of modular design earlier evolved by Mr. Bemis, and continued after his death by the Modular Service Association. This Association, an organization set up by Mr. Bemis' heirs, cooperates closely with the ASA committee and furnishes technical and secretarial service for the benefit of the sectional committee and its various study committees. The project has the sponsorship of the American Institute of Architects and The Producers' Council, Incorporated.

The determination of the size of the module involved extensive research and study. In general, too large a module would restrict the flexibility of building layout and of sizes of products so as to make its application impracticable. On the other hand, the larger the module, the greater would be the simplification and economy of standardization. A careful balance between these two considerations was required.

An intensive investigation, which included the study of plans for many types of buildings, including small



SKETCHES showing 4 in. increment applied to building dimensions.

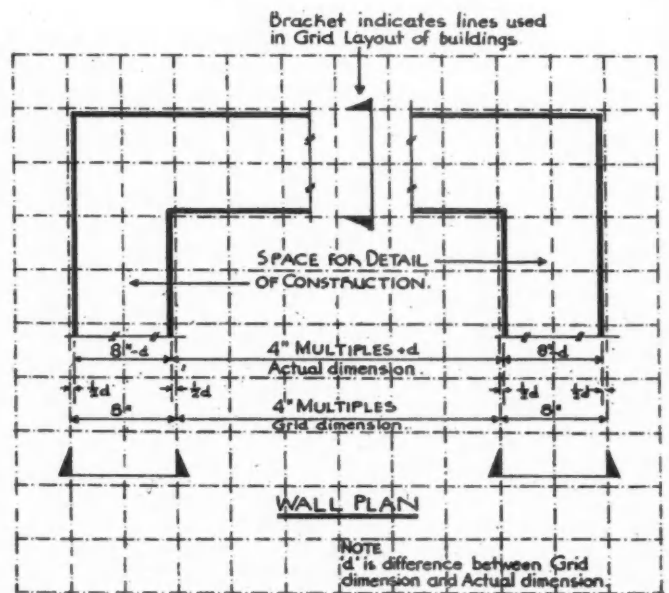


FIG. 1

MODULAR detail shows assembly detail referenced to standard grid.

houses, for which the space requirements are particularly exacting, showed that 4 inch flexibility is adequate. The study indicated that any appreciable increase of the module over 4 inches would introduce limitations that would be uneconomical for some types of buildings.

**Building Products on All Important Factor**

The problem was also investigated from another point of view. The adoption of a standard module would of necessity entail the changing of the present sizes of many building products. Such changes are expensive and time-consuming. Consequently, it was highly important to select a module that would reduce these changes to a minimum.

For this purpose a survey of all existing building products was made to determine the size of increment that predominated. The survey took into consideration many features of current building practice, such as the 16 inch spacing of wood studs, as well as the sizes of materials. The various items were weighted according to their relative importance and use. The survey showed that 2 inches or 4 inches were the most widely used increments, with 3 inches the next choice, but used less than half as much. Thus, in substance, the entire investigation demonstrated conclusively that the optimum size for a standard, universal module is four inches.

Modular coordination in building is an accomplished fact, and its use is constantly expanding. In the relatively short space of eight years—including the war years—the committees of the ASA Project A62 have made astonishing progress in resolving the dimensional chaos which hitherto prevailed in the industry. The basis for dimensional coordination—the continuous three-dimensional grid, spaced on the 4-inch module—has been developed and proved in practice. Stock sizes conforming to the modular principle have been adopted for many important materials and are generally becoming available.

Though the progress has been great, Myron W. Adams of Modular Service Association and secretary of Sectional Committee A62 told *American Builder*: "There is still much to be done. The evolution of coordination is necessarily a continuous process, requiring constant research and the widest possible exchange of data between architects, builders and manufacturers of building products. The final and correct answers to all the questions cannot be reached by small committees of experts; they must be proved by actual experience in the field."

**Economy and Better Building Quality Assured**

"The integration of all the materials which go into a building can be achieved only by full concurrence on the part of all manufacturers concerned," Mr. Adams continued. "When differences of opinions arise, as they will inevitably, they are best reconciled by a free and uninhibited exchange of views.

"The fundamental purposes of coordination are economy and better building quality. Their ultimate accomplishment seems assured, but in the present era of extremely high building costs the need for immediate economy is most urgent. The realization of economies possible from modular design, in our time, will demand more perfect liaison between all segments of the industry."

As a special aid in the application of modular coordination, particularly to architects, builders, engineers, designers and draftsmen, and as a complete presentation of the principles and methods to be followed in using the 4-inch module in the coordination of building dimensions, the Modular Service Association late last year published a comprehensive volume on the subject, the *A62 Guide for Modular Coordination*. Written by Mr. Adams and Prentice Bradley, this fully illustrated Guide thoroughly covers modular coordination and is already receiving

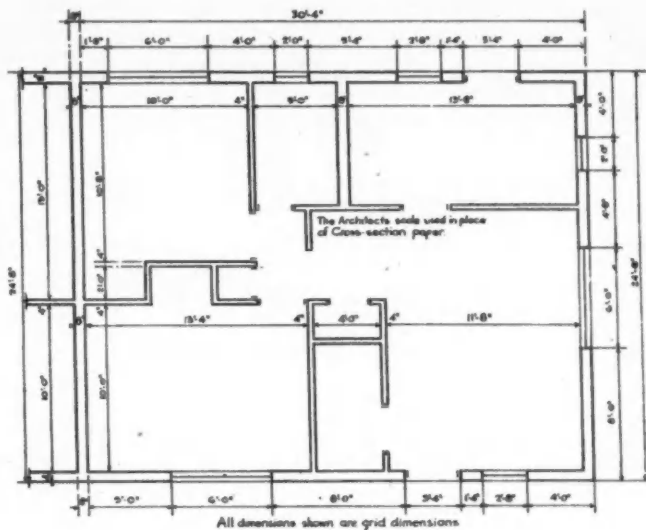


FIG. 2

THIS plan is typical building layout using only grid dimensions.

merited attention of building professionals, ranging from architects and builders to building product manufacturers.

Modular coordination standardizes the parts without standardizing the building; the only restriction is the use of the small convenient layout unit. Advantages of the system are many and varied, although the advantages for

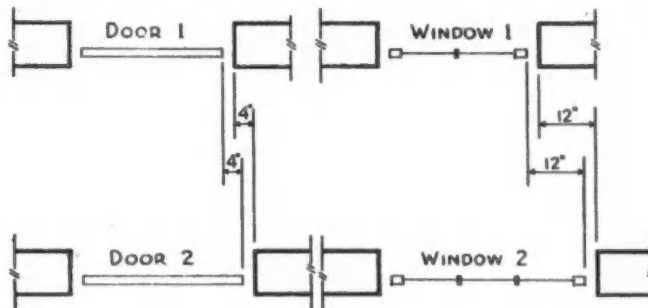


FIG. 3

DRAWING reveals freedom of layout permitted by 4 in. flexibility.

various producing industries differ widely. No two are exactly alike. Some of these are:

Elimination of duplicating or overlapping stock sizes. Nationwide standards instead of sizes fixed by local custom in different sections of the country.

Solution of standardization problems which has previously been sought without success.

Stimulated demand for stock sizes in preference to special sizes, as a result of their more convenient use and economical field erection.

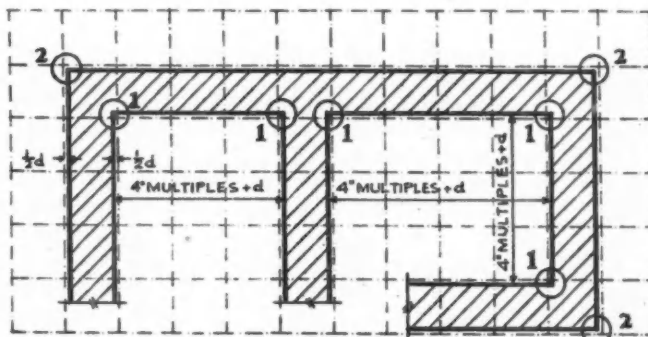


FIG. 4

SINGLE modular detail will apply to inside and outside corners.

Lower costs of manufacturing against stock as compared with the custom manufacture of special details and sizes.

Improved precision and uniformity of quality that result from improved manufacturing processes.

A market for new building materials where the cost of special detailing or field cutting would be prohibitive.

Help for the manufacturer in controlling the application of his products and avoiding complaints that arise from faulty installation.

#### Advantages to Architect and Builder Are Numerous

Among the advantages to the architect and builder who use the standard method of coordination are:

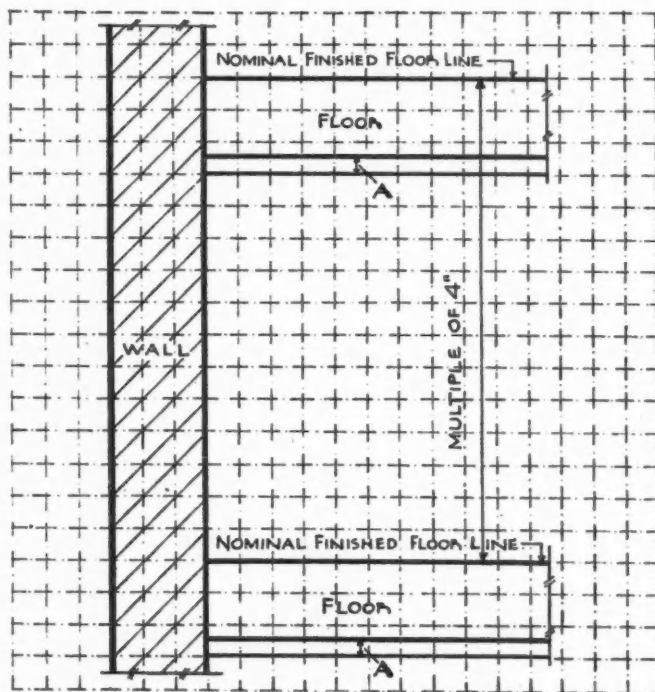
A simplified method of making building layout which appreciably reduces drafting time.

The possibility of changing specifications and substituting alternate materials and construction without the necessity of redrawing layouts.

The elimination of the designing and the repetitive drawing of structural assembly details.

The better availability of many building products through their improved standardization with a consequent simplification in specifications.

The replacing of details by stock items, so that the



SECTION FIG. 5

FLOOR layout. "A" is best location for dimensional adjustment.

redesigning and detailing for these items may be simplified.

Easier supervision of the job as a result of standard building-practice.

The unity of design that results from the application of a single dimensional unit, both vertically and horizontally, to the building structure, openings and finish, and to various exterior features such as garden walls.

Among the additional benefits the builder receives from coordination are:

The improved clarity and accuracy of standard coordinated assembly details.

The simplification of estimating which will be made less laborious and more accurate by the elimination of fractional inches and probably by the tabulation of nominal areas.

Lower cost of field erection by the reduction of field cutting and fitting.

The possibility of developing uniform building practice with better control of field operations.

In its monthly publication, Grid Lines, the Modular

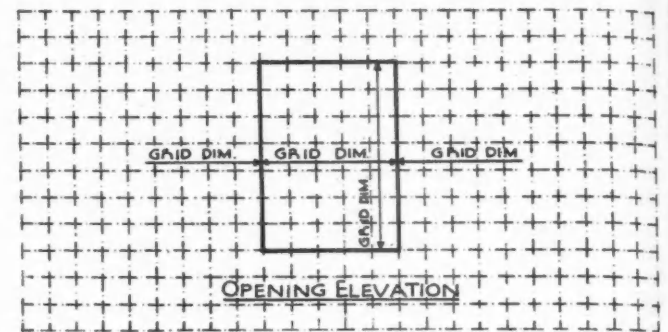


FIG. 6

DIAGRAM shows rectangle formed by grid lines for grid opening.

Service Association located at 110 Arlington Street, Boston 16, Mass., carries listings of manufacturers making modular products. They are:

#### Clay Products

The Structural Clay Products Institute reports that their following member manufacturers have advised that they are converting to modular sizes:—

- Acme Brick Co., Fort Worth, Texas.
- Alton Brick Co., St. Louis, Mo.
- The Belden Brick Co., Canton 1, Ohio.
- Berea Tile Co., Berea, Ohio.
- Binghamton Brick Co., Binghamton, N.Y.
- Building Supplies, Inc., Spokane 1, Wash.
- Cannon & Co., Sacramento 4, Calif.
- Carlisle Brick & Tile Co., Carlisle, Iowa.
- Charleston Clay Products Co., Charleston 22, W. Va.
- Chattahoochee Brick Co., Chattahoochee, Ga.
- Victor Cushwa & Sons, Williamsport, Md.
- Des Moines Clay Co., Des Moines, Iowa.
- Elgin Standard Brick Mfg. Co., Elgin, Texas.
- The General Clay Products Co., Columbus 15, Ohio.
- General Shale Products Corp., Johnson City, Tenn.
- Gladding, McBean & Co., Los Angeles 26, Calif.
- Hampshire Brick Co., Holyoke, Mass.
- Hanley Co., Inc., New York City, N.Y.
- Higginsville Brick & Tile Co., Higginsville, Mo.
- Jackson Brick & Clay Products, Corinth, Mississippi.
- Kraftile Co., Niles, Calif.
- Lincoln Brick Co., Grand Rapids, Mich.
- McNess Kittanning Co., Kittanning, Penna.
- Malvern Brick & Tile Co., Malvern, Ark.
- Mason City Brick & Tile Co., Mason City, Iowa.
- Metropolitan Paving Brick Co., Canton, Ohio.
- National Fireproofing Corp., Pittsburgh 12, Penna.
- New England Brick Co., Boston, Mass.
- Norwood Brick Co., Lillington, N. Car.
- Oskaloosa Clay Products Co., Inc., Oskaloosa, Iowa.
- Ottumwa Brick & Tile Co., Ottumwa, Iowa.
- Rich Square Brick Co., Rich Square, N. Car.
- Roanoke-Webster Brick Co., Roanoke, Va.
- Standard Brick & Tile Co., Macon, Ga.
- Stark Brick Co., Canton, Ohio.
- Stockton Brick & Tile Co., Stockton, Calif.
- Summit Pressed Brick & Tile Co., Pueblo, Colo.
- Western Brick Co., Danville, Ill.

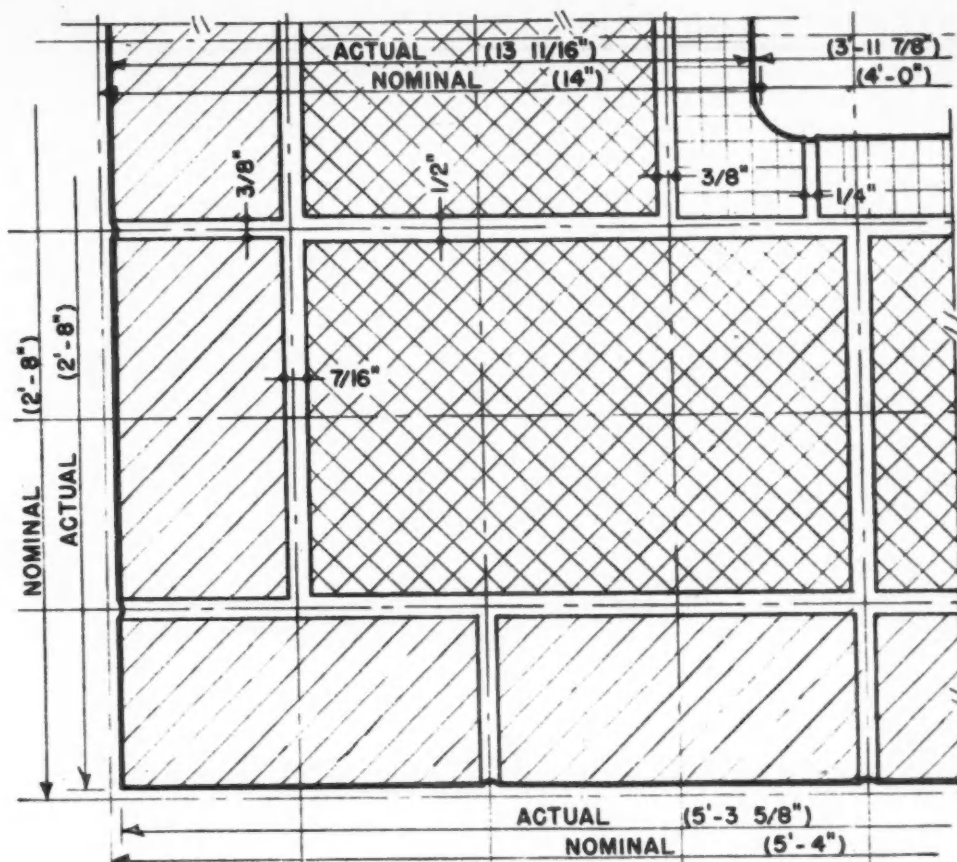


Fig. 7

THE modular detail shown in the illustration (right, above) gives the grid position for the masonry units at a wall corner. With the units thus referenced to the grid, nominal (joint center-line) dimensions can be used on small scale drawings as shown in detail immediately to the right. This avoids the unwieldy and error-producing fractions which result from dimensions taken to the actual masonry faces (far right).

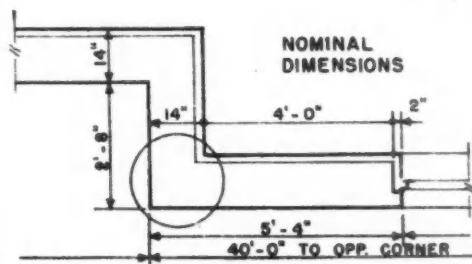


Fig. 8

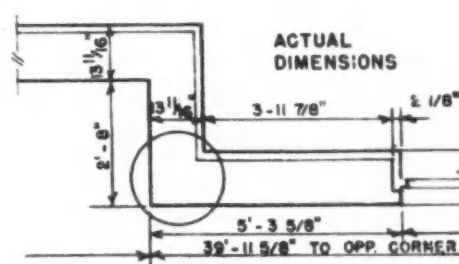


Fig. 9

#### Wood Windows and Frames

National Door Manufacturers Association advises that the following member manufacturers are able to furnish modular wood window frames and sash in any of the standard stock sizes shown in manual WSS-45.

Andersen Corp. (Frames only), Bayport, Minn.  
 Anson & Gilkey Co., Merrill, Wis.  
 Carr, Adams & Collier Co., Dubuque, Iowa.  
 Farley & Loetscher Mfg. Co., Dubuque, Iowa.  
 Hurd Millwork Corp., Medford, Wis.  
 Huttig Mfg. Co., Muscatine, Iowa.  
 Ideal Co., Waco, Texas.  
 The Long-Bell Lumber Co., Kansas City, Mo.  
 Missoula White Pine Sash Co., Missoula, Mont.  
 Morgan Co., Oshkosh, Wis.  
 Northern Sash & Door Co., Hawkins, Wis.  
 Roach & Musser Co., Muscatine, Iowa.  
 Rock Island Millwork Co., Rock Island, Ill.  
 Rockwell Mfg. Co., Randolph, Wis.  
 Semling-Menke Co., Merrill, Wis.  
 George Silbernagel & Sons Co., Wausau, Wis.  
 White Pine Sash Co., Spokane, Wash.

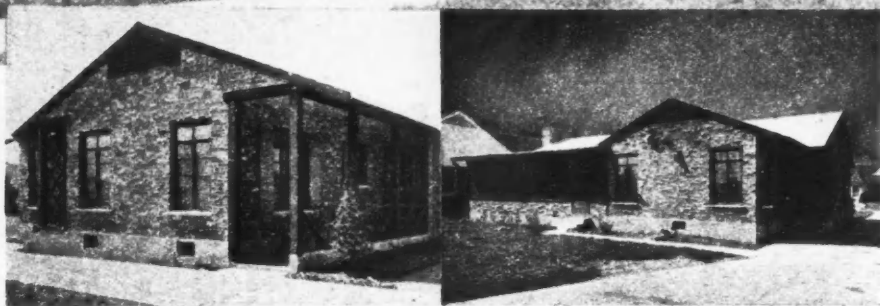
#### Metal Windows

The Metal Window Institute producers are:  
 The William Bayley Co., Springfield, Ohio.

Bliss Steel Products Corp., East Syracuse, N.Y.  
 The Bogert & Carlough Co., Paterson, N.J.  
 Ceco Steel Products Corp., Cicero, Ill.  
 Crittall-Federal, Inc., Waukesha, Wis.  
 Dayton Metal Products Co., Dayton, Ohio.  
 Detroit Steel Products Co., Detroit, Mich.  
 The Donley Brothers Co., Cleveland, Ohio.  
 Michael Flynn Mfg. Co., Philadelphia, Penna.  
 Gabriel Steel Co., Detroit, Mich.  
 Hope's Windows, Inc., Jamestown, N.Y.  
 Kewanee Mfg. Co., Kewanee, Ill.  
 Mesker Brothers, St. Louis, Mo.  
 New Monarch Mach. & Stamp Co., Des Moines, Iowa.  
 S. H. Pomeroy Co., New York, N.Y.  
 J. S. Thorn Co., Philadelphia, Pa.  
 Truscon Steel Co., Youngstown, Ohio.  
 Vento Steel Products Co., Inc., Buffalo, N.Y.

#### Pacific Coast Members

Ceco Steel Products Corp., Los Angeles, Calif.  
 Detroit Steel Products Co., Los Angeles, Calif.  
 Druwhit Metal Products, Los Angeles, Calif.  
 Fentron Steel Works, Seattle, Wash.  
 Michel & Pfeffer Iron Works, Inc., San Francisco, Calif.  
 Soule Steele Co., San Francisco and Los Angeles.  
 Truscon Steel Co., San Francisco and Los Angeles.



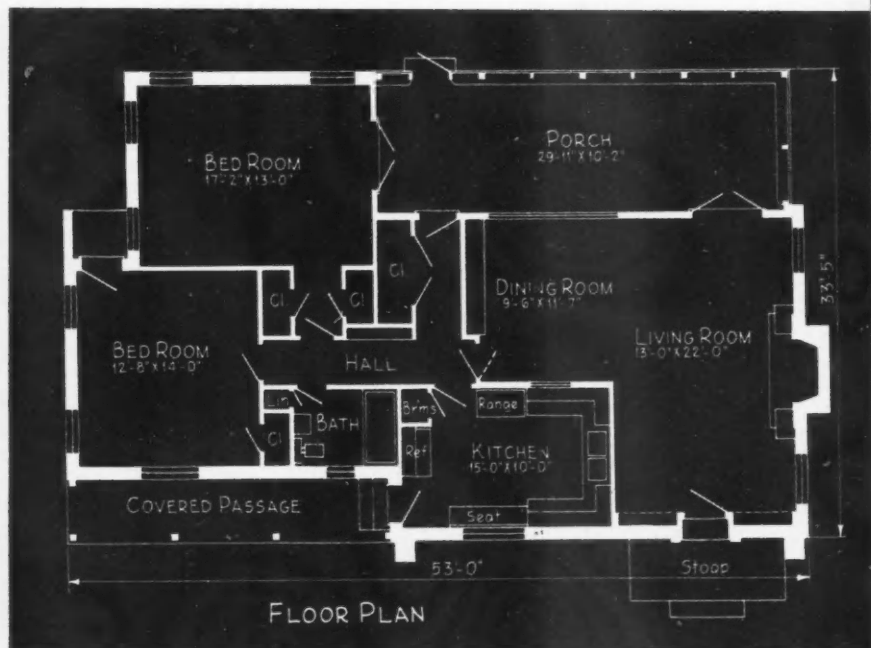
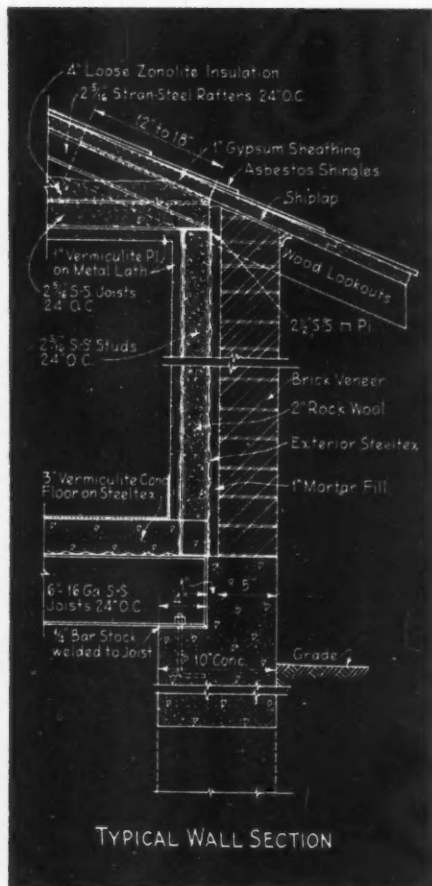
STREET side of house is shown at top of page. Left, above, covered approach to kitchen.

## Engineered S

**Good selection and use of materials build fireproof house at small extra cost**

**A** CONVENTIONAL modern house with steel framing and fireproof walls was completed recently in Dallas, Texas. Built by John W. Taylor, contractor, for Mr. and Mrs. Cooper Drury, the home was designed by Harwood K. Smith, Dallas architect known for smart home design.

All framing, including floor joists and roof trusses, is of Stran-Steel. The six-inch floor joists, set on a conventional concrete foundation, support the floor which consists of Steeltex floor lath covered with three inches of Zonolite insulating concrete with a monolithic cement finish on top. Above



AT LEFT is detail on this type of fireproof wall construction for homes. At right is the floor plan with room dimensions.





TWO VIEWS in living-dining room. Built-in shelves and cabinets are on each side of front entrance.

## Steel Frame and Wall Construction

this in all rooms except the bathrooms and kitchen, the floor finish is asphalt tile. Three-sixteenth-inch Armstrong battleship linoleum was used in the kitchen, and in the bathroom ceramic tile was used for the floor as well as the walls. The 10x30-foot porch floor is covered with 3x7x1-inch quarry tile.

For the exterior wall, the conventional 2 5/16-inch steel studs were first covered with Steeltex exterior lath. The brick were set one inch away from the face of the Steeltex and the intervening space filled with brick mortar. This results in a practically solid wall.

Walls are insulated throughout with two-inch USG Fiberglas attached to the steel studs with special metal insulation holding clips made of spring steel. These were designed by Mr. Drury who has applied for a patent on the item which is to be known as "GripClip." After attaching Bar-X metal lath, the interior walls and ceilings were plastered with one inch of Zonolite insulating plaster for the scratch and brown coat, with a coat of Keene cement sand finish.

The Stran-Steel truss roof requires no bearing partitions so interior partitions are 2 1/4-inch solid plaster with Zonolite aggregate for the undercoats and finish coat the same as the outside walls.

Ceilings in the house are insulated with four inches of Zonolite. In addition to this protection against excessive heat, a 42-inch attic fan pro-

vides for adequate air movement through the house in hot weather.

The roof is covered with J-M asbestos cement shingles over one-inch gypsum sheathing. The lookouts for roof overhang around the house are of 4x4-inch redwood, fastened to the steel roof truss members, which are two feet on center. Windows are Fenestra steel casements.

Interior woodwork is gum in natural finish. Built-in cabinets and shelves, which are numerous throughout the entire house, are of white pine, finished to match the gum woodwork.

The house is heated with forced warm air provided by a 90,000 BTU Janitrol unit, automatically controlled.

This house is located on a 70x160-foot lot, facing north. The garage, situated at the rear of the lot, is also of Stran-Steel framing set on a solid concrete slab 22x30 feet. A portion of the garage structure has been partitioned off as a separate guest room equipped with kitchenette and bath.

The fire insurance rate on the type of construction used in this house is extremely low. On the same lot with ordinary city fire protection, the insurance rate for a wood framed house with brick veneer would be 29 cents per \$100. The extended coverage rate would be 42 cents. With the steel framing and type of wall construction in this house, the final rate with all debits and credits is six cents per \$100 on fire and four cents on extended coverage.



THE 10x30-foot porch can be reached from living room through French doors.



KITCHEN cabinets are natural wood finish.

# CONCRETE

## Used in a New Way



A TYPICAL HOUSE in the North Shore Acre development. Except for the roof and ceiling, the entire house is of fireproof construction.

**A** GROUP of houses, whose basic wall structure is of poured concrete, is now in process of construction in a development called North Shore Acres, located in Glen Head, Long Island.

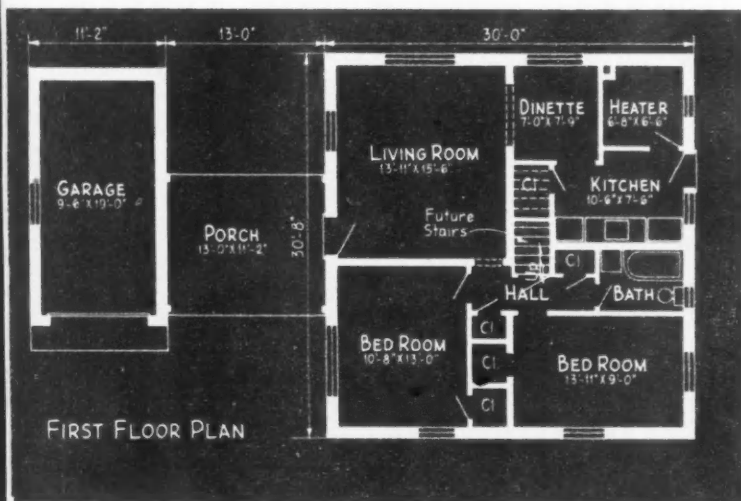
Pat Callan, of Callan Bros., Long Island builders, has designed a steel wall form which, with the aid of power equipment, permits him to build a semi-fireproof house with speed and accuracy. The exterior forms extend the full length of the outside wall, the interior forms are of room size. They are built up of 3/16-inch thick steel sheets with horizontal and vertical reinforcing members placed on the outside face.

After the concrete floor slabs has been laid, these forms are then swung into position by a crane with a 60 foot boom. The various sections are then locked together by a device placed on the four corners of each form. Five and ten gauge wire mesh is then placed in the forms for reinforcing. Two 5/8-inch steel bars are placed over door and window openings. Door bucks, windows, electrical conduits and outlets are all bolted in their respective places.

**Room size steel forms for monolithic poured concrete walls and partitions are being employed by Callan Brothers, Long Island builders, in the North Shore Acres development under way at Glen Head, Long Island.**

The crane is also used to swing a large bucket over the forms which funnels the concrete into them. One monolithic pour of 1-2 1/2-2 1/2 concrete mix is made from floor to ceiling height. It is then vibrated internally and externally with Black & Decker vibrators, and allowed to set for 24 hours. The exterior walls are four inches thick with the interior partitions being reduced to three inches. The forms are then lifted clear of the walls and moved over to the next operation.

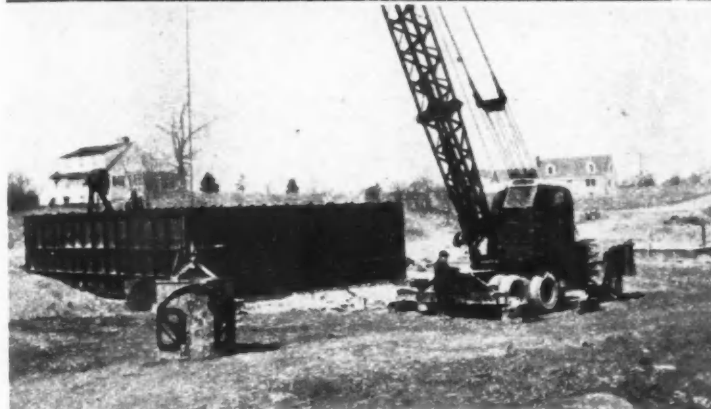
One of the features of this method, in addition to the speed of the operation, is the extremely smooth surface that is obtained on the face of the concrete after the forms have been removed. This permits the builder to eliminate the process of plastering and to



PLAN of typical house. A number of variations have been used.



PARTIAL VIEW of the development in an incomplete state.



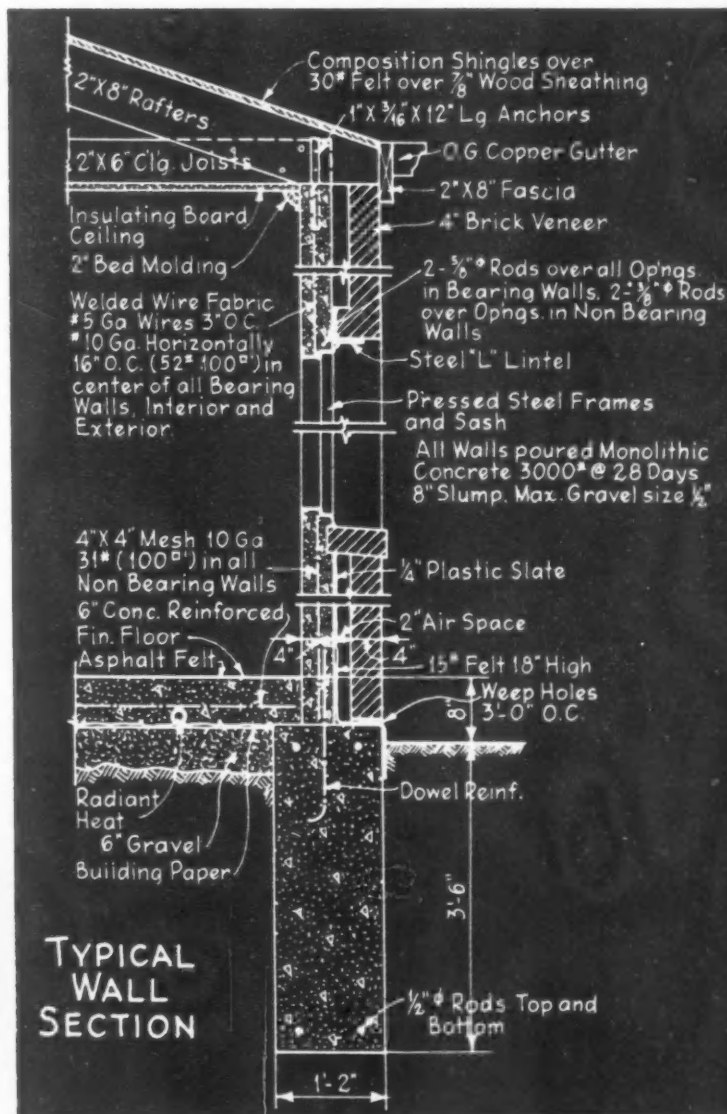
HEAVY power equipment is used to level areas and to hoist steel forms in place. Concrete floor and walls after forms have been removed.

apply either paint or wallpaper directly to the concrete surface. Fourteen-inch thick concrete foundation walls, extending 3 feet 6 inches below grade, support the walls above. The houses are all basementless with a 10-inch thick concrete slab placed on a six-inch thick bed of gravel over the entire floor area. A veneer of face brick is placed alongside the concrete wall with a two-inch air space between, with the brick being tied in with wall ties every square foot. The upper portion of the house is finished off in the conventional manner with wood ceiling joists and rafters, asphalt shingles on the roof, and cement asbestos or wood shingles on the gable ends.

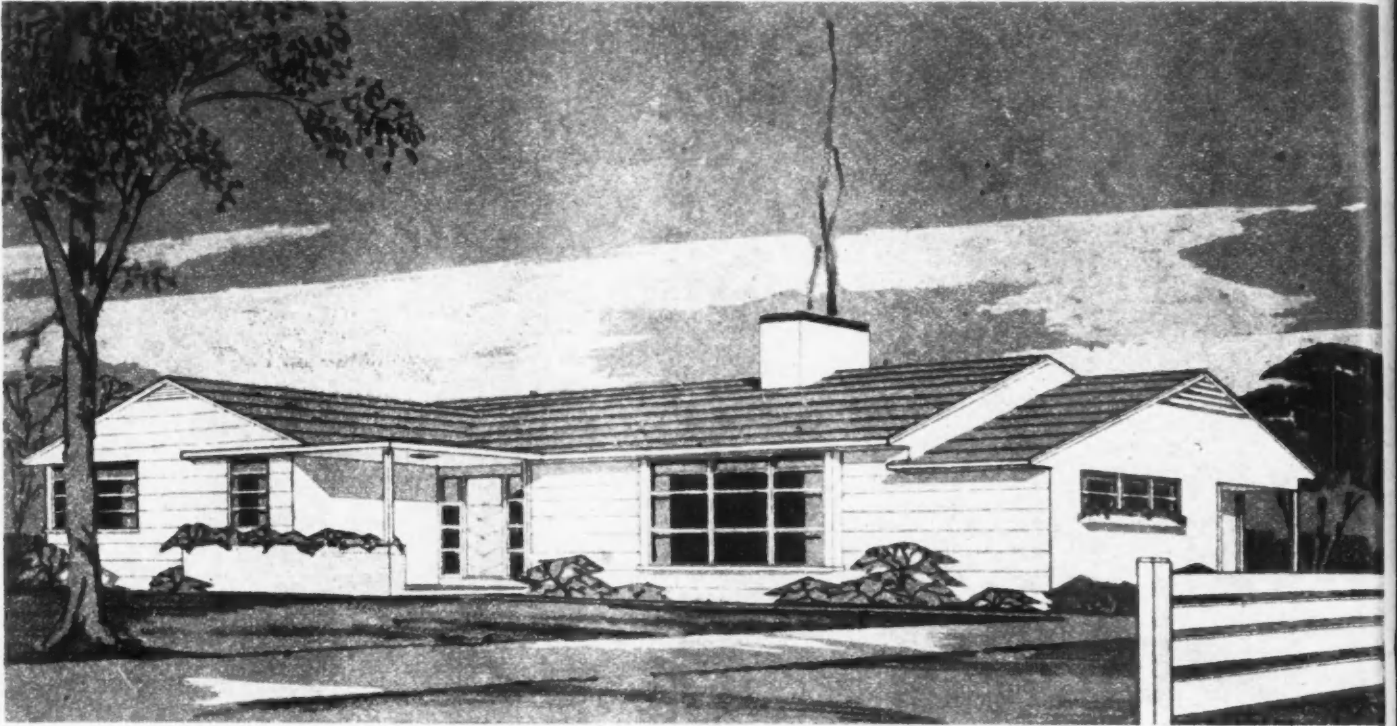
Panel heating pipes have been placed in the concrete floor slab over the entire area which is fed by a Dunkirk oil fired boiler. A Rheem heater provides an ample supply of domestic hot water. Chase copper is used throughout for downspouts, gutters and flashings. All windows are steel casements supplied by Fenestra. Floors are finished with Armstrong asphalt tile laid over the concrete slab. Ceilings are Celotex panels.



BRICK veneer being applied to face of concrete walls. Roof of frame.



NOTE two-inch air space between brick veneer and concrete wall.



THE plan of this house is ideal for a corner lot location. Emphasis is placed on separation of living activities.

## A Modern Home for Town or Country

*Anicka*  
**BLUEPRINT**  
**HOUSE No. 7**

**A**N increasing number of Americans today are learning to appreciate the advantages of houses planned with all the freedom, economy, efficiency and the creative beauty possible in this mid-twentieth century. Many of these families, all potential home owners, are anxious to escape from the imitation Colonial architecture which is being foisted upon them in large doses in every community, under the guise of utility and economy.

On this and the accompanying pages, Walter T. Anicka, architect of Ann Arbor, Mich., has again produced plans of a house in the medium priced bracket that is simple yet distinctive; one that will meet the requirements of an increasing number of discerning home seekers.

To classify this house as being of a certain fixed type or style would be incorrect. Rather it is a rational approach to the problem of home planning in which there is a constant development of new materials and techniques being employed. Unhindered by arbitrary rules and outworn traditions, it can be said that it is truly contemporary in convenience and

economy of construction and design.

In the planning of this house, Mr. Anicka has kept uppermost in his mind the requirements for children. Ample opportunities are provided for them to clean up in the service room area after playing, before they enter the living portion of the house. Access to the large recreation room in the basement is also available from the service room. The partial basement also provides space for a heater and storage room; the balance is unexcavated.

This house, like the one presented last month, is zoned for its three major functions: Service area on the right includes the kitchen, service room and rear porch with access to the basement; entertaining and living in the center core takes in the reception, living and dining rooms; the quiet area to the left, constituting the third unit, embraces the bedrooms and bath, setting these rooms off entirely from the rest of the house. Ample window area and cross ventilation are provided in all but one bedroom. The garage is planned to be separate from the house, located at the rear of the property.





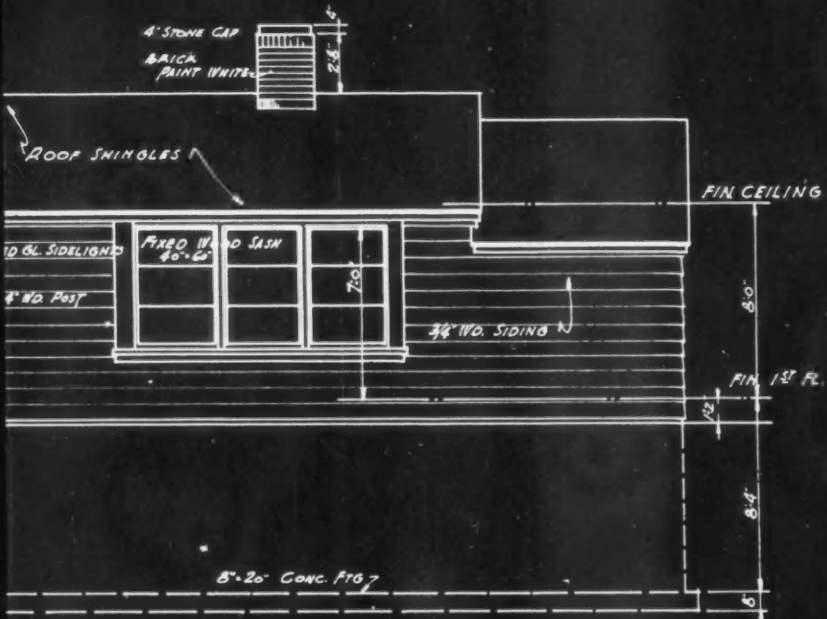
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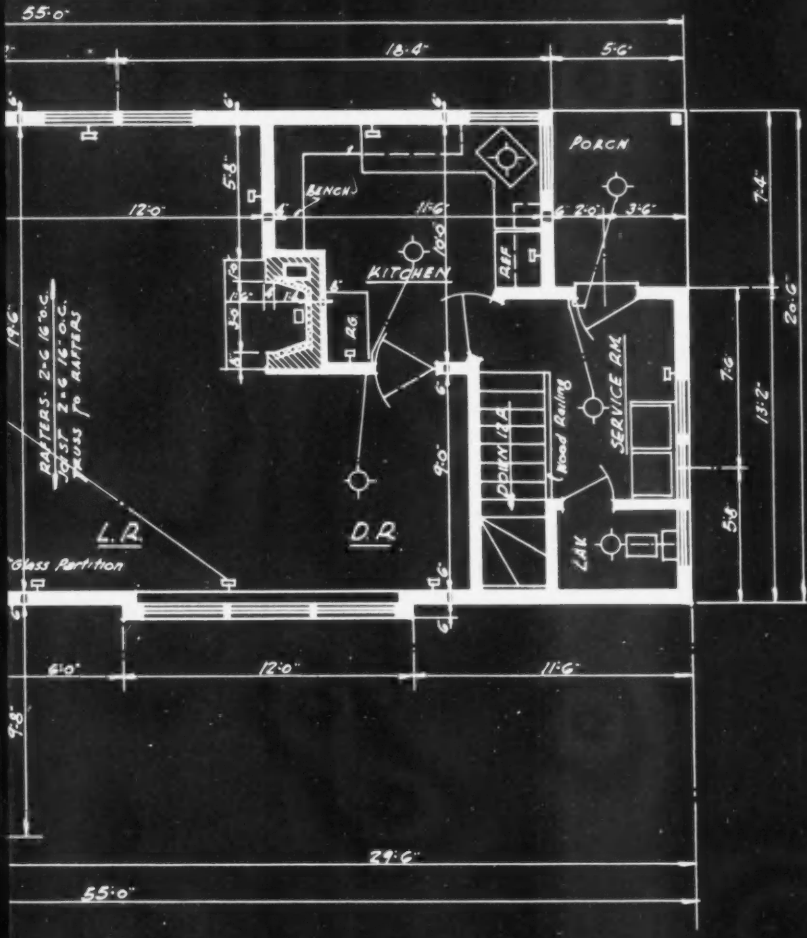
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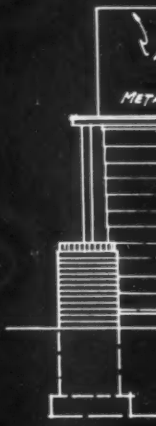


ELEVATION.



FLOOR PLAN.

1/8" = 1'-0"



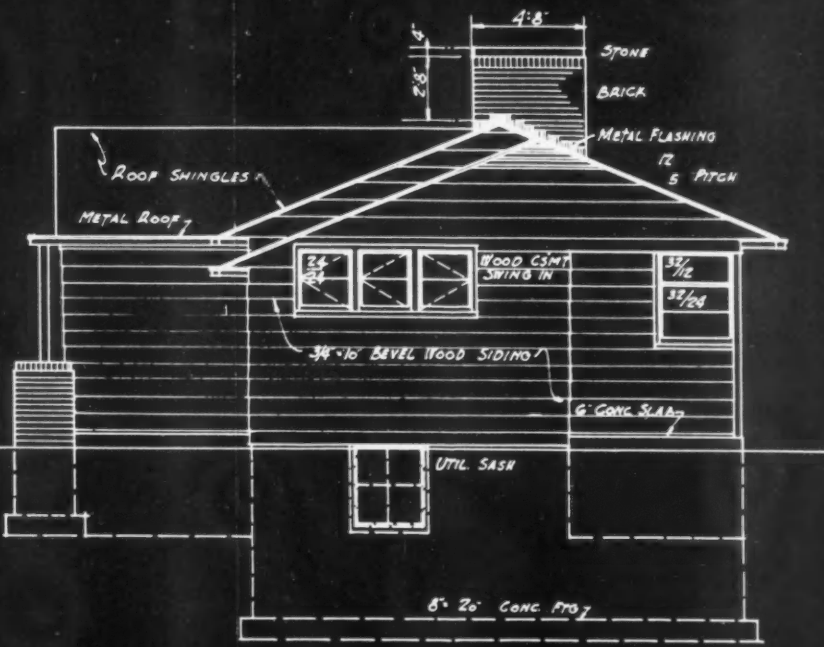
FIN. GRADE

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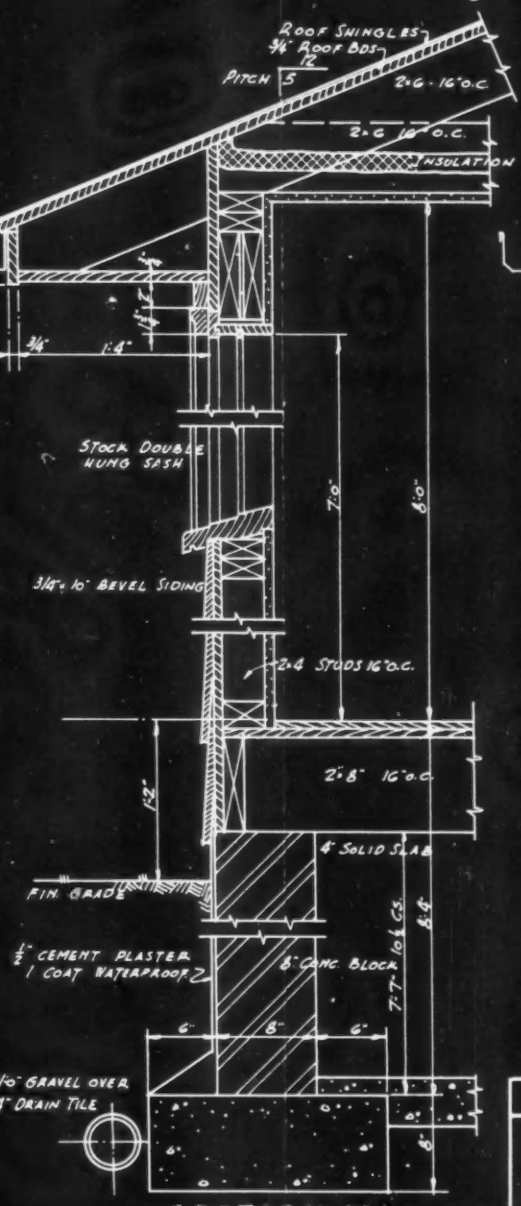




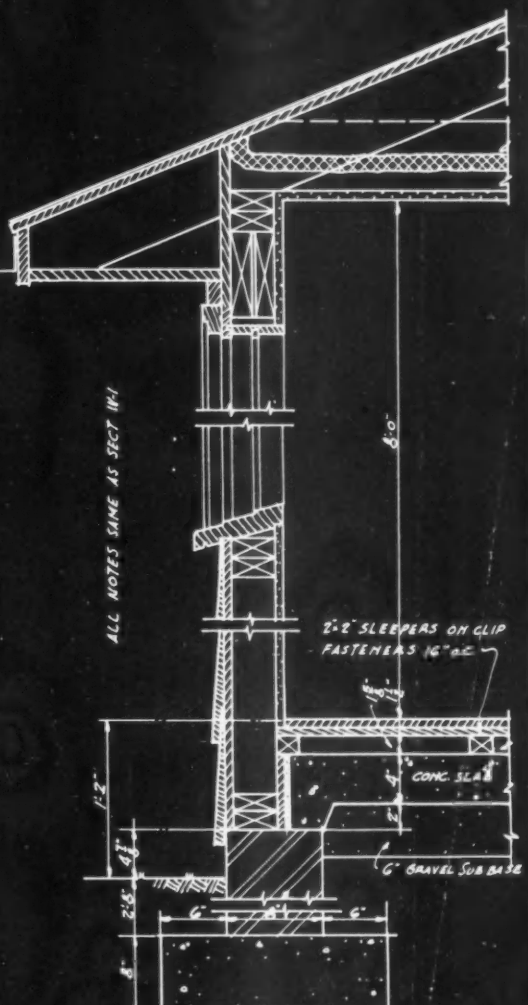


RIGHT SIDE

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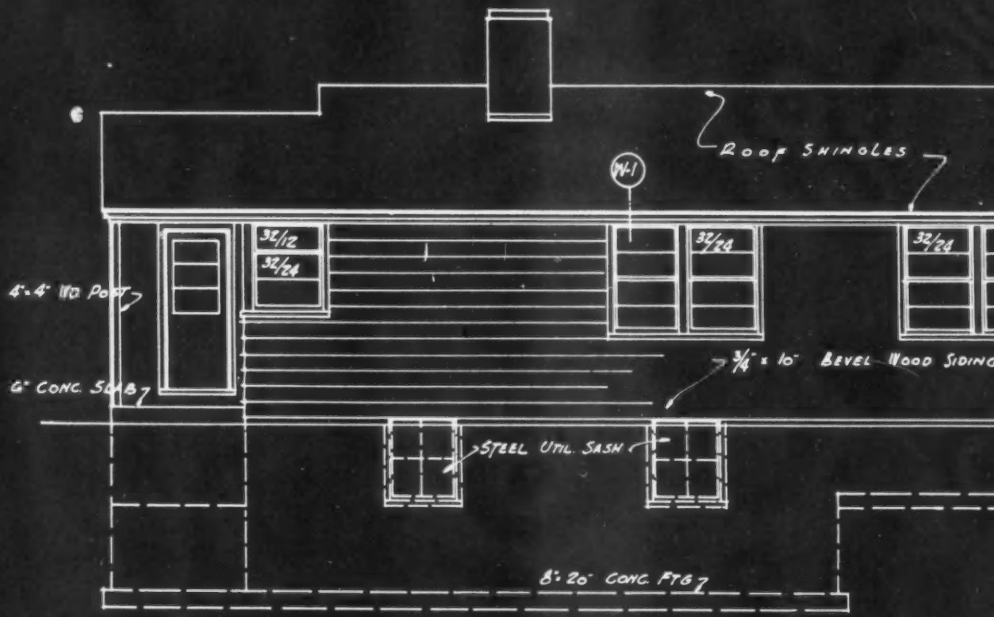


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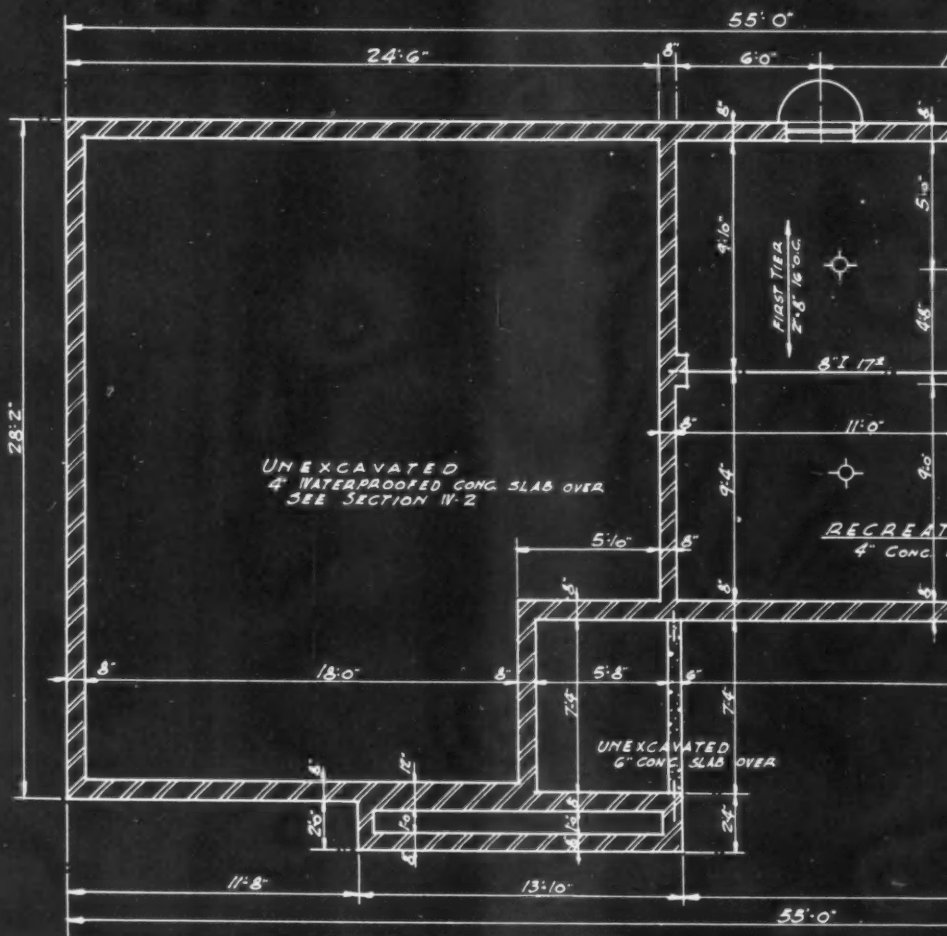


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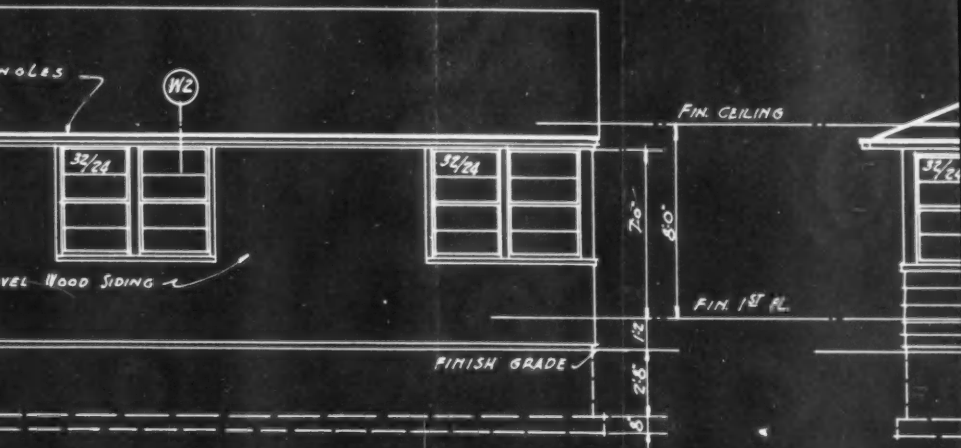
**DESIGN No. AB 120**  
**AMERICAN BUILDER BLUE PRINT SERIES**  
 Designed By  
**WALTER T. ANICKA,** ARCHITECT.  
 Ann Arbor, Michigan.  
 Simmons Boardman Pub. Corp. 105 W. Adams St. Chicago, Ill.



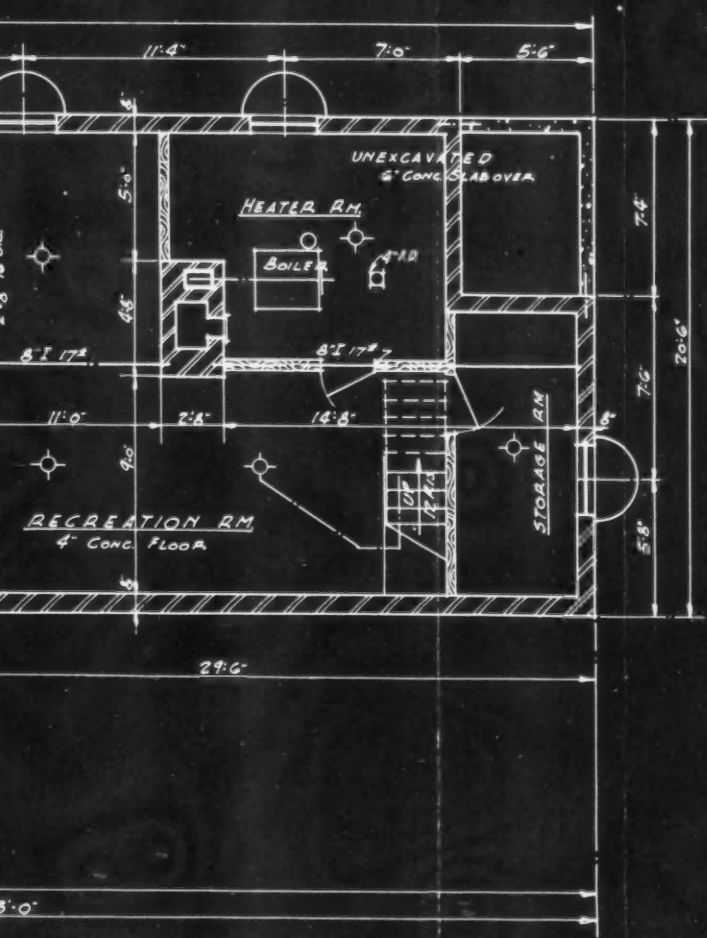
REAR ELEVATION  
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FOUNDATION PLAN  
SCALE 1/8" = 1'-0"



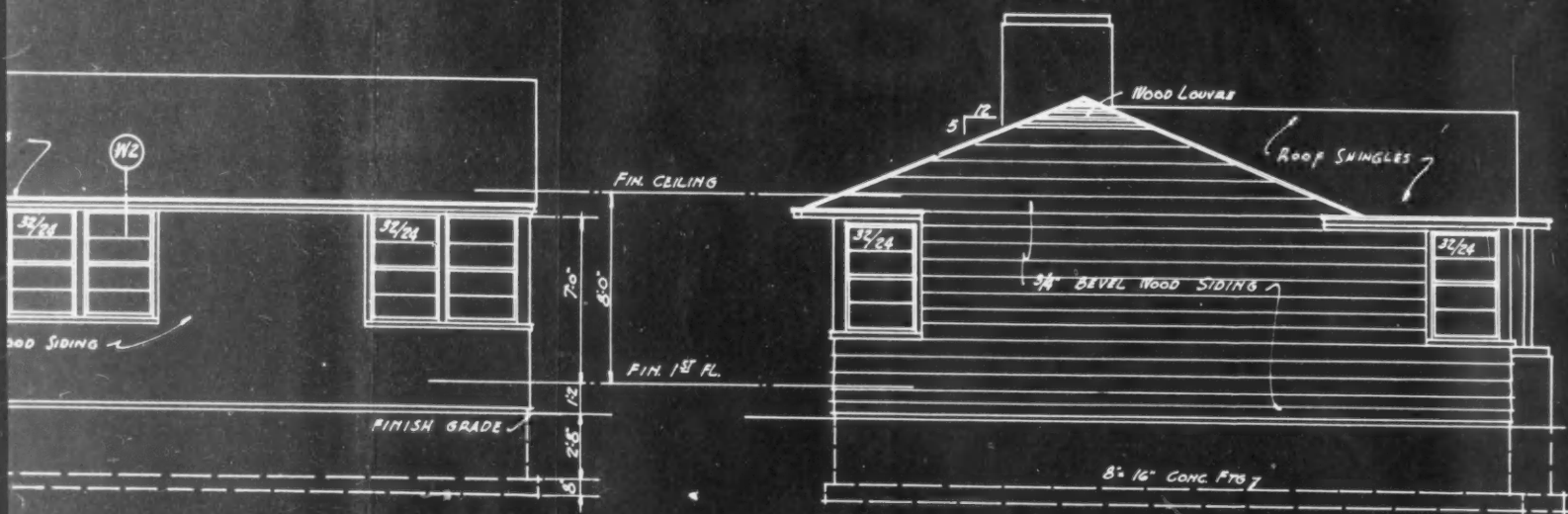
ELEVATION.  
1/4" = 1'-0"



FLOOR PLAN.

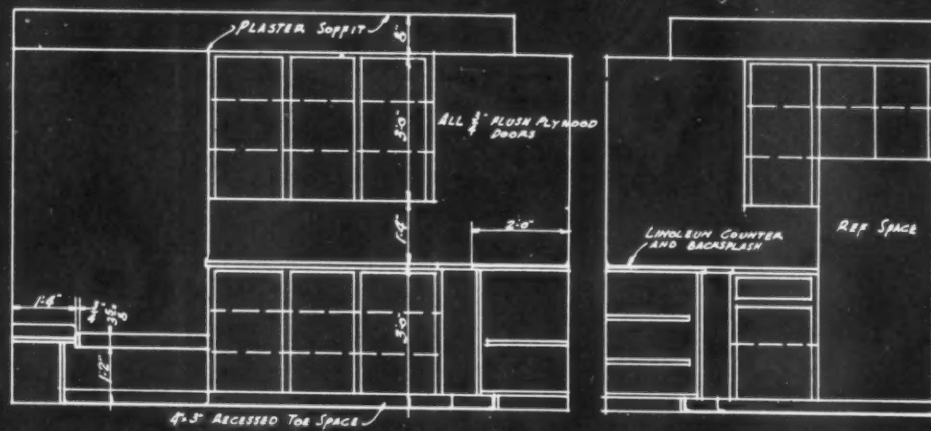
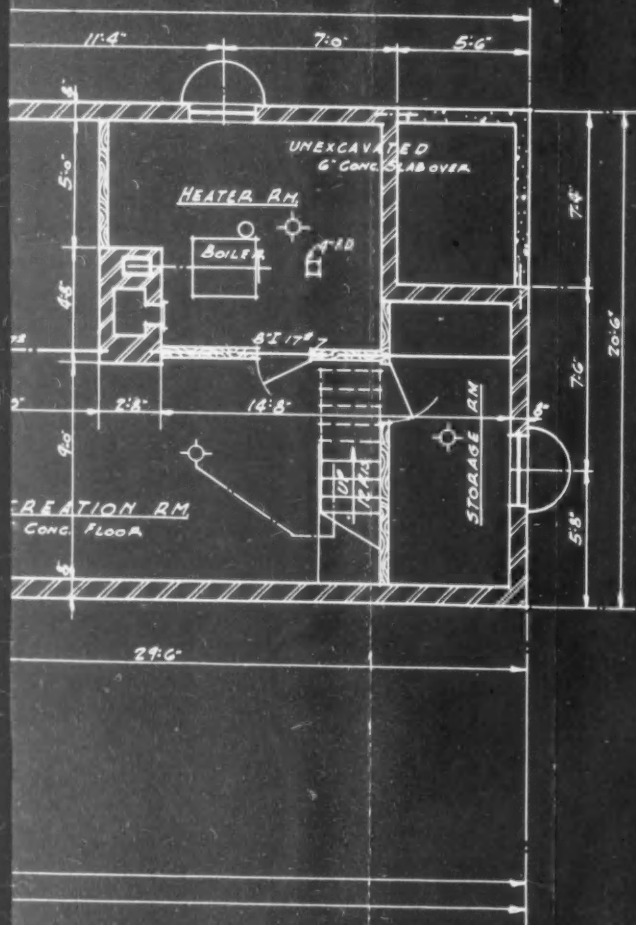
NOTE: FOOTINGS UNDER ALL  
WALLS TO BE 8" 20" CONC.



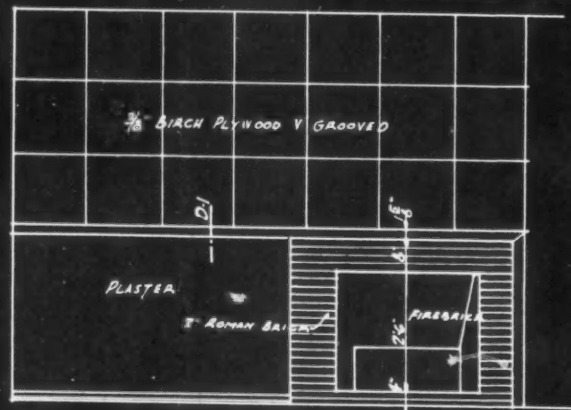


• LEFT SIDE •

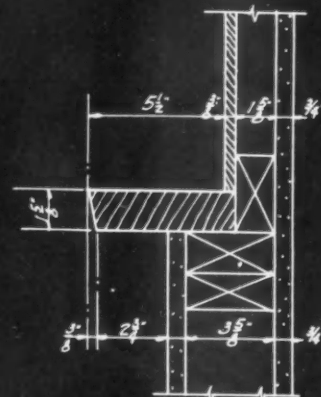
SECTION



• KITCHEN DETAILS •  
SCALE  $\frac{1}{4} = 1'-0"$



• FIRE PLACE •  
SCALE  $\frac{1}{4} = 1'-0"$



• SECTION D-1 •  
SCALE  $\frac{1}{2} = 1'-0"$

NOTE: FOOTINGS UNDER ALL  
WALLS TO BE 8" 20" CONC.





## Education—Opportunities For Young Men Entering The Building Field

**O**NE of the most difficult problems facing youth today is the selection of a life work before attaining majority. Very often the college graduate does not follow the career toward which his college courses have been shaped. Often, too, the graduate has not been taught how to make a business success of the life work for which he has been trained.

These make it doubly important today that the young man or woman who is in the process of deciding on a life work should study the splendid potentialities of the postwar building industry and compare them with the rewards of any other life work under consideration.

For the first time in history the schools, colleges and universities of the country in cooperation with the building industry have segregated light construction—home building, structural improvements, and farm building—from the over-all construction industry—for special planning and educational treatment.

For the first time in history certain educational institutions in the United States have organized and set up curricula with appropriate degrees designed specifically to train young men and women for careers in Light Building Construction and Marketing.

For the first time in history young men or women can decide upon and be trained for careers in the nation's second largest industry. They can enter college with the assurance that they will receive specific training which will adequately prepare them for successful and profitable lives in the industry. These curricula will also give graduates a wider and more thorough

*Material for this article was taken from two sources—"New Career Opportunities in the Building Industry," a booklet published by Johns-Manville; and a paper prepared by Martin N. Chamberlain, Director of Education, National Retail Lumber Dealers Association.*





**UNIVERSITY** classes are making room for young men who plan on entering the building business.

educational background for such success than anyone engaged in the industry at the present time possesses.

The building construction or shelter industries embrace the second largest segment of American life, with 27.8 per cent of the consumer's expenditures, while the largest, that of agriculture and food groups, accounts for 28.3 per cent of the consumer's dollar.

The building industry represents in reality two industries—heavy construction and light construction.

Heavy construction may be defined as including roads, bridges, railroads, canals, dams, factories, public and office buildings, which require heavy construction machinery for erection. In dollar value such projects run from \$20,000 up to hundreds of millions of dollars on a single contract.

The light construction industry, on the other hand, embraces homes, farm buildings, stores, garages, small industrial buildings of all kinds and the general field of structural repair, remodeling and improvement, also requiring builder ownership of light and medium grading, excavating, road building, cutting and hauling equipment. The dollars and cents value of contracts in this division of the industry runs from \$1 to millions of dollars and the largest single item is, of course, the American home.

In normal years this housing field, or to use its other name, the light construction industry, is equal to heavy construction in dollar volume as each division represents about 50 per cent of the total construction volume.

The light construction industry has three major markets: that for new homes and small and medium industrial service and commercial plants; that for structural improvements; and that for farm buildings.

It has enjoyed an annual volume as high as 6 billions of dollars and its annual postwar potential is probably

twice that figure. The U. S. Department of Commerce has recently estimated that the pent-up demand for housing will reach many billions of dollars by 1948.

This light construction industry has seven supply divisions, viz.: machinery, materials, labor, land, utility, credit and equipment, and paralleling management divisions in production, distribution, finance, installation and marketing.

The U. S. Department of Labor lists 1200 separate occupational classifications in the construction trade alone, embracing a normal total employment of 3½ million men.

At least another million are normally employed in building industry manufacturing establishments and still another million in the distribution and service industries.

One hundred separate industries, which together make up the building industry in total, indicate the wide and varied opportunity for the careerist in this industry.

The war was won because war is a production problem and Americans know how to produce. But, winning the peace is more difficult because industry never has learned how adequately to distribute the plenty that can be produced, as witnessed by the chronic unemployment of 11 to 13 million employables in the prewar decade. Some way must be found adequately and completely to distribute production in order to avoid periodic shut-down with its accompanying unemployment.

During the ten-year prewar period thousands of college men and women had great difficulty in finding satisfactory employment upon their graduation.

What of the college graduate? What chance will the classes of '48, '49, '50 and '51 have of satisfactory placement in their chosen walks of life?

In one industry there will be a special need and opportunity for college men and women graduating in the coming years. That industry is the building industry.

Here, then, is the net of the situation at the present time: a great industry—building—has an opportunity at least to double its normal volume in home and farm construction and employ millions of additional men. But it lacks "work creators," i.e., trained men and women (in the ratio of about one to each thirty "labor factors") who will educate and serve the consumer through the creation of this additional business and employment volume. Until this trained man-power is developed it appears that the country will be deprived of this logical answer to the goal of full employment.

This situation makes it vitally important that an answer be found to the questions—when, where, and how will these trained men and women be secured for the building of tomorrow?

This is probably the greatest educational problem in America today—a problem that is being courageously faced and adequately met.

Educators have frequently asked the question, "Why hasn't the building industry developed a training program adequate to its needs?" The answer is to be found in the structure of the industry itself. The building industry is made up of 100 or more branch industries—none of which is a dominating part of the whole. It is the most heterogeneous of all industries.

The educational problem in the building industry is further complicated by the complexity of its products and services. A new home, for example, has 30,000 parts contributed to by hundreds of industries and fitted together on the site by a score of different types of labor.

The problem of building an adequate program of study to provide educationally for the varied career opportunities in the building industry is as involved



as the field of agriculture or any one of the professions.

Housing is concerned with environment and environment embraces every phase of living.

Preparation for careers in the shelter industries therefore would call for studies in fields as wide apart as aesthetic design and sewage disposal, as concrete mixing and the psychology of human relations.

A survey of these subjects reveals that only in a college or university is to be found the varied teaching background for such requirements.

It is no wonder that the industry itself has not been able to develop adequately trained man-power or an adequate training program. Obviously, this educational need is professional in scope, and the only way to get adequate and competent professional training is in a college or university course.

This diversity of the knowledge required for the career of a local building industry proprietorship also explains why capable local building industry leaders are so rare today and why there is such a tremendous shortage of competently trained men and women in the industry.

Heretofore, local engineering schools have had certain courses pertaining to segments of the building industry, such as Civil Engineering, Architecture and Forestry, but it is probably true that in no one of these courses have more than 25 per cent of the above subjects been treated.

Civil Engineering courses were usually devoted to large construction problems such as bridges, dams, roads, canals, factory and office buildings and others. Architectural courses have also been weighted to large construction classifications and almost totally devoid of any marketing training. The forestry courses were devoted to lumber production with some few subjects concerned with the distribution of that commodity.

Graduates of these courses entered industrial employment, if they could find it, with a highly specialized training but without an understanding of how to market their brains in terms of adequate use. Many such graduates entering the building industry were disillusioned by the complexity of the industry and by the realization of how inadequately they were prepared with the knowledge required to make a successful livelihood in the industry.

A few years ago this problem was called to the attention of certain educators in the country.

The approach to these educators was on the basic need of the country for the solution of this educational problem rather than the needs of any one industry. Their response has been gratifying and these educational leaders who have acted so far in setting up curricula to solve the problem have opened up a great new field of opportunity to the students of tomorrow.

In the complexities of modern life, the simple acquisition of knowledge is not enough. The student must be taught how to market his new abilities and capacities.

As the president of one great university phrased it, "Successful living tomorrow will require a horizontal as well as a vertical approach to college education, even though another year or two may be required in the highly technical fields. In our university it is my belief that this will be the first of a series of such curricula which will cut across the various departments of the school to fit adequately our coming graduates to make a business success as well as a professional success of their chosen life work."

The country is indeed fortunate that its educators are squarely meeting this challenge.

Any high school student who is analyzing the myriad vocations available to him or her may very well stop, look and listen and make a detailed study of the splen-

did career opportunities these new courses make available in the building industry as compared with any other field of work.

Today 30 colleges and universities have courses leading to B. S. degrees in Light Construction Engineering and Marketing. Last year over 1100 students were enrolled in the four year programs and just this past year the first student graduated from Michigan State College, bringing to the industry a sensible background of training and effort.

Efforts are now being made to interest colleges in preparing special courses for these students. One significant indication of this trend has been the hiring within the past year of experienced lumber dealers to the staffs of two of the universities offering these courses.

Immediate educational need of the industry has been determined to be a short course wherein a former employee whose business career was interrupted by service experience could review and refresh his former training and become acquainted with the newest developments of a progressive industry. There is additional purpose for this type of course for the discharged serviceman who has determined to make this industry his career, but feels the need for some concentrated education to provide the tools for his ambition and enthusiasm.

There is a history of a successful operation of a short course in fundamentals of retail lumber training at Antioch College in Ohio in the years following 1925. The course was sponsored by Findley M. Torrence, secretary of the Ohio Association of Retail Lumber Dealers. One of the most encouraging aspects of this original short course program is the business records



VARIOUS TYPES of wood being explained to students at City College, Midtown Business Center, New York City.



**CLASSROOMS** are full but colleges and universities are making room for young men planning on entering the building field.

made by the graduates in these classes. Mr. Torrence has kept in touch with nearly all the graduates and though some have wandered out of the building supply industry, those who have remained have been uniformly successful in their ventures—tops in their field.

Graduates of the current classes show every indication of desiring to match these past records.

About the time the boys were coming back from Japan a group of dealers from the Pacific Northwest met with William C. Bell, the managing director of the Western Retail Lumbermen's Association, and Dr. Henry Burd of the University of Washington. Together they mapped out a short course which was designed to fit the needs of these returning servicemen. Considerable time and consultation were required to establish the form and content of the course, but it emerged from this study as a 30-day course in subjects basic to the operation of a retail lumber and building material yard.

The first class was announced for January, 1946, and was promptly subscribed several times over. Requests come from all parts of the country. Even the first class was made up of students from points distant from Seattle, such as Kansas City, Tucson and Detroit.

Subsequent offerings of the course resulted in minor changes, but in the main the original planning of the formulating group was basic enough to meet the needs of a variety of students. More subjects were added to the curriculum which resulted in a crowded schedule, but one that offered a complete survey for a lumberman at any stage of his career.

The success of the first classes came to the attention of the Joint-Committee of the National Retail Lumber Dealers Association and The Producers' Council in April, 1946. As the 30-day course program appeared to fit the needs of the entire nation it was adopted by that committee as the basis for a national industry educational program and funds were made available to implement the development of the course. A goal of some ten to twelve universities was established.

During the summer all segments of the industry were contacted for suggestions and teaching helps. The Committee on Education met and reviewed the suggested outlines which were submitted from a variety of sources. Some new subjects were added and some deleted. Many new textbooks and text materials were offered for use by manufacturers. A Guide was prepared for the help of colleges and universities in setting up a course. Complete details as to the purpose, background, makeup of the class and of the course were included. The functions of the institution were listed

as were those of the cooperating state or regional association. Also included were the complete outlines for all subjects, lists of texts and text materials to be provided, examinations, typical class schedules, lists of films and sources and typical application forms.

A reprint of the middle pages of the guide was made, containing the lecture outlines. Each of the students received one of these as the basis for his lecture notes.

The procedure for approaching the colleges and universities was left to the secretaries of the state and regional associations. In the period of extreme crowding in these institutions it was found that with a little preliminary spade work the course was not once refused even though some of the top universities in the nation were approached. The key to this success came from using a local approach and presenting a very detailed and impressive looking guide. Committee members were told repeatedly that the preparation for this course was the best ever to come from industry.

Another factor in selling the universities was that they had only to provide instruction in the subjects wherein they were well equipped to do so. As an example, where the institution had a forestry department, the lumber subjects were generally assumed by the faculty. In others these subjects were covered by speakers from the industry.

That was the pattern—extreme flexibility. In most of the classes the product subjects were handled by industry, the business subjects by faculty, and the estimating and general subjects were shared by both groups.

The universities usually placed the administration of the course in the hands of the Extension or Adult Education Department. The variation in ability and experience of these departments in the various colleges was a surprise to those concerned in establishing the courses. While this department proved to be most effective as it generally had the cooperation of all departments, the course was administered by the Business Administration, Forestry, and Engineering Colleges of some of the institutions.

The universities established the tuition fees in accordance with their policies. These varied from ten to fifty dollars depending upon what the university offered in instruction and class room facilities. Clearance with the Veterans Administration was arranged by the university so that the courses were approved for veterans under Public Laws 346 and 16.

The division of instruction varied from slightly half and half by the numbers of hours which each group, faculty or industry covered. The industry lecturers contributed their time and expenses, a fact which materially reduced the cost of the course to the student. The calibre of these industry lecturers was extremely high, and this resulted in the instructor lists for each of the schools reading like a who's who of the building industry. Actually the students indicated a preference in most instances for the industry lecturer over the college faculty participation. The approach of the lecturers was changed with experience, but the pattern clearly indicated the students' desire for a practical discussion of application and usage eliminating as much theory and chemical or physical formulae of manufacturing processes as was possible.

Visual aids were limited generally to films and charts. This type of presentation will be given every stimulus this summer in order to have something of this nature specifically keyed to each subject.

The students may come under the category of veteran or non-veteran, employed or unemployed. They have ranged in age and experience from 18 to 52 and from

no experience to 15 years. Most are sponsored by some dealer or manufacturer and virtually all the employed graduates have had several choices of jobs awaiting them. Their enthusiasm has been the greatest stimulus to this program. In five of the colleges, the students have formed alumni groups in order to keep their mutual interests alive.

Students generally attend the classes nearest their homes. The classes at the University of Illinois and the University of Washington continue to draw students from all over the country. A recent class at Georgia Tech had 29 students from seven southern states involving the cooperation of six different retail associations. In the past year 1100 students have attended 27 classes in sixteen colleges and universities.

The program will be slightly expanded for the coming year to cover a few regions which have not had an institution offering the course in their area. The plan is for 20 courses with about 35 classes for the coming school year.

A survey of some of the yard owners and managers who had sent one or more students to the early courses indicated that 100 per cent considered the time and money expended on the course was worth while; over 90 per cent felt that the employee was considerably improved. The most significant fact is that the average of answers submitted indicated that management considered that the month's training was equivalent to *nine months'* experience in the yard. Students' evaluation has placed the figure of experience gained at two years.

Basic subjects have been integrated in home-study and correspondence courses which have been made available to the industry through International Correspondence School and American Technical Society.

They are being developed into units of evening study in a program of group study with the cooperation of the U. S. Office of Education. In this work, which is being developed this summer, an instructor's manual similar to the guide will be printed. All the text and visual aid material which is being developed for the 30-day courses will be available for use in this training.

This program will be developed as a progression of units leading to an industry-recognized diploma. It will be available in any community where 20 or more students can be brought together. The class procedure will be similar to that in the 30-day college courses



William Hammerschmidt (left) and Earl Bullock (right), both of Lombard, Ill., discuss their home-study course with J. D. McCarthy, secretary-manager of Illinois Lumber Dealers Association,



PRESIDENT Blake R. Van Leer of Georgia Tech makes welcoming address to students and officials attending 30-Day Short Course.

with an accent upon group discussion led by the teacher coordinator. The plan has the advantages of:

- 1) Needing the support of the local dealers' groups (lumber clubs, etc.) for original organization—thereby getting their interest;
- 2) Having sufficient flexibility that local groups could select the subjects that they want their employees to study;
- 3) Being self-supporting on a local level;
- 4) Offering training under supervision to employees who cannot get away from their jobs to attend the 30-day courses;
- 5) Enabling any dealer (or line yard organization) to conduct a course for his own employees without resorting to cooperation with other dealers.

All these educational programs become a logical part of on-the-job training programs, actually providing the  
(Continued to page 176)

**Current List of Universities and Colleges Offering Courses**

Alabama Polytechnic Institute	Auburn, Ala.
Colorado A. & M. College	Fort Collins, Colo.
University of Denver	Denver, Colo.
University of Florida	Gainesville, Fla.
Georgia School of Technology	Atlanta, Ga.
University of Idaho	Moscow, Idaho
University of Illinois	Urbana, Ill.
Iowa State College	Ames, Iowa
Kansas State College	Manhattan, Kan.
University of Kansas	Lawrence, Kan.
University of Kentucky	Lexington, Ky.
Louisiana State University	Baton Rouge, La.
University of Maine	Orono, Maine
Massachusetts Institute of Technology	Cambridge, Mass.
Massachusetts State College	Amherst, Mass.
Michigan State College	East Lansing, Mich.
University of Minnesota	St. Paul, Minn.
Montana State College	Boseman, Mont.
University of New Hampshire	Durham, N. H.
New York State College of Forestry at Syracuse University	Syracuse, N.Y.
North Carolina State College	Raleigh, N. C.
Oklahoma A. & M. College	Stillwater, Okla.
Oregon State College	Corvallis, Ore.
Rensselaer Polytechnic Institute	Troy, N. Y.
University of Utah	Salt Lake City, Utah
Virginia Polytechnic Institute	Blacksburg, Va.
University of Wisconsin	Madison, Wis.
University of Wyoming	Laramie, Wyo.

**Universities and Colleges Offering 30-Day Courses**

University of Washington	Seattle, Wash.
University of Denver	Denver, Colo.
University of Illinois	Champaign, Ill.
Purdue University	West Lafayette, Ind.
Ohio State University	Columbus, Ohio
University of Wisconsin	Madison, Wis.
New York State College of Forestry at Syracuse University	Syracuse, N.Y.
Massachusetts State College	Amherst, Mass.
University of Southern California	Los Angeles, Calif.
Michigan State College	East Lansing, Mich.
Southern Methodist University	Dallas, Texas
Louisiana State University	Baton Rouge, La.
Georgia School of Technology	Atlanta, Ga.
City College of New York	New York City, N. Y.
College of Pacific	Stockton, Cal.

# This Business of Home Building

**As described by Gale Bradford, of Bradford Homes, Inc., who is now engaged in an operative home building project at Evansville, Ind., producing two houses a day for veterans, under a system which achieves quantity output of fine houses at reasonable prices.**

**THIS farm land with good drainage and within easy access of gas, water and electricity had 350 homes on it in 13 months' time.**

**T**ODAY'S PAPERS almost never miss an opportunity to tell the public that housing costs are, too high. These statements of alarm generally come from well-meaning men in public life and industry. In all fairness it must be agreed that housing costs are high, but what is the result of continually reminding the public of this fact? Does it reduce the cost of manufacturing the items that go into a house? Does it cut the labor bill? Does it get homes produced quicker to meet the demand? No, it does not!

What it does do is create buyer resistance for all houses, thus threatening to drive out of business those builders like ourselves who create houses at reasonable prices even today. Perhaps the most important fact about Bradford Homes, Inc., is that our product sells for a price approved

by both FHA and Veterans Administration. This means that Bradford homes can be purchased without equity by a veteran qualified for a G.I. loan. Surely there is no greater bargain on the market today but if the well meaning individuals and the well meaning newspapers continue to scream about exorbitant house costs, even those few like ourselves who are attempting to do something about the situation will be driven out of business by lack of a market. That this might happen at a time of greatest housing need would not only be stupid, it would be tragic. We have gone to the trouble to put on paper the complete story of how we operate, what we build, and how much we make, in the hope that the obvious frankness of this article will prove to the most skeptical readers that houses of good

quality can be built for veterans.

The tremendous pressure of need has forced all of us in the building business to look for new and better ways of getting houses constructed. This has involved attempting business-like organization and procedures in a field too long devoted to catch-as-catch-can chaos. Bradford Homes, Inc., is just one of the building concerns in the country that is engaging in a relatively new field, "operative building," but if telling the story of how our firm operates encourages others to follow suit or brings forth constructive comment, then the purpose of this article will have been fulfilled. We think we have a formula for achieving quantity production of fine houses at reasonable cost to veterans. The more builders who successfully adopt or improve on our

**CONSTRUCTION** of a cement batching plant is one of the first undertakings of the modern large land development subcontractor.

**THE** cost of putting in streets and curbing in a subdivision usually runs between three to four times the cost of the land.



methods, the better for everyone concerned. What are the essential requirements needed to set up an "operative building" concern?

1. A minimum population of at least 100,000 to be served.

2. A large supply of labor free from restrictive practices.

3. Either \$200,000 in cash or 200 lots and \$50,000 in cash.

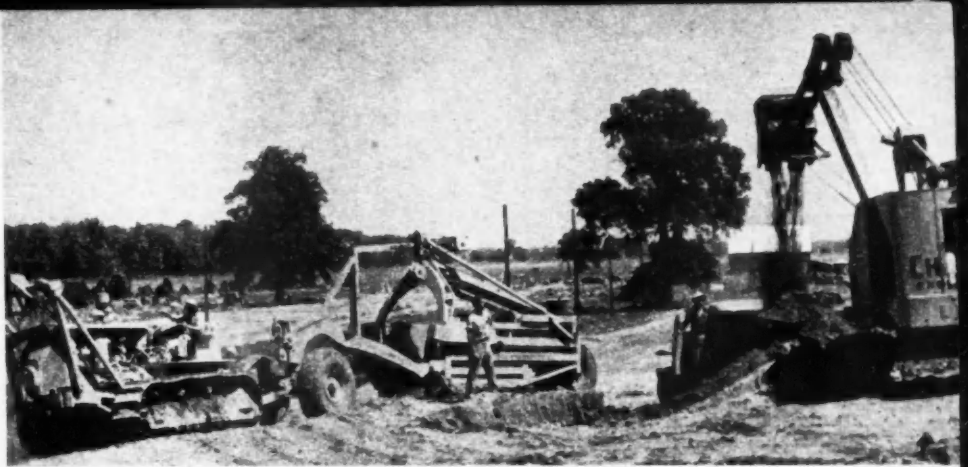
4. Subcontractors of executive ability to handle plumbing, heating, and electric wiring. (There is no good reason why all phases of construction could not be handled by subcontractors, but the preceding are the most essential.)

5. An operating organization consisting of:

- a. A General Manager
- b. An Architectural Engineer
- c. A Management Engineer
- d. A Controller
- e. A Public-Labor Relations Man
- f. A Construction Superintendent

Now, let's take these requirements one by one and go into them in detail: Because of the large organizational overhead, the cost of developing undeveloped land and the low profit margin, operative building is most practical when geared for a minimum production of two hundred houses a year over a period of five to ten years. It has been our experience that only cities of 100,000 or more provide a ready market for such large scale building. The profit in operative building is in direct proportion to the production attained in a given length of time. In such a race against time and weather there is no room in the operative builder's setup for jurisdictional disputes, work limitations, and craft distinctions which exist in the established building trade unions. We have operated since 1942 under a liberal union contract, the terms of which give the following benefits:

1. Workers may perform more than one task, receiving the rate of pay applicable for the work performed.
2. Apprentices may be employed under the Veterans Administra-



DAY construction begins, heavy dirt moving equipment cuts streets, levels ground.

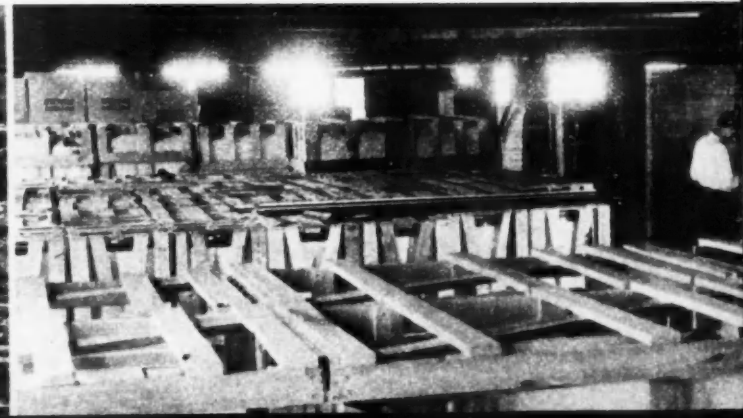


AT ONE CORNER of the site a temporary building houses the power woodworking shop. TYPICAL job site view in early construction. In background is the cement batching plant.



A "BUILDING material bank" must be accumulated on the job site to assure continuous flow of supplies to keep all crews busy.

THE material expeditor must have on hand material adequate for a minimum of three and a maximum of eight weeks full production.

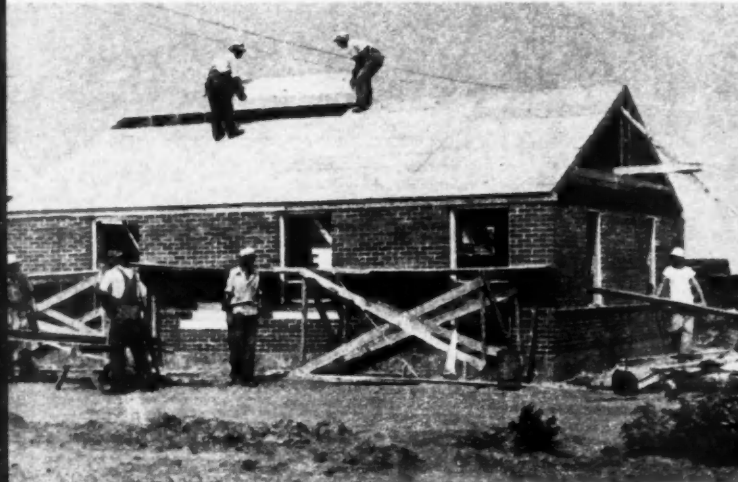




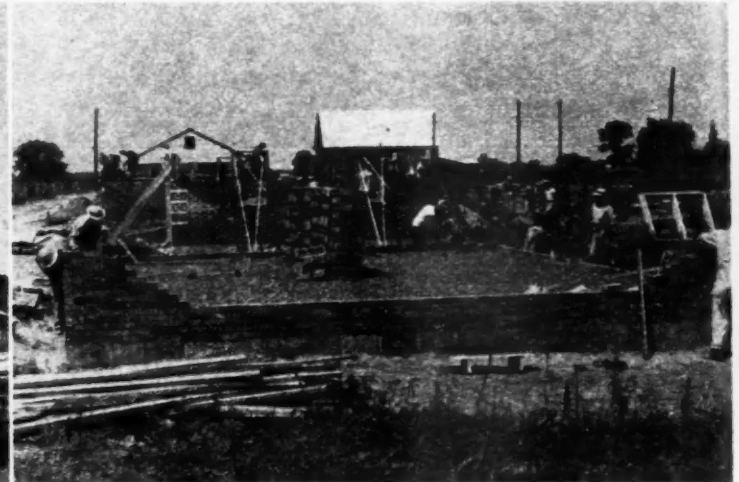
**CONSTRUCTION** methods are completely conventional. Notice the solid brick and masonry wall well under way in the foreground.



**BECAUSE** sewer lines were not available, septic tanks were required. Installation is being made in the houses in foreground.



**GETTING** the house under roof takes less than two weeks in most cases. Half the men pictured are apprentices, half journeymen.



**THERE** are four apprentices to every journeyman here. Nothing in the union contract prevents men from doing more than one job.

tion Apprenticeship Training Program in a ratio of ten apprentices per journeyman. Although this is the maximum permissible we have found a ratio of four apprentices to one journeyman is more satisfactory.

3. There are no limitations on the amount of work each man can perform and no restrictions on the use of modern equipment such as paint sprayers, etc.

In return for these benefits to us we provide eight days paid vacation for sixteen hundred hours work, equal or higher rates of pay than those prevail-

**ELECTRIC** wiring subcontractor times his work to coincide with interior finishing.

ing in the area, job and classification seniority, and a grievance procedure which has netted only four grievances in the past two years, none of which caused any delay or stoppage of work.

Our aim has been to build a home which will so satisfy the demands of Veterans Administration appraisers that they can be purchased under the G.I. Bill of Rights without requiring equity from the veteran-purchaser. This means that we must have the proposed land site under option and a complete set of plans and specifications for each house type we plan to construct. These we present before a committee of Veterans Administra-

**FINISH** carpenters follow lathers and plasterers in orderly sequence on each job.

tion appraisers for their approval. This preliminary work involves a minimum of \$5,000. Once approval has been obtained approximately \$45,000 more is required to meet payroll and construction costs until the first house is under roof and construction loan money starts coming in. If the land site is farm land, as is most often the case with us, approximately \$150,000 cash is required to finance the purchase and development of the land into building lots. An operative builder must have a minimum of one hundred lots in the same location to operate efficiently for reasons we will go into later. Obviously, there are few cities in America where such a large number of lots can be found in one place within the city's limits. We have found that farm land with good drainage, to which city gas, water and electricity are accessible, is our best bet. The cost of putting in streets, curbing, gutters and landscaping and hooking up city facilities usually runs between three to four times the cost of the land itself. Even so, figuring three lots to an acre we are able to sell the lots for \$1,000 or under and still maintain a twenty-seven per cent profit on the lot alone.

Subcontractors, properly set up and handled, are the backbone of quantity

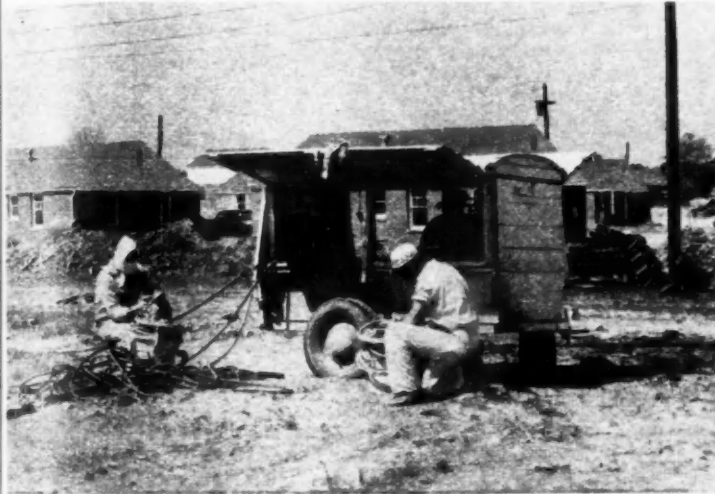




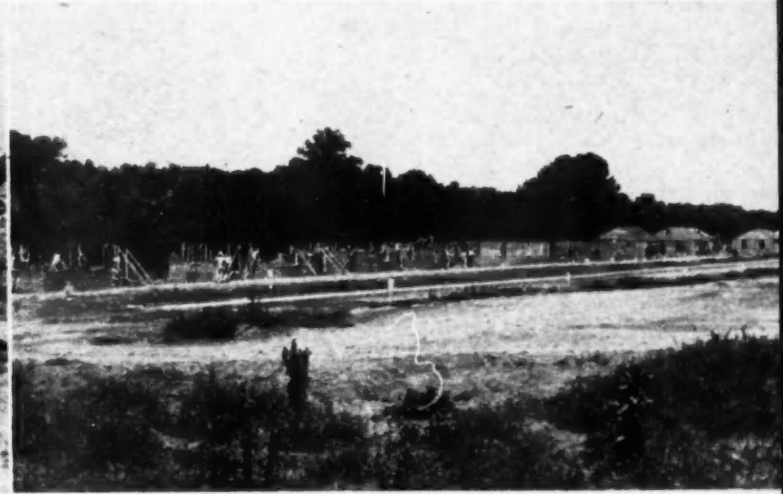
HERE workman is making final hookup to septic tank. Type of soil and drainage are important factors in installation of tanks.



WERE it not for apprentice training plastering might become an extinct craft. This man is the youngest plasterer in Evansville.



THERE are no restrictions limiting or prohibiting the use of modern, labor-saving equipment in the labor contract on this job.



FLOW of labor coincides with flow of materials. Two houses on extreme right are only slightly ahead of those on extreme left.

production. It has been our practice to look for competent foremen with energy and ambition; then provide the money for them to go into their own business with us holding fifty-one per cent of the stock in the new company. The subcontractor receives a good salary from the company and has the additional incentive of forty-nine per cent of the profit. The subcontractor purchases his own materials, and sells them to us at about twelve per cent less than we could purchase them elsewhere. He hires his own labor and signs his own collective bargaining agreement. We constitute his only source of employment, and good employment it is when you consider our minimum production of two hundred houses a year.

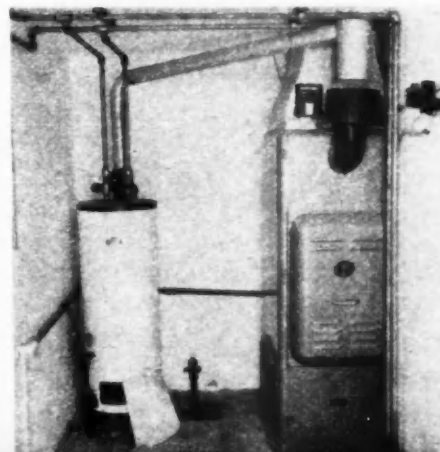
Now, let's look into the operating organization. First of all, the business requires a general manager. The general manager is primarily concerned with the financing and the land developing phase of the operation. He is the general co-ordinator of all activity and on his shoulders rests the final responsibility for the success or failure of the business. It is impossible to state the necessary qualifications for a good general manager except to say that he must have intelligence, imagination and courage.

It is the task of the architectural engineer to devise plans which call for a maximum of variation in design with a minimum of variation in construction details so that job-site fabrication of such items as roof trusses, door and window frames can be done in large quantities. Furthermore, the architectural engineer specifies materials which are readily available and is an expert on material substitutions wherever they become necessary. Lastly, the architectural engineer must see to it that standards of quality workmanship are upheld.

The management engineer provides standards for determining the kinds

and amounts of materials required for a given number of houses, standards of safety for operations, standards for determining the kinds and amounts of labor required on a job, and the business systems for efficient management. These standards are the distilled essence of trial and error methods and, as such, require a tremendous amount of study and analysis. Once established, the standard procedures of the management engineer produce a formula not only for running a construction business but also for evaluating the importance of each function and method in the organization. It takes a great deal of time and study

UTILITY room contains forced air gas furnace and automatic gas hot water heater.



BUILT-IN modern kitchen cabinets are standard equipment in every Bradford house.



to integrate and co-ordinate the factors that make for efficient building. We have spent nearly a half-year in just scratching the surface. Within the next six months we should have a fairly complete system of management efficiency.

The controller is in charge of receipts and disbursements, accounting, payroll, materials and cost control, office personnel and all expenses incidental to operation of the business.

In our organization we have combined the functions of public relations and labor relations, primarily because the man we have is capable of performing in both fields. On the public relations side he must stress over and over again the quality of the product and the service to the community which the organization provides. Because there is still a wide area of distrust of operative building in the public's mind, public relations must be completely factual and err if at all on the side of conservative claims. We have found that the use of radio and newspaper for institutional type advertising achieves the desired purpose. On the labor relations side the essential point is to provide and maintain a harmonious relationship with the men on the job and their union through strict compliance with the terms of the union contract and swift recognition for a good job well done. We try to imbue our employees, themselves veterans for the most part, with the tremendous good they are doing by building homes for other veterans. We take time to explain our methods and our overall plans to the foremen so that they acquire a sense of responsibility for the successful operation of the business and so that they can transmit to their subordinates a sense of the whole.

The construction superintendent supervises all job sites from the point of view of getting production and maintaining an adequate working force. He must also co-operate with the architectural engineer in upholding quality production and with the job-site supervisor on labor and material problems. This position differs from job-site construction supervisor in that the construction superintendent co-ordinates the production of all projects where more than one project is under way at the same time.

These, then, are the general requirements for engaging in operative building. The details of organization may vary in some particular, but generally speaking, six men in management comparable to those described above are essential. It is heartening to note that there are many communities of over one hundred thousand population which possess contractors with the necessary backing and know-how to

become operative builders. For those interested in entering the business I'd like to describe how this organization functions and what it achieves.

As with any construction business, the first problem is land. Land valuation for us consists of considering the following factors:

1. Proximity to city gas, water, electricity and transportation.
2. A sufficiently large plot to accommodate at least one hundred lots, figuring three lots to the acre.
3. Good drainage and, if possible, a sandy or gravel sub-soil.
4. Sufficient natural beauty to provide an attractive setting for a community of houses.
5. Proximity to shopping centers, schools and churches.
6. A price on the land which, with normal cost of development and normal profit, still will not exceed \$1,000 a lot.

Once we have located land that meets these qualifications, we estimate the cost of development, get together the plans and specifications for houses we propose to erect on that land and start looking for financial backing. It is possible to get a loan for fifty per cent of the land price and development costs from some financial sources. If this can be arranged the next financial problem is met by presenting the plans and specifications to a committee of Veterans Administration appraisers. Once we have figured out how to build the houses for the price this committee says they will approve them for, we then apply through a local bank for construction loans to be paid in three installments: one, when the house is fifty per cent complete, again after second inspection, and lastly after final inspection. Under Title VI of the Federal Housing Act a bank is authorized to loan up to ninety per cent of estimated construction costs.

Up to this point in the venture the cash required is for one-half the land price and development cost, the cost of getting plans and specifications together, expenses incidental to meeting and talking with financial institutions, and the normal management over-

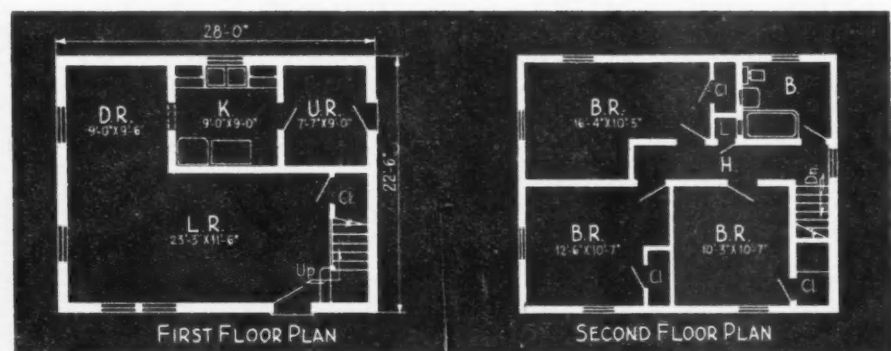
head. Any builder who can get along up to this point on less than \$100,000 is a sheer genius.

Let us assume that all arrangements have been satisfactorily completed up to this point. Now, we know we're in the business and that we're going to build houses—but we have neither the equipment for developing the land, the material for building the houses or the building crews to construct them. Our headaches are just beginning. It is still possible to get road grading, land moving, concrete mixing and pouring and motor vehicle equipment from the War Assets Administration and to finance the purchase of this equipment through local banks and RFC up to ninety per cent. It has been our practice to make a subcontract for land development, setting the proper person into the business with the equipment required in the above described manner. At the same time we select other subcontractors who will work on the job.

While land development is proceeding our architectural engineer is busy determining the kinds and amounts of material we will need to complete the first sixty houses and making every effort to locate these materials. The subcontractors do the same thing. On the day construction is to begin we believe it's necessary that this material be on hand either at the job site or in a warehouse. How do we pay for these materials which may run up to as much as \$200,000? Either by cash, or through extended credit terms on the part of the manufacturers, or through inventory loans on stock in the warehouse. We prefer the latter method since it enables us to discount our bills with the manufacturer by paying cash and thus cutting down on the amount of interest we must pay.

Simultaneous with the preceding activity our construction superintendent is busy assembling a crew of skilled workers in quantities and classifications determined by the architectural engineer. He is also busy in obtaining veterans' apprenticeship on the job training program.

If everyone has performed his job



THIS IS a typical floor plan of two-story Bradford home now being built for war veterans.



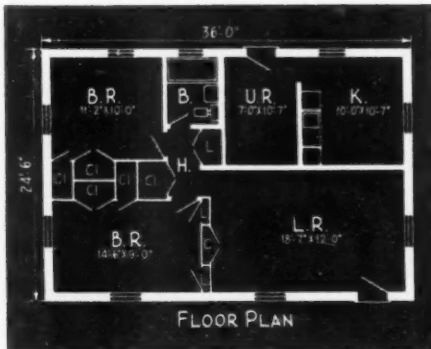
efficiently, land development is finished, materials are on hand, a crew has been assembled, and the apprenticeship training program has been approved, all at the same time.

Since we contract for all concrete work with the land development subcontractor we also expect that the concrete slabs for the first sixty houses will be laid by this time. Perhaps this requires a note of explanation. We do not construct houses with basement, and in spite of a great deal of foreboding on the part of our friends, we have found that the public readily accepts the idea and seems perfectly satisfied with a utility room just off the kitchen.

On the day construction actually begins, the farm which we bought has been divided by streets, with curbs and gutters, subdivided into lots and leveled off for home production. At one corner of the site, the one closest to the main thoroughfare, there is a cement batching plant put up by the land development subcontractor, a long tent which contains the planing mill and stacks of rough lumber waiting to be used. The men, as they come on the job, already belong to the union of their choice since we prefer to deal with a collective bargaining agent. However, the contract which we sign with the men affords us the privilege of switching men from job to job; of hiring more apprentices than journeymen; of using any modern equipment we can get; and of introducing incentive plans as awards for extra work performed by the men. In direct supervision of the job are the subcontractors selected by us, the foremen who work directly for us, the job supervisor and a man we call the material expediter.

The material expediter is responsible for having on hand adequate supplies of materials for a minimum of three and a maximum of eight weeks production. He is further responsible for getting this material in the proper quantities and at the proper time to the place where it will be used on the job. He fills the requisitions of crew superintendents and foremen on the

(Continued to page 130)



FLOOR plan of typical one-story house.



THIS modern brick veneer home on a landscaped lot was sold to a veteran for \$7,300.



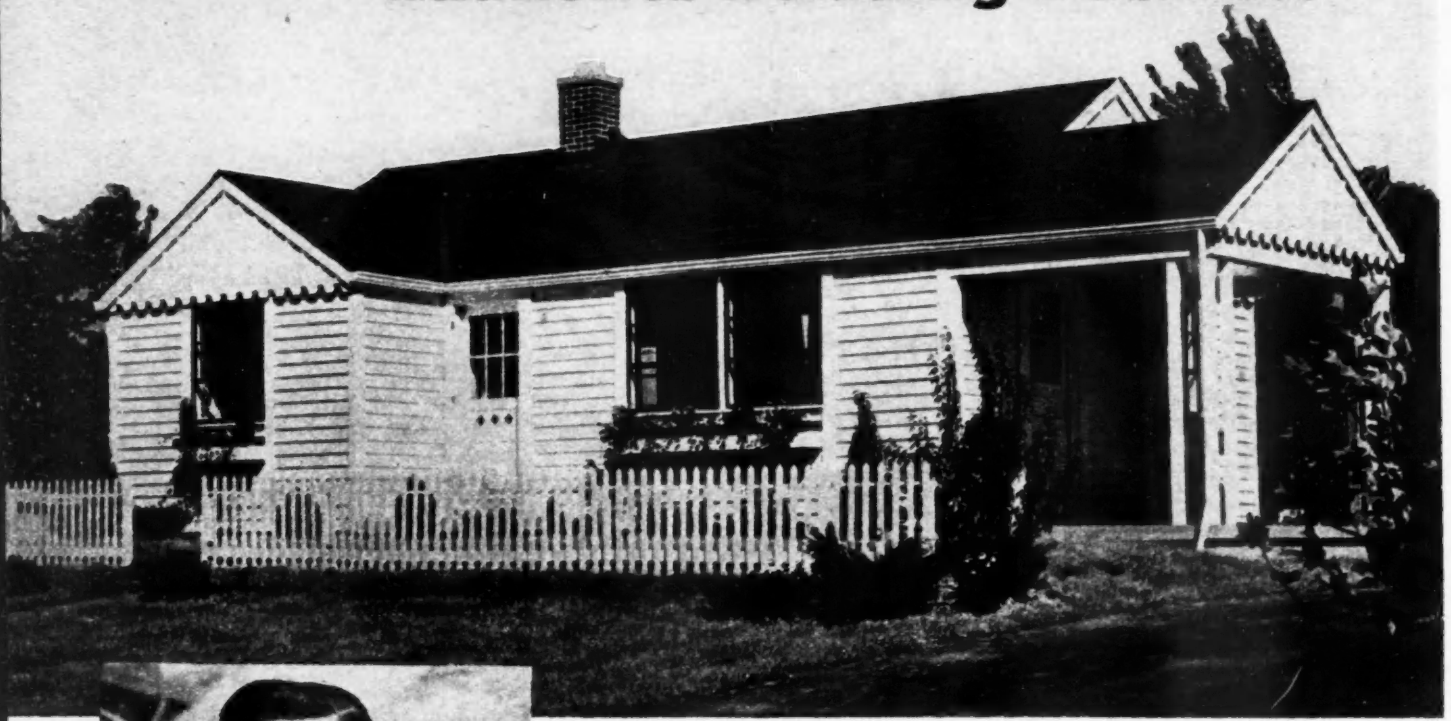
TYPICAL interior showing the 11½ x 18-foot living room of the smallest Bradford home.



ABOVE—This story-and-a-half house sells for \$9,000 including kitchen equipment. BELOW—Bradford Home Service is the house owner's best friend after he has moved in.



# 20-Year-Old Veteran Launches Building Business



ONE of the houses recently completed by builder who is a veteran of World War II.



BUILDER William F. Brown, Jr.

**W**ORLD WAR II Veteran William F. Brown, Jr., 20 years old, of Covington, Ky., has become a full-fledged home builder within the few months since he was discharged after serving a year and a half in the U. S. Army. It was while he was in the Army that he made the decision to enter the home building business. With encouragement from his parents and friends, who kept him liberally supplied with literature on the subject while he was in service, his interest mounted as the months

passed. He has already completed one house and several others are under way.

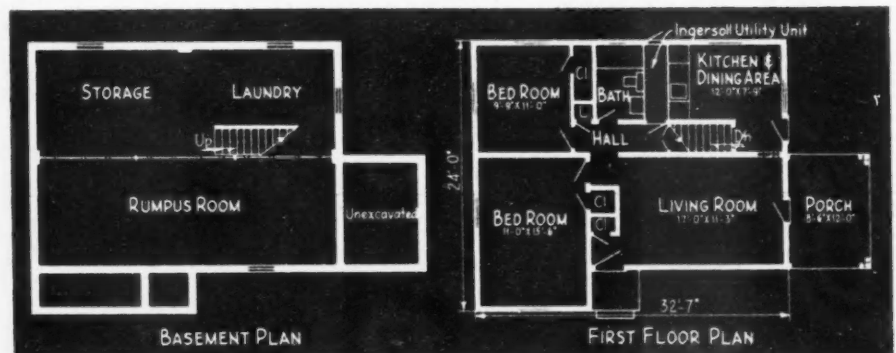
His first effort was confined to the erection of prefabricated houses manufactured by Cozy Cottages, Inc., Columbus, Ohio, but he now has under construction several houses of the conventional type, erected from basic plans worked out by him.

The houses are being erected on land owned by his parents. With a force of eighteen men under his direction, he has accumulated much of the "know how" needed to complete houses economically and satisfactorily. He personally supervises all the work.

The houses Mr. Brown is building now are two-bedroom size with living room and dinette, modern tile

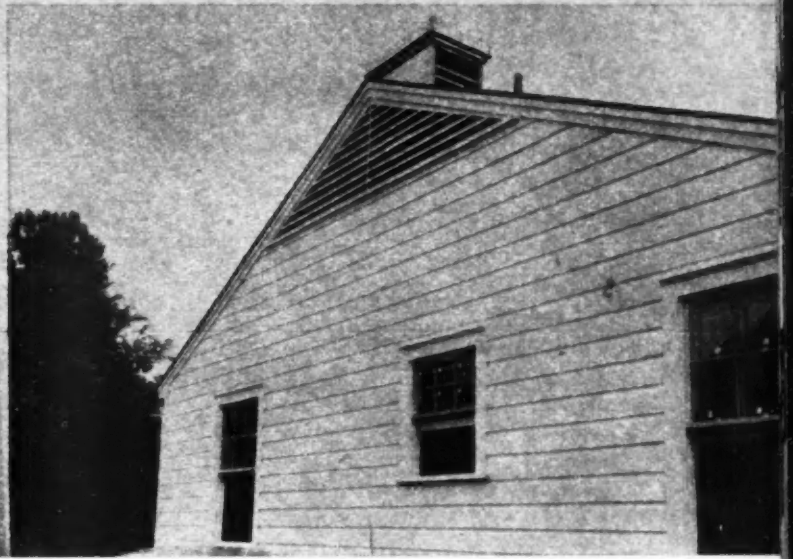
bath, kitchen with built-in cabinets, a full basement, and hardwood floors in all rooms except the bath and kitchen. Heat is supplied by warm air furnaces. All work in the houses is being done in strict conformity with FHA specifications.

Veteran Brown is very enthusiastic about his business and has great plans for the future. He intends to study architecture so that he will be qualified fully to make designs and properly judge those already prepared which he may be called on to execute. Although he has started building low-cost small houses, he is looking forward with considerable anticipation to the time when he will be able to design and construct larger, more expensive houses, as well as other structures of the small commercial type.



AN Ingersoll utility unit is integral part of this house which Brown is erecting.

# Cool Breezes for Hot Summer Days



ABOVE LEFT—Opening in hallway ceiling for attic fan. RIGHT: Attic louvers permit free flow of air from attic.

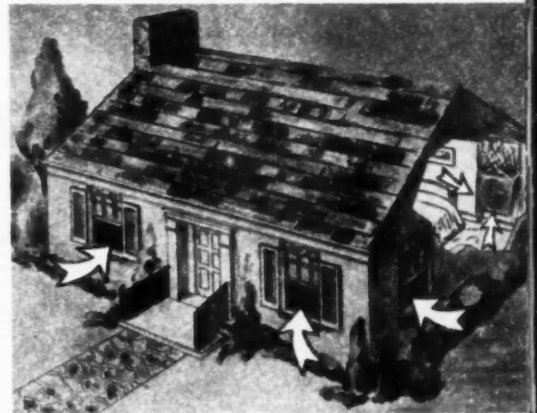
**E**NGINEERING in home equipment by manufacturers in recent years has included attic ventilating fans and exhaust fans of various types. Throughout a wide belt across southern United States this type of equipment plays a vital part in maintaining comfort in hot weather for home owners and operators of commercial establishments.

There are several basic principles concerning attic fan installation which have become established as correct for most satisfactory removal of warm air from home interiors and induction of cooler air from outdoors following hot days.

Obtaining a fan of correct capacity is, of course, basic, and most manufacturers now specify a unit

which will displace an amount of air equal to the cubic content of the building once every minute. Following determination of this factor, an opening in the ceiling of sufficient size to accommodate the unit selected must be provided. To conform with this opening, adequate exhaust openings must be provided in the attic so that air in the attic can be forced out without pressure.

Correct installation procedure is to arrange the fan so that air is blown into the attic and not outside, because clearing hot air from the attic is an important factor in cooling the house. Various satisfactory motor mountings now in use hold noise and vibration from attic fans to a minimum.

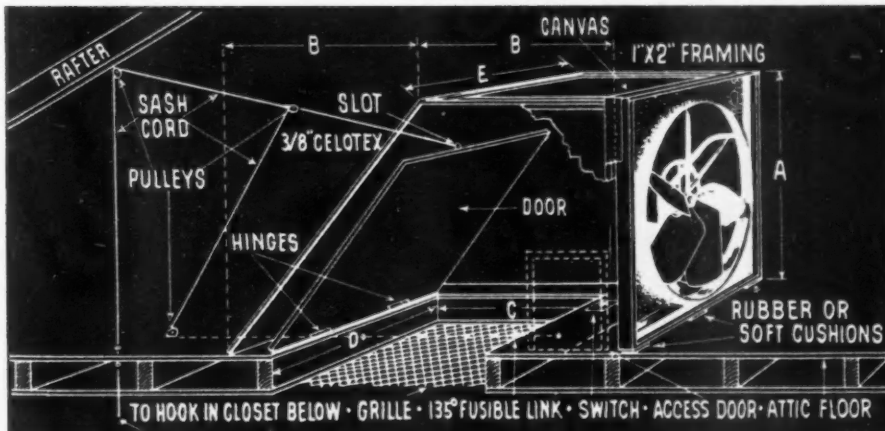


FLOW of air set up by window exhaust fan.

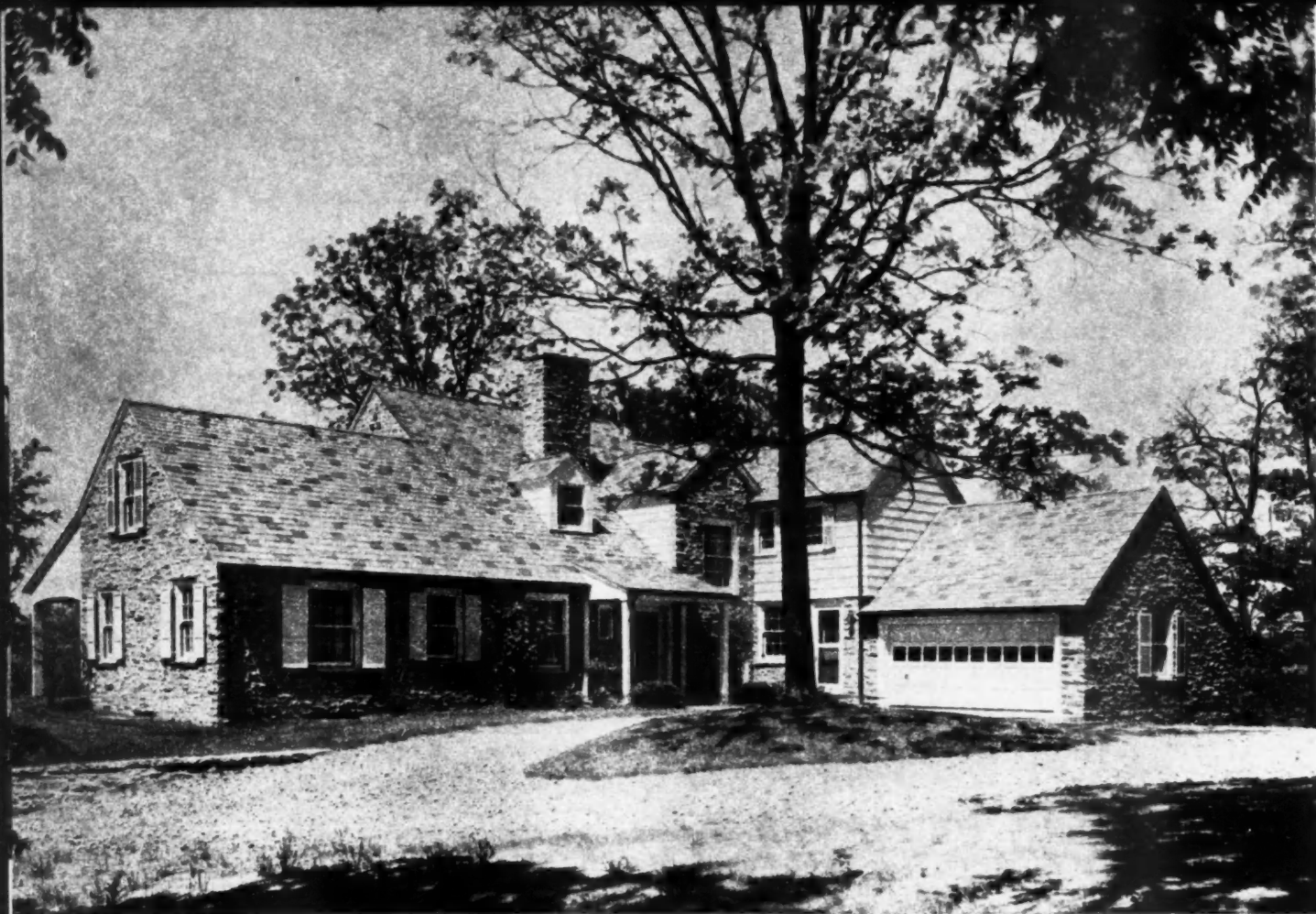


WINDOW-TYPE exhaust fans provide comfort.

Photos and drawing courtesy Shreveport Engineering Co.



THE drawing above shows details of a typical attic ventilating fan installation.



## Traditional Home Always Popular



VIEW in entrance hall with its well designed stairs and railing.

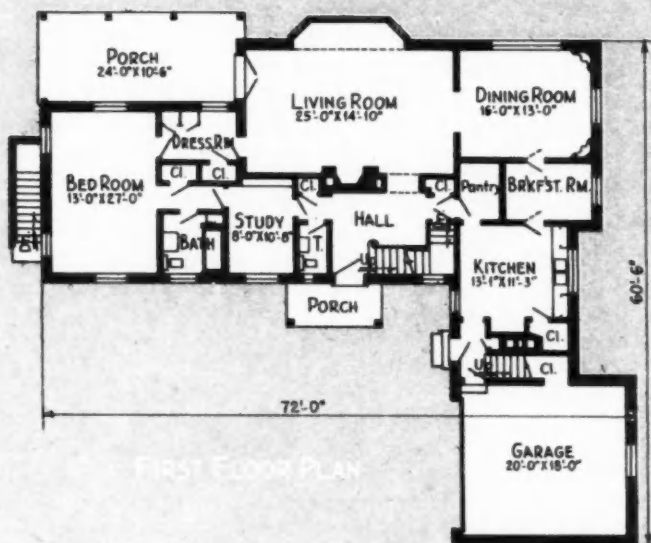
**T**HE CHARACTER of this house is not the result of the architect's desire to hold to traditional ideas and design. Rather it is an effort to work out a rationalized scheme to provide a suitable home environment for this particular family. In addition, it was desired, so far as possible, to centralize the various elements and avoid excessive footsteps. These basic requirements determined the plan, and thus the exterior.

In producing this house for Charles F. May, New Richmond, Ohio, the architect, Charles Frederick Cellarius, F.A.I.A., Cincinnati, Ohio, has conceived a design which has had a tendency to raise the entire level of residential architecture in its immediate vicinity. This house is not in any sense small, yet the arrangement and distribution of the rooms are such that a compact, unified grouping has been accomplished with a minimum of waste space. The location of the garage in relation to the main house provides an interesting and practical forecourt arrangement. Service units are faced toward the street front with living rooms and large open porch extending across the rear. Walls are laid up in random pattern field stone, with contrasting areas of white siding introduced in the second story wings.

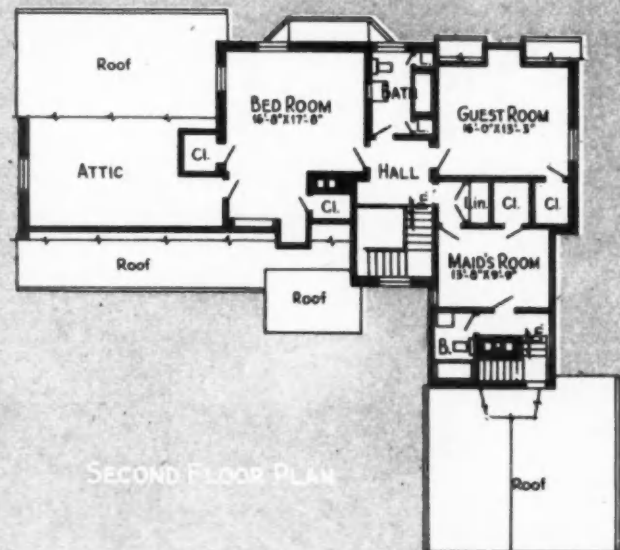
Construction outline: Poured concrete foundation with two coats of asphalt waterproofing. Frame construction, veneered with field stone. Studs brush coated with asphalt waterproofing; space back of stone insulated with rock wool; oil-fired hot air conditioning unit; electric hot water heater; slate roof; flagstone porches and walks; hardwood floors, tile bath, asphalt tile in recreation room. Cubage 58,000 cubic feet. Contractor: Wolter Construction Co., Cincinnati, Ohio.



RIGHT: Detailed view of entrance porch and surrounding areas. The combination of stone work, wood siding, white trim and slate roof is set forth in a well defined pattern. The first and second floor plans shown below provide for an excellent arrangement of rooms to meet the present and future needs of the owner.



FIRST FLOOR PLAN



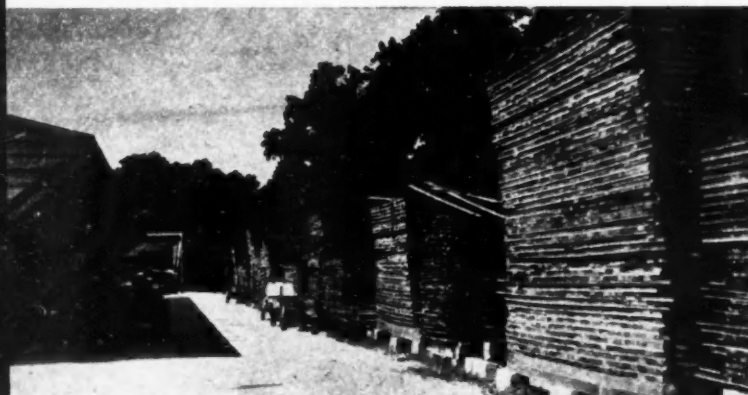
SECOND FLOOR PLAN

# House Construction By Factory Methods

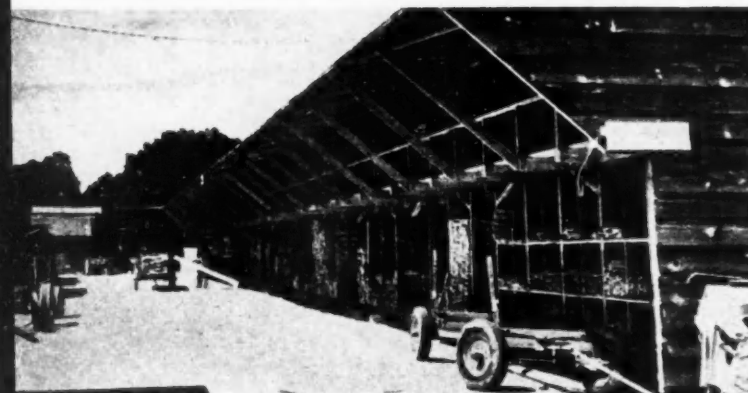
Lone Star State Home Builder Hogan adds ingenious new machines and new techniques to combination precutting, preassembly and on-site house construction to hold costs to absolute minimum. He is now making two starts daily on 700 two- and three-bedroom houses in Greenway Addition, Houston, Texas



STORAGE yard where 3,000,000 feet of lumber is kept in stock.



WHEN green lumber is accepted, it is thoroughly dried before use.



ONE of several huge storage sheds used by the Southern Builders.



**S**TERLING HOGAN, general manager of Southern Builders, of Houston, Texas, believes pre-cut residential construction offers the quickest and best way to meet the unprecedented demand for homes. Southern Builders operates a fabricating mill and builds residential developments on a mass production scale. An associated company operates a lumber yard.

A few miles from the heart of Houston is Southern Builders' Greenway Addition, a project of 700 six-room units priced from \$9,100 to \$9,500. These prices include paved streets, sewers, drainage, all utilities and other standard land improvements in residential development. More than 250 units have already been completed on the 132-acre tract and building is proceeding at the rate of two starts daily. That pace can be quickened as materials bottlenecks are broken and more labor crews are recruited. The capacity of the company's plant is several times present production.

The staff of architects employed by Southern Builders has worked out a wide variety of designs that give individuality and distinction to its homes without adding significantly to production costs at the mill or labor costs on the job. R. Graham Jackson and Frank C. Dill are associate architects.

"We can give a selection of 40 to 50 elevations by use of various sidings, trims and painting treatment in different combinations," Mr. Hogan said. "We have 20 to 30 different basic front elevations ranging from Colonial to ranch style. Roofs are available in 6-to-12 and 3-to-12 pitches. This flexibility, with different type porches, offers almost unlimited design arrangements."

Southern Builders features a two-bedroom home with 816 square feet of floor space and a three-bedroom unit with 1,008 square feet. Because trussed roofs are used, eliminating the need for bearing partitions, infinite flexibility of interior layout is possible by shifting partitions at will. In the larger unit, for example, bedrooms are usually 12 x 16 and 12 x 12 with a 12 x 22 living room. Kitchen and dining room are each 12 x 12, and the bathroom 5½ x 8. Within the limits of over-all house dimensions, sizes of the principal rooms can be varied to suit the purchaser's taste and needs without adding to costs or slowing down production.

This firm is a new type of assembly line house manufacturer with a huge lumber yard, a mill for remanu-

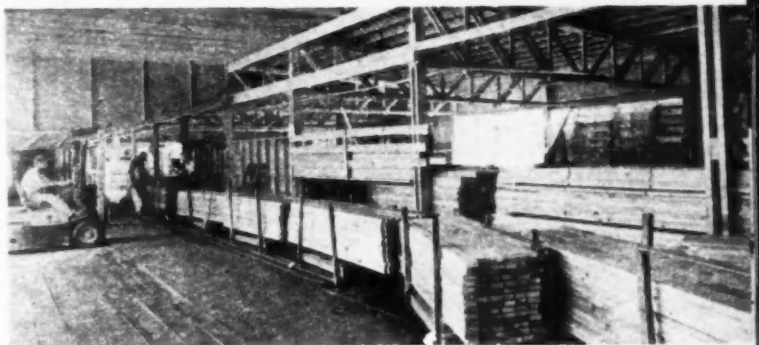


facture of lumber to any desired size, a fabricating plant which not only precuts 70 per cent of the materials that go into its houses but also fashions the parts for doors, windows, kitchen cabinets, screens and everything else that goes into the structures. As much assembly as possible is done at the plant. Window units, for example, are complete with sash balances, screens, hardware and flashings attached when they leave the plant for the job site. "Trimming out time on the job is cut one-half by precutting and preassembly in the shops," Mr. Hogan says. "This permits us to frame our 1,008-foot house on the building site in three and one-half to four hours. Even if the framing materials go to the job knocked down, no more than one day is needed to finish framing."

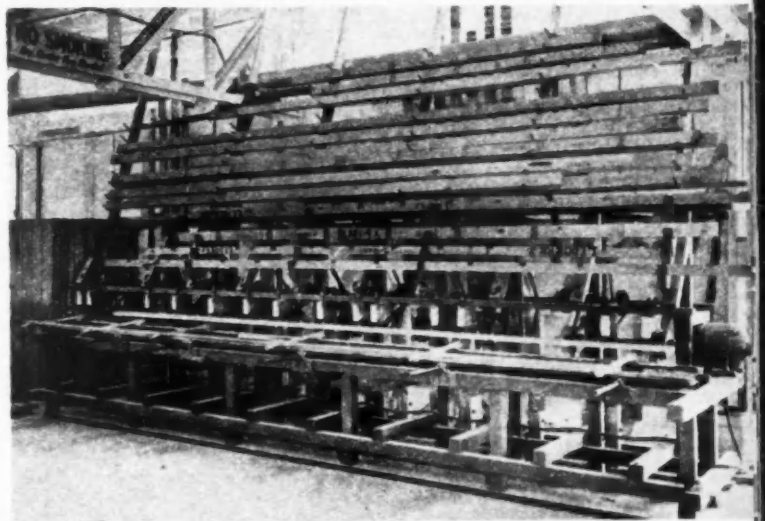
These savings in labor are duplicated in nearly every step of the construction. Approximately 10,000 feet of lumber go into a six-room house built by Southern Builders. All of it is precut except 3,000 feet of siding and sheathing.

Wall frames, partitions, roof trusses and other framing components are preassembled in the plant on sturdy jigs. Parts of the various framing assemblies are routed to the proper jig tables where, usually, two men assemble and nail them together with ring shank nails to assure sturdiness.

The most important machines in Southern Builders' plant will not be found in other precut operations. They were invented and designed by J. P. Lawrenson, a member of the firm who disdains the title of "efficiency expert," but who will settle for the position of technical advisor. These machines dado plates for the location of all studs and also dado studs for the location of headers and other members. Material up to 20 feet in length can be handled and up to 10 dados can be cut at required spacings and to any depth or width at one operation. Two men can operate one of the dado machines, which will complete six operations a minute. In ordinary on-the-job construction, a first rate carpenter would require hours measuring and marking a similar set of plates and studs and there always remains some doubt of the accuracy of his measurements until the framing is in place. In the Southern Builders' fabricating plant workmen on the jigs merely place all members cut to length in the dados on control members in the jigs and the frame cannot be off-size or off-square.



**LUMBER is handled mechanically from cars to fabricating machines.**



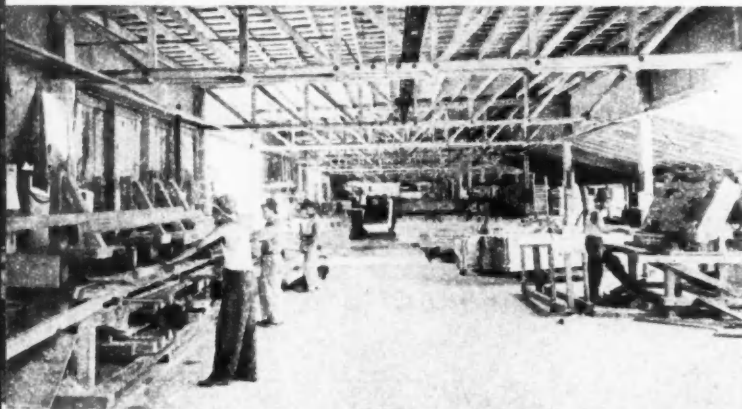
**INGENIOUS plate dadoing machine developed by Southern Builders.**



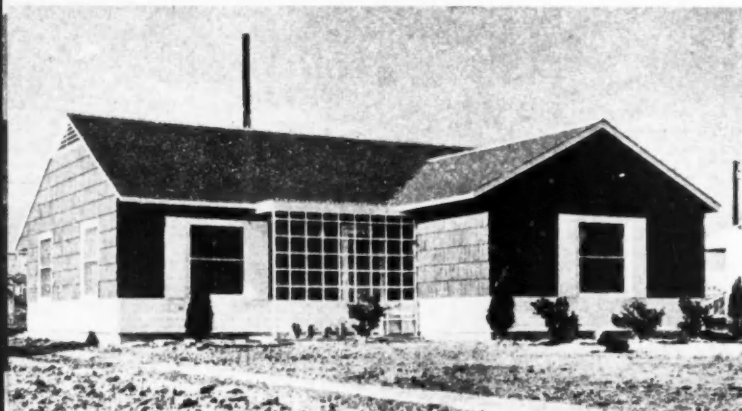
**GENERAL view of one alley in plant showing two dadoing machines.**



**SOUTHERN BUILDERS** have found that machines in the plant can do more work than ten men in a conventional on-the-job operation.



**TWO** men can turn out 360 pieces an hour cut to length and dadoed.



\$9100-\$9500 price on these houses includes garage and driveway.



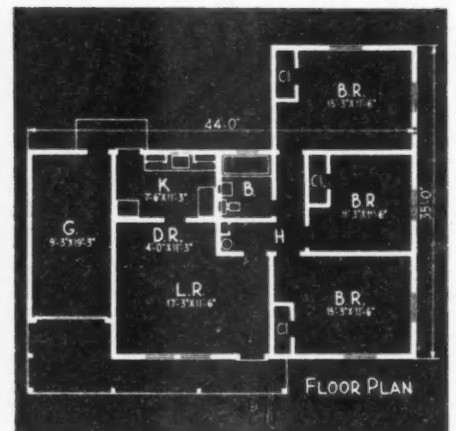
**TWO**-bedroom job with 3-to-12 built up roof, attached garage and wide overhang in front.

Another ingenious machine, also designed in the plant, finishes doors for the homes, profit and mortised for butts and locks. Still another machine turns out trim for windows and doors, cut to exact size, beveled and mitered.

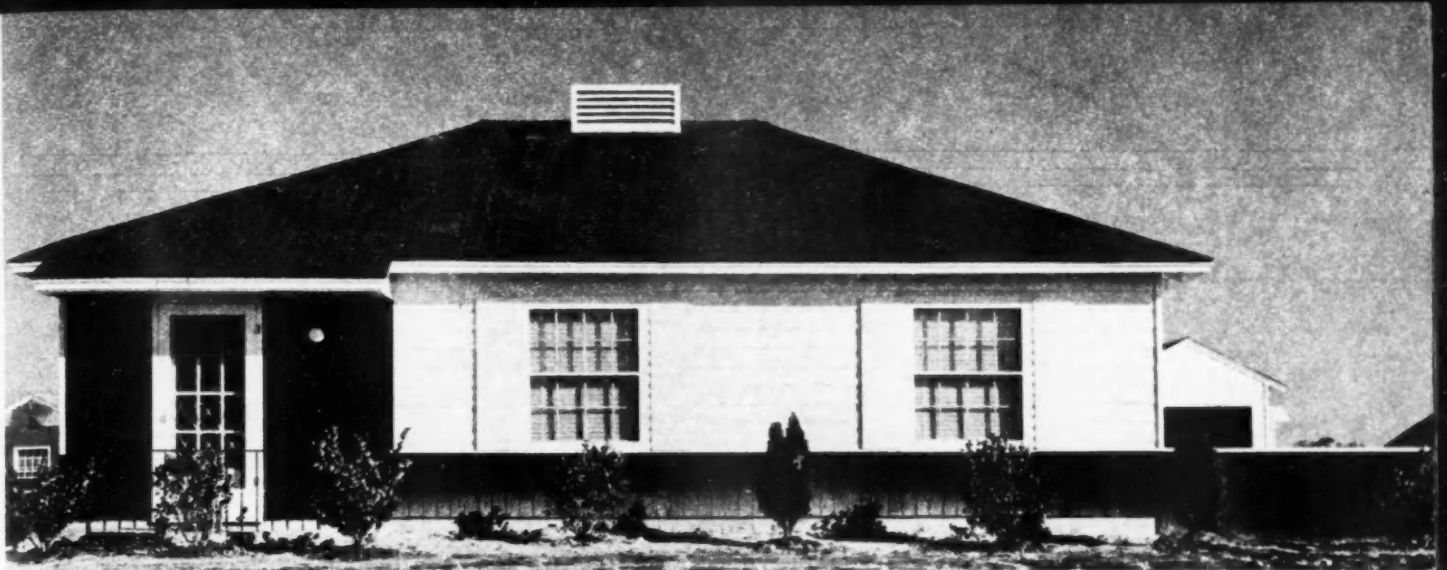
The bathroom wall partition is assembled in the shop on a jig. It is backed for plumbing and roughed-in for cabinet installation. When plumbing is installed on the site, the kitchen partition is put into place and the plumbing lines are covered. The plumber completes his job without any cutting or fitting on the site.

Flexibility of shop assemblies permits workmen on the job to carry out the wide variety of designs offered in Southern Builders houses. When a change in design is called for, a quick change in the dadoing machines and lengths of pieces turned out immediately provides workmen on jigs with the correct assembly pattern. The mechanically cut dadoes, mortises and joints mean perfect fits are certain for rafters, ridges, eaves, walls, doors and windows.

The savings possible through use of power equipment in the Southern Builders method of house construction begin with the arrival of lumber from sawmills. A Southern Pacific spur enters the property and the lumber is loaded from cars on dollies or fork lift trucks which either deliver the lumber to the point where it will be used or stack it in one of the modern storage sheds. The plant's remanufacturing facilities permit purchase of any lumber sizes offered that can be cut to desired dimensions for use in the operation. This resizing process occurs throughout the series of cutting and fitting jobs. All odd sizes and short pieces accumulated are not thrown out, however, but are reworked







**ATTRACTIVE** variation in application of siding, use of low fences and iron grille work produce infinite variety of elevations.

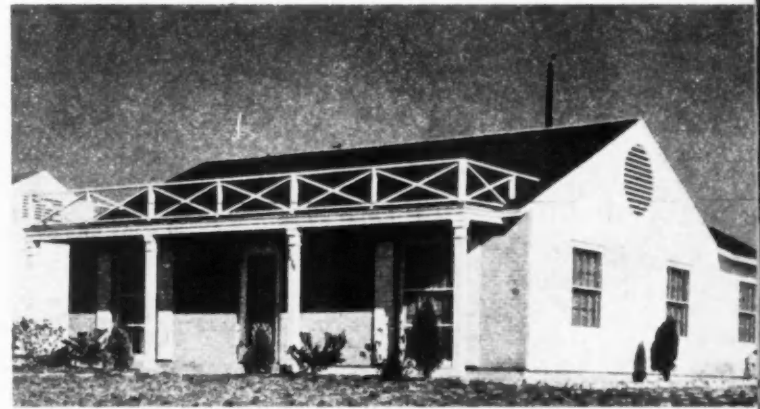
and used, lengths as short as eight inches finding their place eventually in the framing of small louvers and for moldings. At a normal weekend, the discarded lumber from this plant would not suffice for more than a very small bonfire. Mr. Hogan insists on neatness and orderliness throughout the plant and there are no piles of discarded materials lying about. Floors are clean, machines are kept neat and alleys are always open for passage of those for whom they were intended.

Specialization in the plant boosts man-hour output on both precutting and assembly work. Plant employees are skilled in one or more processes such as operating the dado machines, assembling doors, windows, kitchen cabinets or some such operation. All milling operations are on a 50-unit schedule. Interior fittings such as plumbing, cabinets, hardware and other components are warehoused at the plant with a minimum supply for 100 houses on hand at all times.

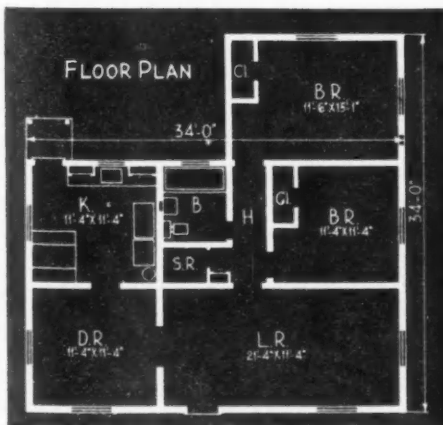
Twelve men, with six helpers, each day turn out the more than 14,000 feet of precut materials for two six-room houses. This includes completion of doors, windows, screens and other standard equipment along with the assembled sections which slash hours from on-the-job working time. The same specialization that prevails in the plant also prevails on the building site, where specially trained crews of men move from house to house. On crew puts up the outside framing, another the roof, a separate crew applies siding and still another applies roofing. Electricians and plumbers do their portion of the work at the proper time and finally, painters add color combinations previously determined according to a code worked out by the Southern Builders organization.



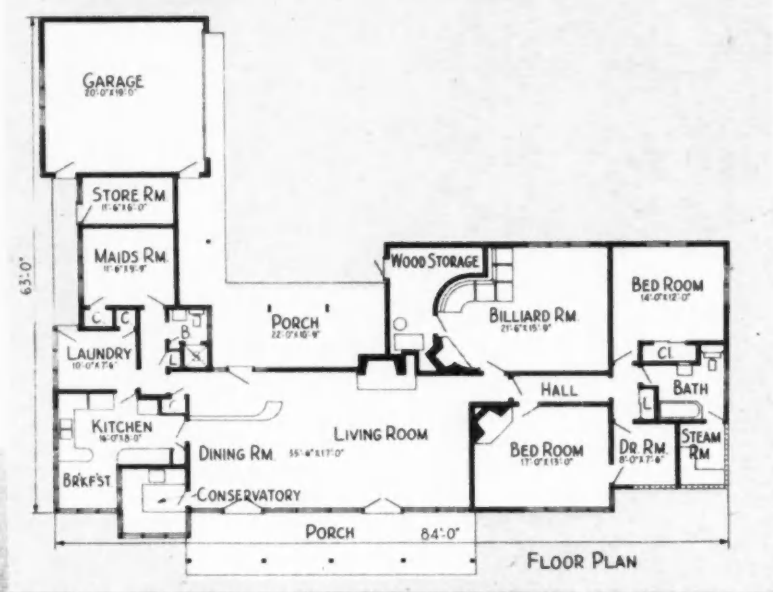
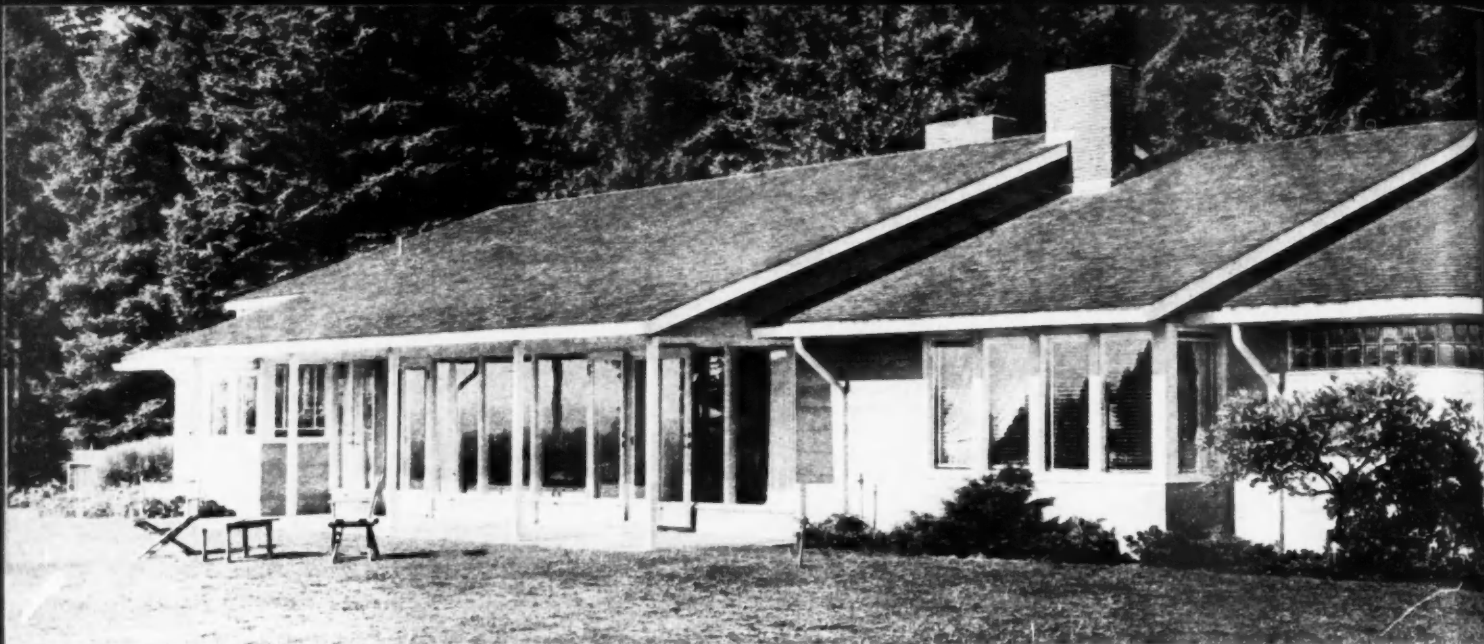
**DOORS, windows, louvers, trim, etc., are fabricated, fit in plant.**



**STONE or brick is used occasionally to add variety to elevations.**



**ASSEMBLY** line system is used on job site with separate crews doing specialized jobs.



## Spread Wide For Comfort

This suburban home at Lynnridge, Portland, Oregon, was designed by Van Evera Bailey, architect.



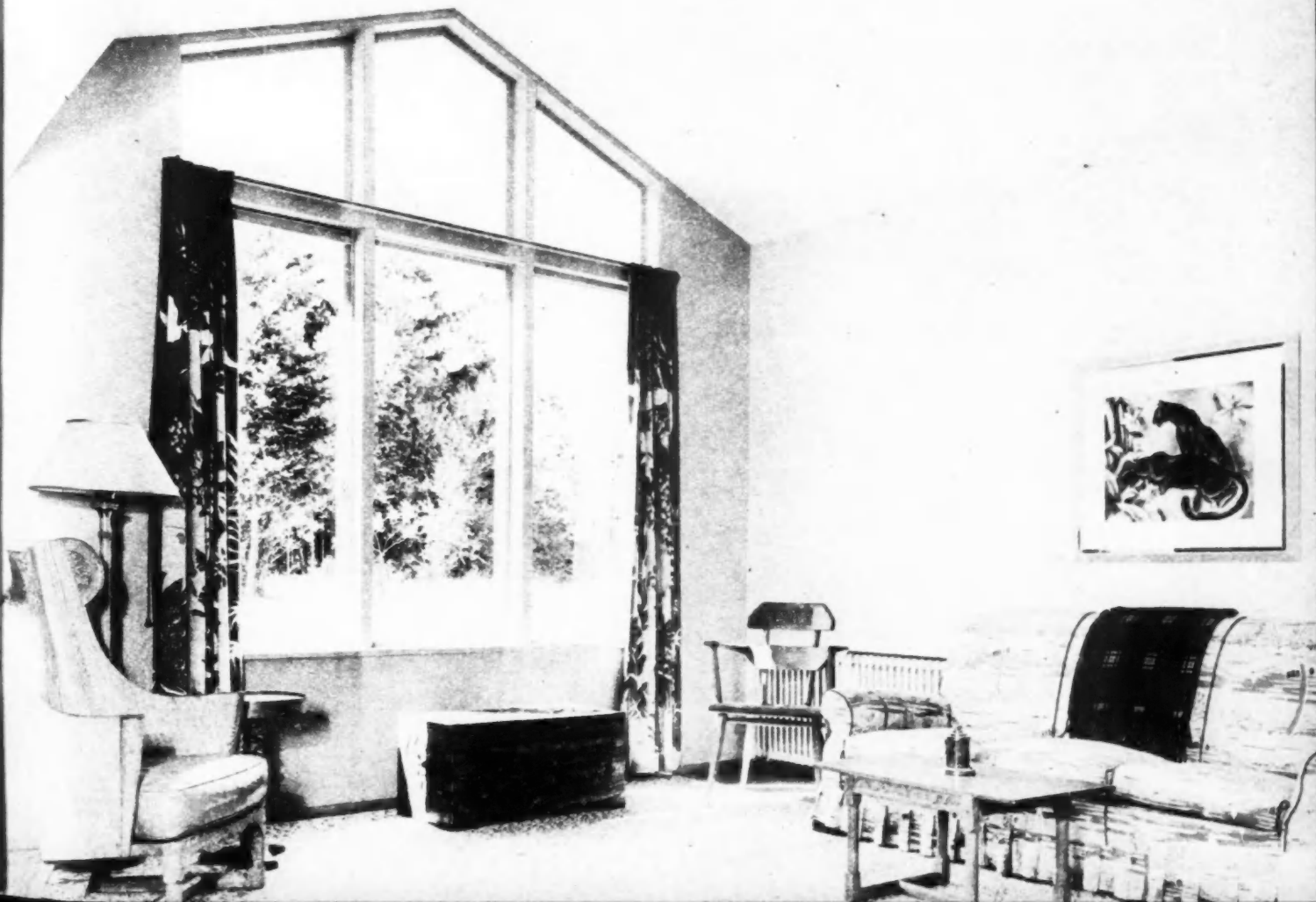
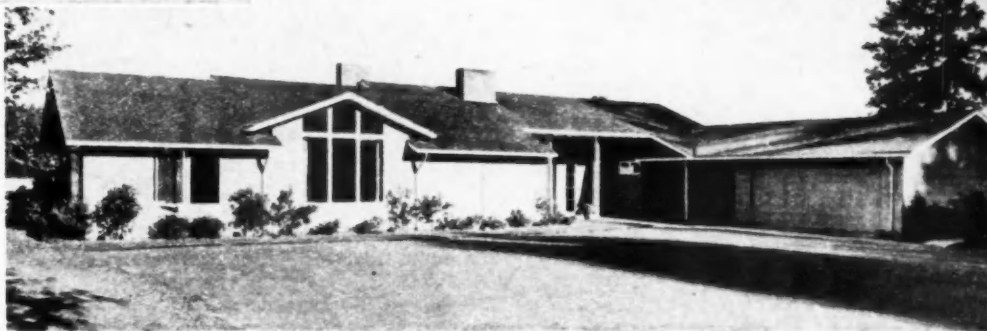
EXHIBITING many of the special features of a "postwar dream home," this house was designed primarily for the comfort and relaxation of its owners. It is certainly not at all cramped either as to size or layout—a far cry from the restrictive housing which was so prevalent during the recent wartime period.

*Photos by Leonard Delano*



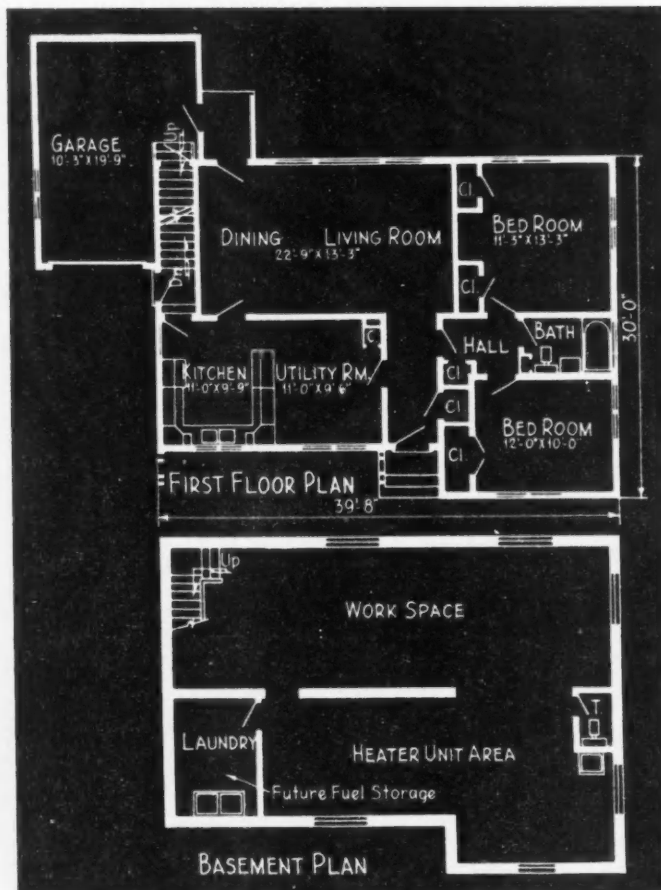
RESIDENCE for Mr. and Mrs. James I. Hessler measures 84x63 feet, contains two master bedrooms, impressive living-dining room, a game room and a conservatory.

THE high studio window with north light is a feature of the billiard room, below, and gives interest to the rear elevation, shown in the photograph at the right.



**NEW**

**SUPERIMPOSED** over the instrument panel, at left, where temperatures both inside and outside the building can be determined at will, is the photograph of the new warm air research residence. It is the first structure in the University's new Home Research Center for work of the Small Homes Council. The south exposure is planned to study solar radiation factors, where large windows bring in winter sun and broad eaves screen off sun's rays in summer.



**I**MPORTANT NEWS for home planners and builders is the opening of the new Warm Air Research residence at the University of Illinois, the first structure to be completed at the University's new Small Home Research Center. This house replaces an older structure built in 1924, and the many important home heating findings obtained in that house give some indications of how important this new one may prove to be.

The house is a five and one-half room modern home with gray shingled exterior and white trim. It was designed by Professor D. B. Lindsay and Professor F. M. Lescher of the University staff. It faces north, with the kitchen, utility room, and one bedroom located from east to west on this exposure, with the large living room and one bedroom across the south from east to west. The attached garage is on the southeast corner and extends southward from the house, opening north.

All windows throughout utilize a new type of sash that glides horizontally. Storm sash are attached to the movable parts of these windows, which close tightly through use of weatherstripping. These can be left in place all year, utilizing their insulating properties against summer heat as well as winter cold. The windows may be lifted out entirely from the inside for easy cleaning. The Thermopane window in the living room is flanked by narrower windows of the same movable type as in the rest of the house to permit studies of comparative heat transmission through the two different types.

The basement has a full height of eight feet, and has full sized windows in areaways to permit entrance of maximum amount of light. It can be fully heated.

# Warm Air Research Residence

**Looking not only at today's problems, but also at tomorrow's, the National Warm Air Heating and Air Conditioning Association has turned over to the University of Illinois the new research home devoted to improving different types of heating systems**

The utility room on the first floor was designed to permit location of the heating plant there for studies of basementless types of houses. For such studies, the basement windows will be left open, and the basement unheated.

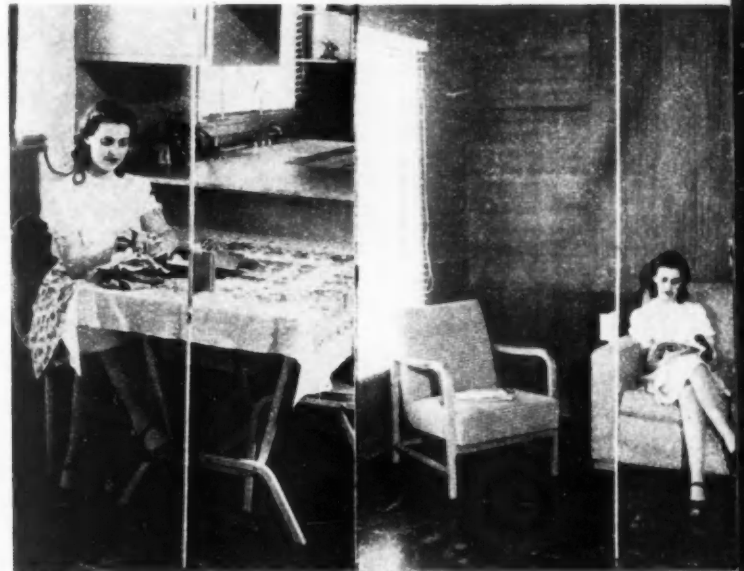
Rooms are paneled with plywood-mahogany in the living room and birch elsewhere. The wall and ceiling panels are screwed in place to facilitate changes in the heating system, in the wiring of thermocouples, or for additional temperature measurements within the building structure.

To enable use of the floor or ceiling as a heating panel, these are built on open web steel joists. Over the floor joists is a 2-inch gypsum subflooring with an asphalt tile finish floor. This construction is totally fire resistant and will permit warm air to be circulated without the use of duct work in the joist space. The ceiling construction is also arranged so warm air may be circulated through it.

The chimney is of a new type of construction. It is made of molded asbestos tile instead of brick and mortar, and measures only about 10 inches in diameter which is claimed to be usable for all fuels. A similar flue is installed for the water heater.

The house is completely equipped and furnished. It is occupied by the special research assistant in charge (R. W. Roose) and his wife. This provides conditions of actual home usage and opportunity for the engineer to observe personal comfort conditions throughout the day and night as well as instrument reading.

Instruments installed in this house give a complete picture of the indoor comfort conditions and the cost



**ABOVE** left is utility room. Pipe in foreground supports thermocouples for measuring air temperatures. Living room is at right.

of producing them. A central instrument panel in the basement has 240 switches, connected through four miles of wires to 240 thermocouples, reporting the temperature outside and inside the house, within the structure and in the heating plant. By a flip of the switch, the temperature can be noted from any one of the 240 points.

In the center of every room a slender pipe protects wiring and supports thermocouples at 3 inches, 30 inches, and 60 inches from the floor and 3 inches from the ceiling. Thermocouples are embedded in the floor and in the ceiling at each of these standards. North and south walls have thermocouples located to extend 3 inches into the air on each side, placed on the wall surfaces, and at points through the construction, to give an 8 point temperature cross section through the wall from air to air. Thermocouples are also located on and in the windows to study heat transmission through them.

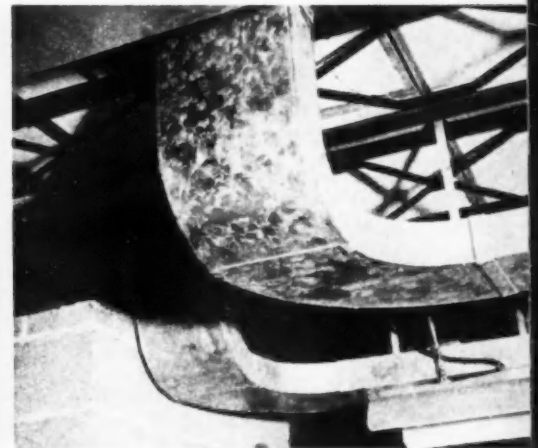
Other instruments used in the house are recorders  
(Continued to page 178)



**STATION** is adjacent to house with instruments to record outdoor weather conditions.



**RESEARCH** worker is pointing to flue of molded asbestos tile replacing conventional flue.



**HORIZONTAL** ducts same cross section as vertical, reducing number of fittings required.

# The NAHB Answers a Veteran's Letter

**Home builders tell their side of current controversy over high prices and delays in satisfying nation's housing needs**

*By Frank W. Cortright*

Executive Vice President,  
National Association of Home Builders



I AM GLAD you wrote me as you did, H.M. It's no wonder you and other veterans are thoroughly confused about this housing problem. The fact is that there are so many "experts" talking and writing about it and so many government agencies issuing directives and releasing propaganda, that even we who are building the houses are confused most of the time ourselves.

## Why Do We Criticize the Government?

In your letter you say, "You criticize heavily and lambast endlessly the fact that the government has had anything to do with the housing problems throughout the country and demand that they 'keep hands off.'"

Here are some of the reasons why we "lambast the government" and ask for a free economy in housing.

During the regulated war years when we built more than a million low-cost homes for sale and rent to war workers, we learned a number of things. We learned that government is not as experienced, as skilled, as resourceful, nor as courageous as private enterprise. We learned that it is shot through with politics, favoritism, and maladministration. Government employees and administrators range all the way from unselfish, capable and high-principled individuals, to industrial derelicts, proponents of a planned economy—and, according to President Truman, some outright Communists. We also learned that Government experts cannot hold in check in peacetime the fundamental laws of supply and demand by artificial manipulation.

## Do You Know These Facts?

Do you know that this industry, before the end of the war, urged the Government to permit us to start building homes which we pledged would be held for veterans and that it turned us down?

Do you know that as early as 1944 the NHA refused our plea because they said the construction of additional housing in a number of cities would produce an "over-supply of housing"?

Do you know that top Government economists planned for a serious shortage of employment by this time and not for a serious shortage of houses?

Do you know that Government in 1945 permitted industrial and commercial construction months before it permitted us to start building homes?

Do you know there were over 2,000 prices on one-inch boards alone; that plain pine board was priced by the OPA higher than the same board after it was milled into

flooring; that there were hundreds of such situations just as ridiculous?

Do you know that the basis of the Wyatt housing program was set up by OPA Administrator Chester Bowles on the premise that private enterprise would fail and Government housing would have to be substituted?

So, in our opinion the government has made a bad mess of the housing situation since V-J Day.

## How Many Homes Can Be Built?

You ask why we are not producing more homes and producing them faster. Last year we completed nearly half a million homes in spite of the worst handicaps that ever harassed builders. We had heartbreaking shortages of building materials—serious labor problems—and literally hundreds of Government rules, regulations, restrictions and controls under the OPA, CPA, NHA, FHA, VA, OTC, RFC, and other alphabetical agencies that were always changing rules in the middle of the game—and still are.

This year, we home builders would like to do nearly a million housing units for rental and sale—counting those we complete and those we hope to start. If we can do that under existing conditions, I think it will be a fine record and will take the edge off the most critical housing need.

## Where Does the Housing Dollar Go?

Now, as to the cost of new houses. You should remember that the cost of building a house is made up of three main things. Thirty per cent of your dollar goes to building labor on the site. Forty-five per cent goes to pay for the lumber, plaster, brick, heating, plumbing and all the materials of which homes are constructed (and the major part of that goes to labor). Nearly thirteen per cent goes to pay for the land and utilities, and only twelve per cent to the builder for overhead and profit.

We all know that the average veteran's income is not high enough to permit him to buy houses at today's cost in many areas. His primary need is rental accommodations. Because of this we have initiated a national campaign, and I am glad to say that we are starting a totally unprecedented volume of homes and apartments for rent.

## How Can Maximum Production Be Reached?

You can help us in reaching our maximum production by supporting us in the following objectives:

First, current financing problems must be solved. This means that those who lend mortgage money must stop demanding large

down payments from veterans or the home loan provisions of your GI Bill of Rights will be emasculated.

Second, the current wide differential between the appraisals of the Veterans Administration and the FHA must be eliminated through cooperation between these two agencies. The requirements and the processing of FHA Section 608 rental housing applications must be simplified and speeded up.

Third, we must stabilize and lower construction costs. This means that manufacturers and distributors of building materials through increased efficiency and competition must produce in greater volume. This volume and a return to firm prices will enable us to cut in half our construction time and reduce our price accordingly.

Fourth, those subcontractors who have a virtual monopoly on important parts of home construction must reduce their mark-ups to a fair profit figure.

Fifth, if there are home builders who are overcharging the veterans they certainly must do the same.

Last and most important of all, labor must realize that both on the building site and in the manufacture of materials, they play the greatest part and constitute the largest item of cost.

## Legislation Won't Build Houses

I'm sure you know that house-hungry veterans have been used as a pawn by many with political ambitions.

The panacea offered is that of government control, direction and competition. A renewed effort for a permanent National Housing Agency is now being made. The most fraudulent propaganda that has ever been foisted on the veteran is the statement that the TEW-WET Bill (Taft-Elender-Wagner—Wagner-Elender-Taft) will produce 15 million homes for veterans in the next 10 years. Actually, the Bill would do more to discourage home production than almost anything we can think of.

## Most Home Builders Are Veterans

In conclusion, I want you to know that we are not trying to "fool any of the vets with the home builders' line," as you suggest. I would call your attention to the fact that there is probably not a home builder in the country who was not personally involved in World War I or World War II, either as a veteran or through sons and brothers who are veterans.

Given time and opportunity, the home building industry can solve all of its current problems in providing good homes for you and others—and do it in the American way.

# Planned for **PRIVACY**

Outdoor living featured in  
Beverly Gardens homes

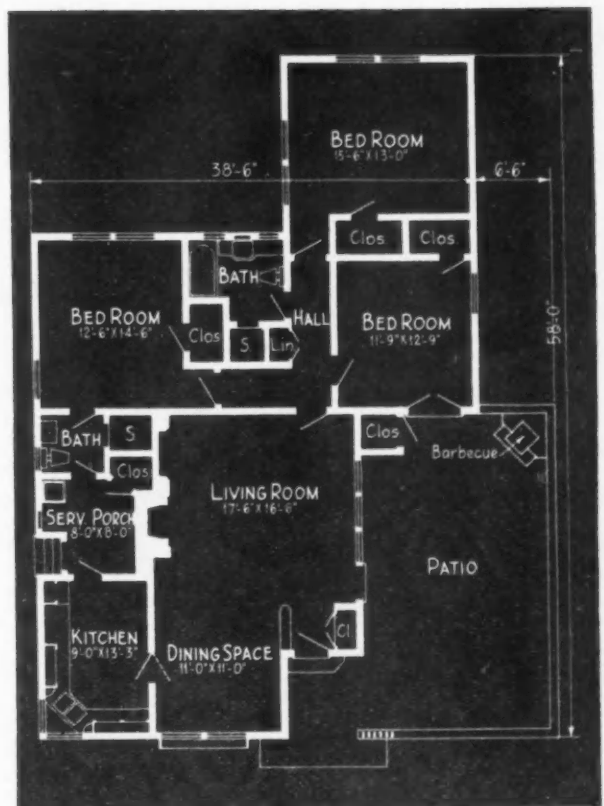


SEVERAL variations of the terrace and porch, as well as a reversal of the plan arrangement, are shown in the photographs of one of the popular models, recently completed in Beverly Gardens, Los Angeles suburb.



SEVERAL variations of a typical house design, of which there are four basic models, are shown on this page. This is one of a group of 53 fine homes that have recently been completed in Beverly Gardens, a suburb of Los Angeles, by Bollenbacher and Kaplan, builders, for the individual who is able to pay \$20,000 or more for a home.

All the houses have been designed by Frank W. Green, architect, of Glendale, Calif. This house and the others were all planned for gracious living. The large living room and the outdoor terrace have fireplaces. Three-quarter-inch thick mahogany planked floors are laid in the living rooms. The bedrooms have ample closet space. The kitchen has extra cupboards with space for everything the housewife may need. An automatic forced air gas heater is provided. A two-car garage is included.



OUTDOOR activities are centered around the high walled patio.



**CARL A. PETERSEN**, left, and Arvid C. Petersen, father and son team, who developed adjustable metal jigs for HomOgraf Corp.

## Metal Jigs Developed for Preassembly of House Parts



**ALBERT P. WITTMAN**  
General Manager  
HomOgraf Corporation

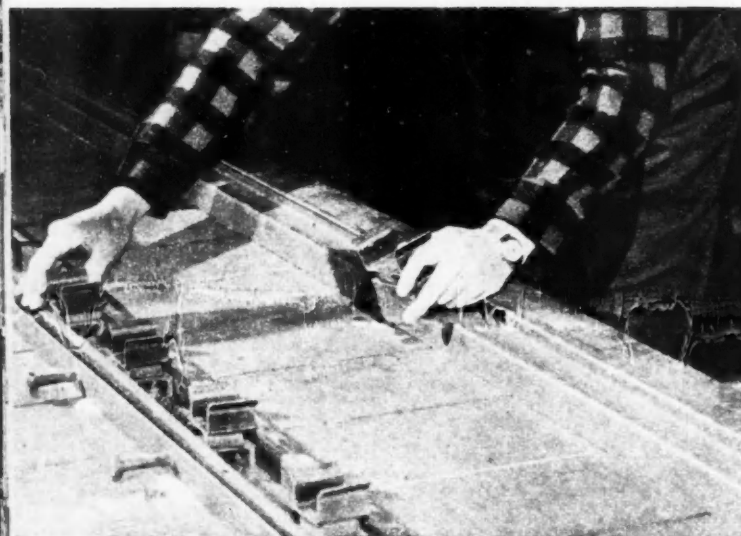
**System of patented flexible metal jigs, which can be easily changed to fabricate various house framing parts, may be used by builders under license plan set up by manufacturer.**



**VIEW OF off-site fabricating operations. Note the narrow gauge track on which a cut-off saw can be moved to lumber piles.**



**ASSEMBLING on jigs set up outside the workshop which houses more jig tables. Lumber is brought here by roller conveyors.**



**CLOSEUP of metal jigs that can be adjusted within a few minutes to assemble almost any type or style house wall section.**

**A** SYSTEM of custom house construction utilizing mass production methods developed by Arvid C. Petersen, Detroit, Mich., is now being offered on a national basis to all large scale builders and lumber dealers through a licensing program set up by HomOgraf Corporation, East Detroit. The system is built around a set of specially designed and patented metal jigs which are quickly and easily adjustable for the assembly of an infinite variety of wall and roof sections.

The policy of HomOgraf Corporation is to grant exclusive area licenses to home builders and lumber dealers, to use its completely engineered practical and adjustable jigs and fixtures on a nominal rental basis.

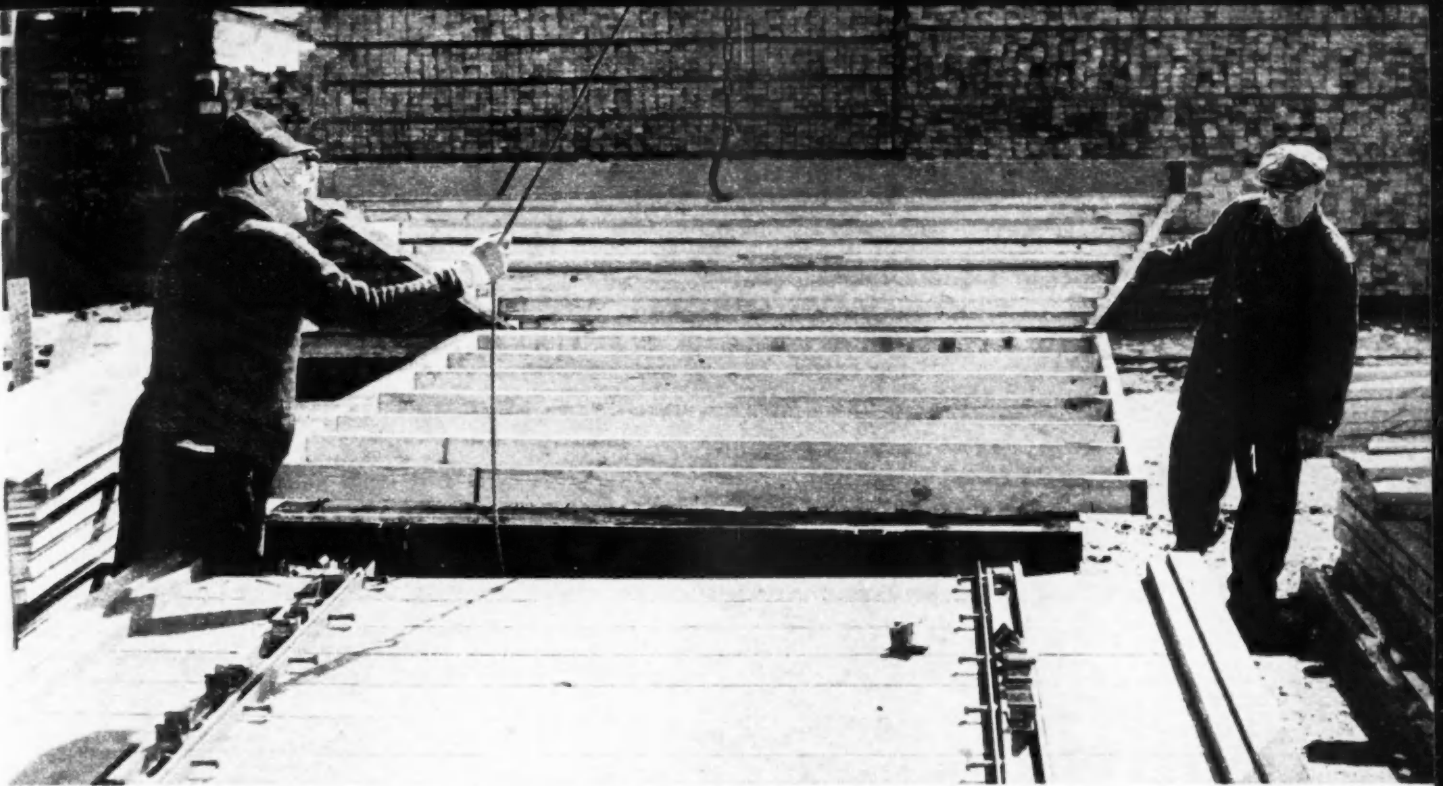
Developed over five years ago by a builder and lumber dealer working in cooperation with each other, the system's purpose is to solve the problem of producing a conventional home better and faster through modern mass production techniques. Since it was developed, more than 1,000 homes have been built at a good profit to the builder. In cases where the builder does not have power saw and woodworking equipment of sufficient capacity to accommodate the HomOgraf system, it has been found practical for him to work with a lumber dealer who usually has at least one radial arm saw and other light equipment of sufficient capacity to handle the precutting operations.

Exterior elevations of houses built with the HomOgraf system may be varied to suit the tastes of architects and purchasers, including the exterior covering which may be any material such as wood, brick or stone veneer, asbestos cement shingles or other material. With this sort of set-up on exterior elevations and coverings, there need be no monotony in appearance.

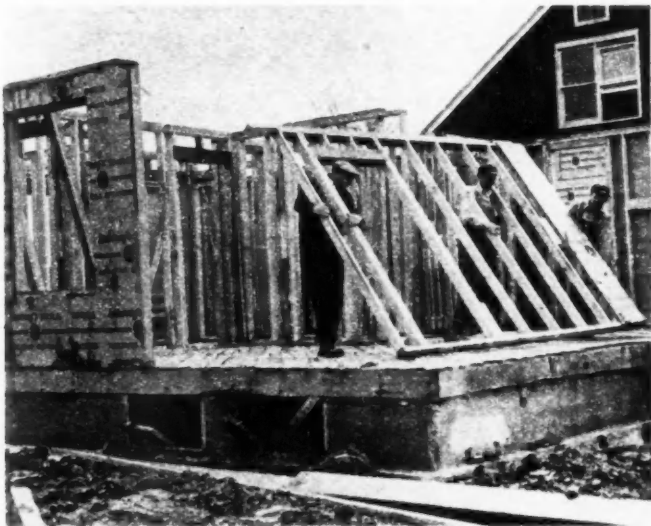
All the wall sections, floors, roofs, cabinets, and stairs can be made in a woodworking shop on unvarying jigs assuring maximum accuracy and sturdiness for a home of this type. The metal jigs can be adjusted within a matter of minutes to fabricate wall sections in an infinite number of variations. Thus a builder using this system of precutting and preassembly operation can fabricate a wide variety of home designs to meet the diversified tastes of the buying public. The system also permits the use of wet or dry interior wall construction, or of any type of trim.

Any licensee who chooses to operate under the HomOgraf system can begin fabricating operations virtually overnight because there is no large investment involved in inaugurating the system, which entails practically no increase in overhead. One operator working under the HomOgraf system has precut and preassembled sections for as high as 25 houses a week with these facilities.

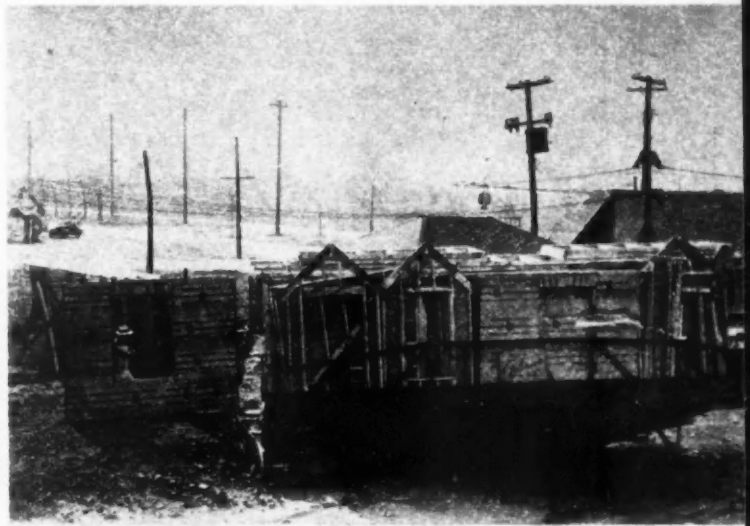




AS each section for a house is completed it is loaded on a waiting trailer which is pulled to the site where house is assembled.



EACH wall section assembled on these jigs is erected and nailed in place in the conventional manner over regular subflooring.



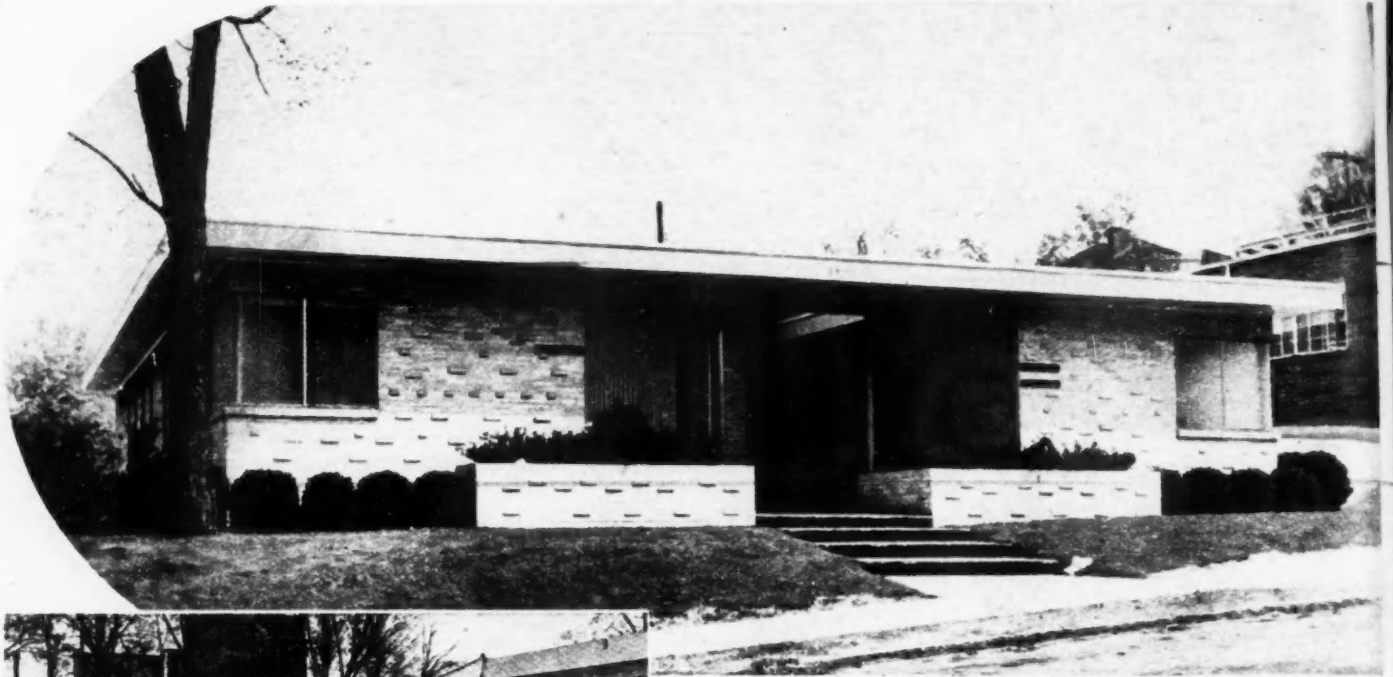
ENOUGH sections for two complete houses are being loaded on this trailer. No section is too large for two to four men to handle.



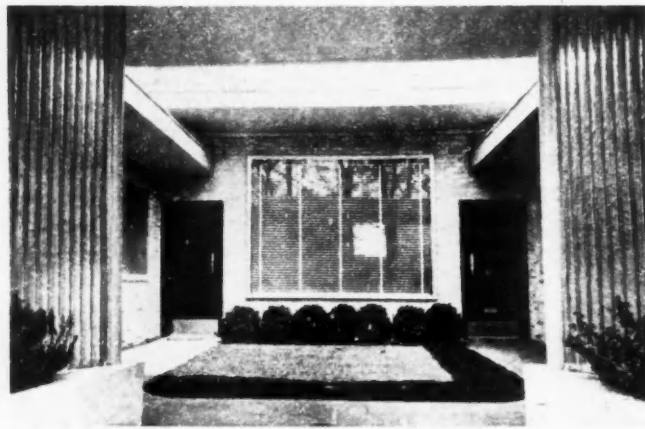
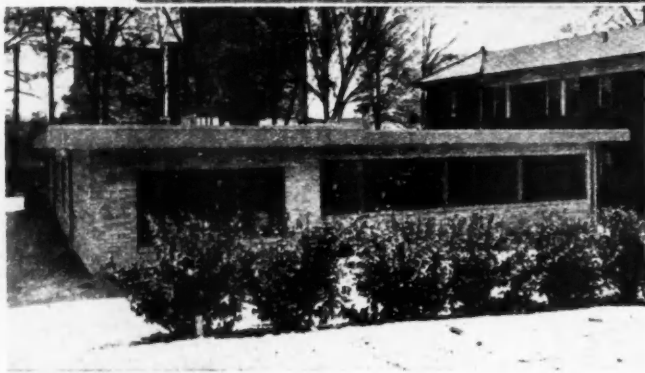
COMPLETED brick veneer house for which wall and roof sections were precut and preassembled with metal jigs in off-site workshop.



PARTS for these houses under construction were preassembled in off-site workshop on metal jigs which permit wide variation in design.



FRONT of building presents restful appearance. Rear view left.



CORRUGATED glass wings frame the entrance to uncovered court.



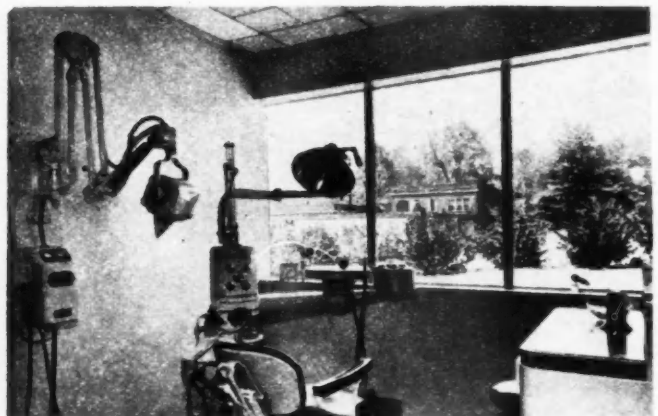
PORTION of reception room with receptionist's desk in alcove.

## Utility and Beauty in

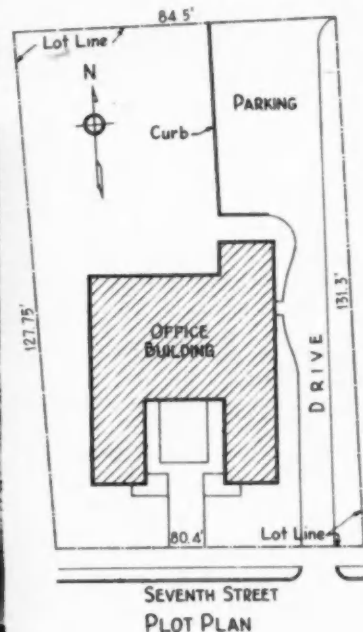
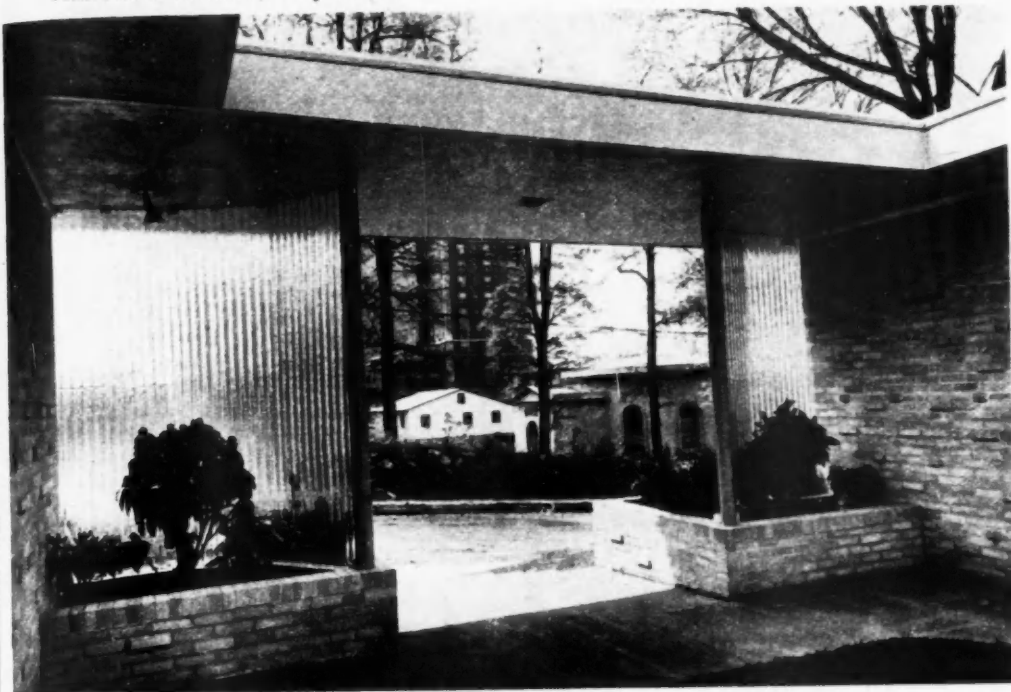
**A**N unusually attractive one-story dental clinic building was recently completed in Atlanta, Ga. John Cherry, architect who designed the structure, very effectively combined modern building materials with functional design to create a medical building which typifies the dignity and professional precision of the practice of dentistry.

Located above street level on a thoroughfare with a slight slope, the flat-roof with wide overhang, large glass areas and garden-type entrance cannot help but prove inviting and restful to patients. Effective landscaping emphasizes the attractive points of the building, not only from the street side but also within the entrance court.

The 40x60-foot building is set on a monolithic concrete slab. Cavity walls of concrete brick, with the exterior skintled, are generously broken with large glass areas, much of it either corrugated or fluted. The building is completely sealed, with no windows that can be opened. A year-round air conditioning plant maintains a constantly even temperature. The roof consists of 7-inch steel beams which support Steeltex covered with a concrete slab. Four inches of mineral wool above interior ceilings assure minimum heat loss in cold weather and



ONE of nine well-lighted, airy operating rooms in the building.



BEAUTIFUL effect is achieved at night by use of spotlights in corners of entrance court.

PLAN shows driveway, parking area.

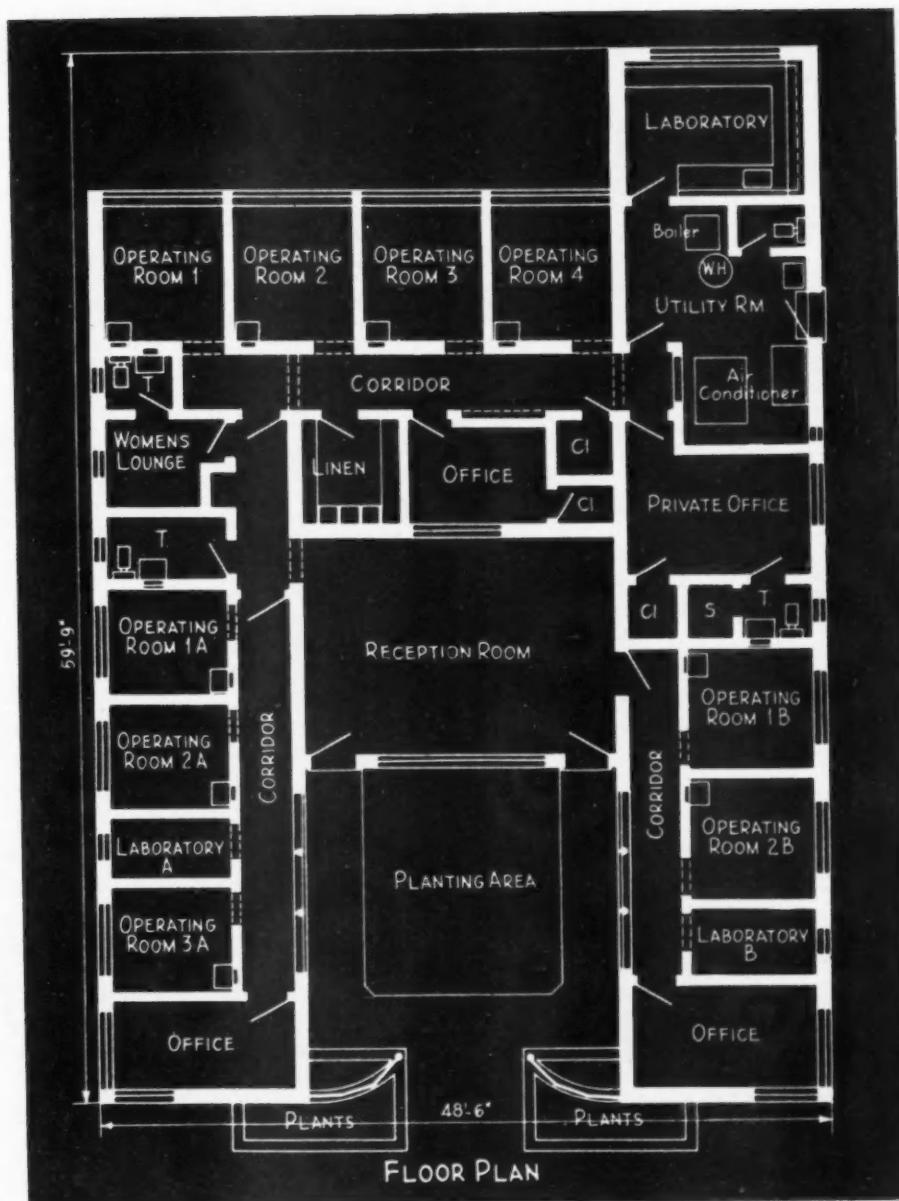
# Dental Clinic

**Modern structure in Atlanta, designed by John Cherry and built by De-Give-Lambert, effectively combines modern materials with functional design**

minimum heat radiation from the ceilings in warm weather. All windows are set in metal sash.

Interior sides of exterior brick walls are covered with two coats of plaster bond and plaster. Conventional plastered wood stud partitions were used. Doors are flush panel.

Floors are covered with asphalt tile in color combinations that add variety as well as attractiveness to various rooms within the structure. Since the clinic was designed exclusively for that use, every modern convenience for the comfort of both patients and doctors was incorporated. The building faces south, and the rear, or north end, is devoted entirely to operating rooms and a laboratory with transparent glass area across that entire side, which overlooks an attractively landscaped garden. Parking facilities for patients and a rear entrance add further to the utility of this structure.



FLOOR plan of clinic reveals use of space for accommodation of patients and doctors.



## Florida Builder Erects Modern Restaurant

**Insulation, Thermopane windows, air conditioning and electric cooking keep patrons cool in St. Petersburg's new Wedgwood Inn restaurant**

**A**DAPTING concrete block, barrel tile roof, reinforced concrete flooring, Thermopane glass, and many other modern products to a modified Spanish renaissance type building, St. Petersburg's new Wedgwood Inn restaurant has become a tourist's objective in the six months it has been operating.

Builder Robert W. Lyon's Coronado Inc. began construction in May 1946, but owing to current restrictions, the original plans of architects John B. Dodd and William Harvard of St. Petersburg were subject to day-to-day modifications, new suggestions being included as construction progressed.

Local ordinances and material shortages combined to make completion of the Inn difficult but not impossible. Construction of a glass enclosed terrace across one end of the building resulted in substantial dining area with a minimum use of scarce materials. When formally opened November 1946, the Wedgwood's dining facilities, bar, and gift shop represented a total expenditure of \$200,000 for building and equipment.

The Wedgwood's modified Spanish style is in complete harmony

with its location. With the El Rancho—Lyon's modern apartment hotel built in ranch style, featuring gardens and private swimming pool—located adjacent to the Inn, the Wedgwood caters to people who make a habit of dining out in the neighborhood. The Inn is located in a semi-residential neighborhood and benefits by a view of one of St. Petersburg's tropical parks directly opposite the entrance.

Because he believed that service in his restaurant should match its patronage as closely as its exterior blended with its surroundings, Lyon insisted on a specialized service that required commercial cooking equipment with a wide range of flexibility.

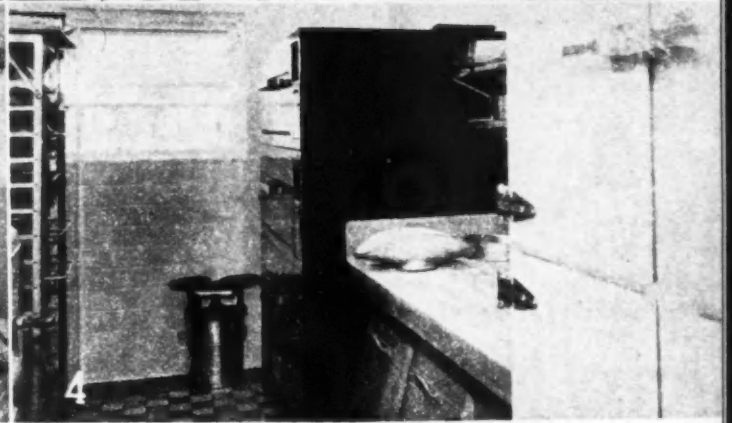
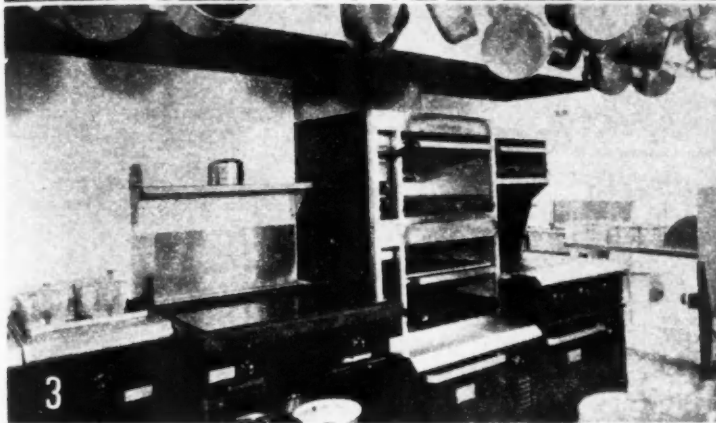
Before he started construction, Lyon engaged the services of William B. Shenk, commercial manager, Florida Power and Light Corporation, to advise him on the type of equipment necessary to meet the exacting standards of the a la carte service he intended to render at the Inn. Working in close cooperation with John T. Nee, Hotpoint district manager for the area serving St. Petersburg, and Grant Call, Hotpoint veteran commercial cooking expert, Shenk met Lyon's problem

with a heavy duty outlay which includes thermostatically controlled fry kettles and automatic oven and makes possible a la carte service for as many as 200 people with a double shift kitchen staff of 30 employees.

The kitchen and bake shop have a lighting system which matches in efficiency the modern cooking equipment. Recessed troffers utilizing standard fluorescent lamps provide more than 50 foot candles of smooth, glare-free light throughout the important food preparation areas. There is also a generous use of germicidal lamps in storage rooms, rest rooms, and kitchen.

Three imported crystal chandeliers are used in the main dining room for atmosphere, while fluorescent lighting in specially designed coves comprises utilitarian illumination. A warm color fluorescent system is also used in the cocktail lounge. Tubes installed in coves produce both light and decoration. The electrical service facilities require 1200 amps., 3 phase 120/208 volts, 4 wire system.

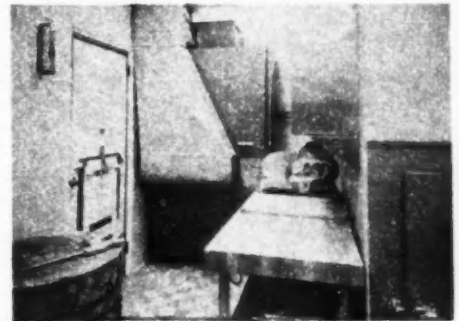
The Wedgwood operates with a total personnel of 58. The combined seating capacity of the dining room and terrace is 200. A parking lot for



(1) AIR conditioned Thermopane-enclosed terrace; (2) Main dining room; (3) Electric cooking bank; (4) Electric ovens.

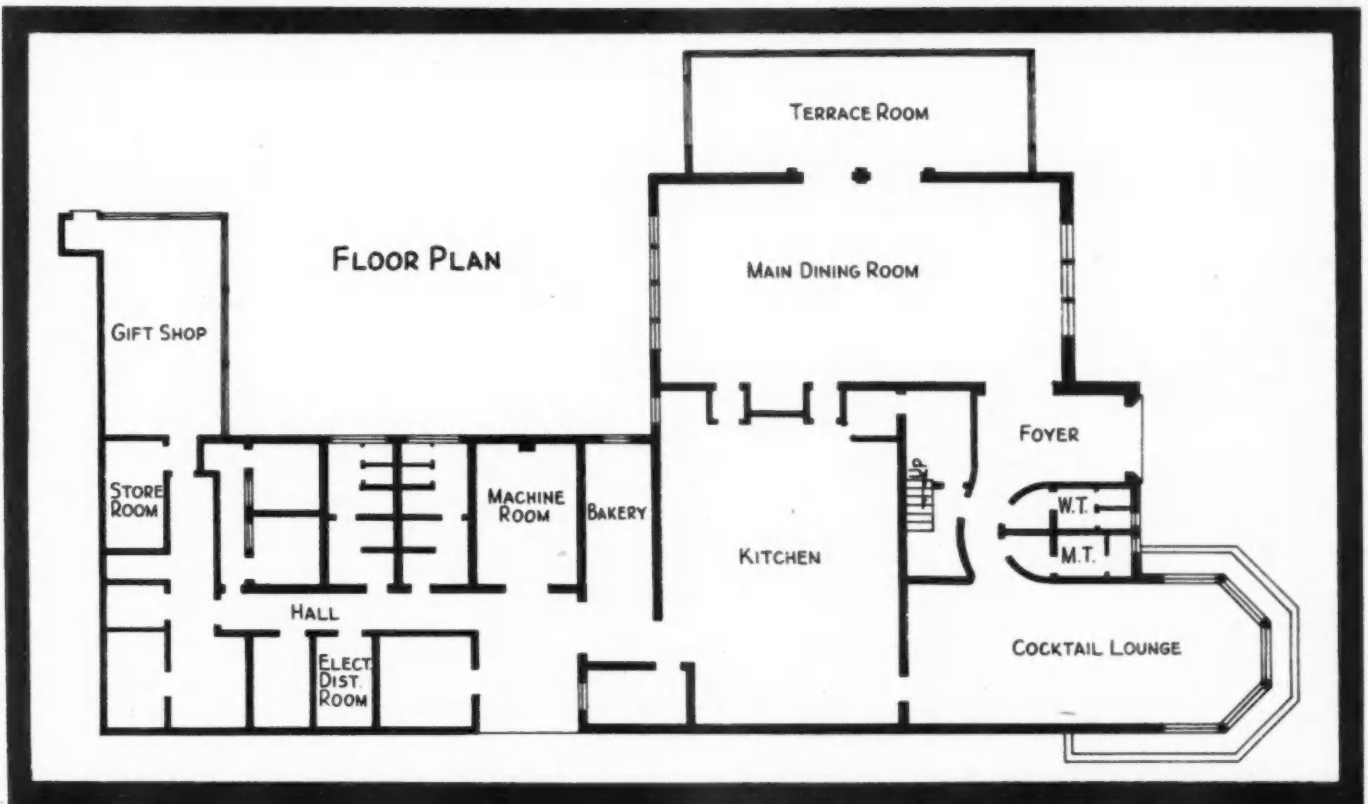
75 cars is located next to the Inn. The St. Petersburg properties represent only one of several successful commercial ventures for Robert Lyons. As a real estate operator and investor he maintains offices in New York, Washington, D.C., and Hollywood. Following the purchase of the El Rancho, he organized a building firm, Coronado Inc., to build and develop a subdivision called Bahama

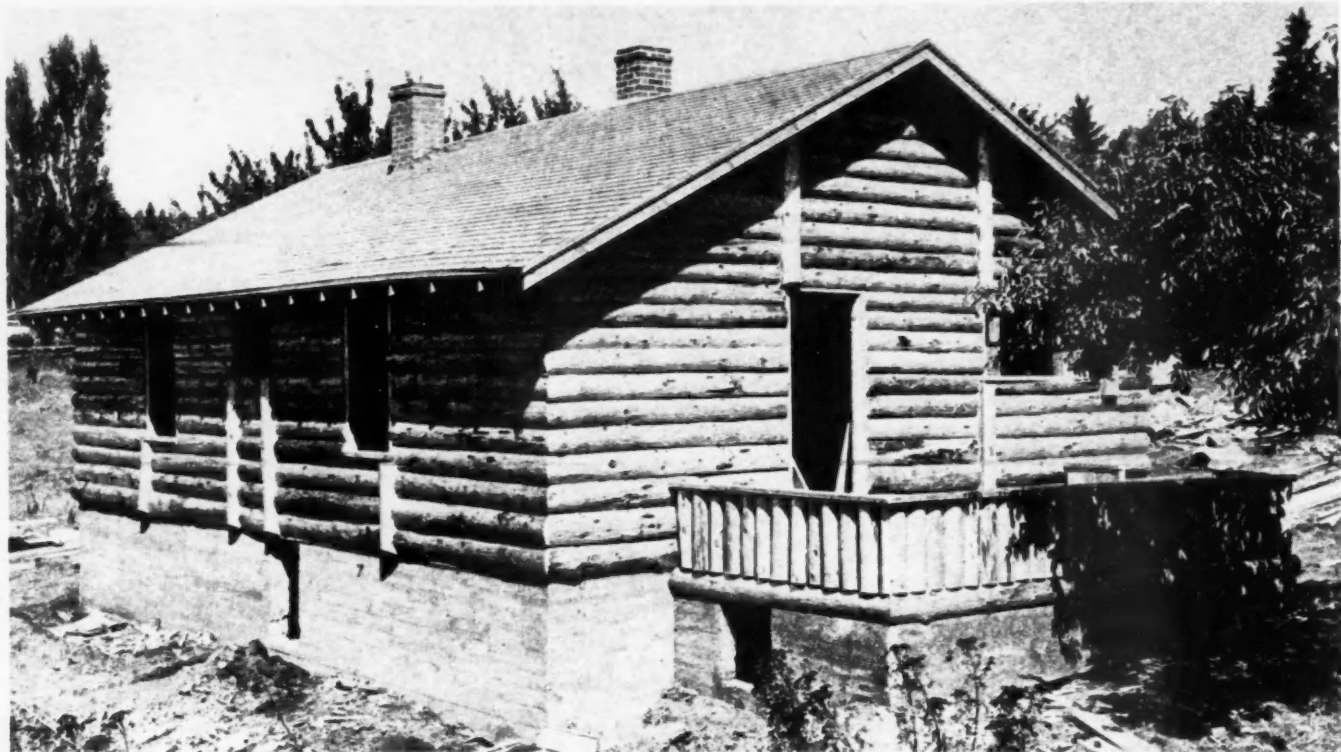
Beach on St. Petersburg's south side water front. Eighty-five houses have been planned thus far and 35 have been completed and sold. Custom-built, these homes range in price from \$20,000 to \$80,000. Additional plans call for a shopping area and apartment hotels to be constructed in conjunction with homes now being built. Mr. Lyon's three sons, manage the St. Petersburg properties.



AIR conditioning unit for cocktail lounge.

THE building is of concrete block construction with a built-up barrel tile roof.



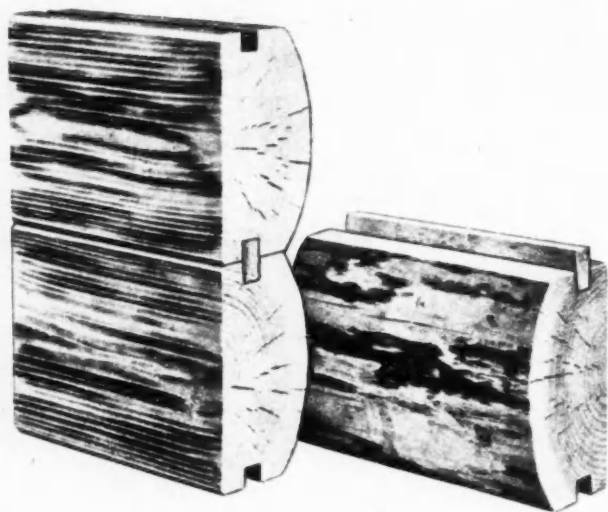


EXTERIOR as well as interior wall is erected, ready for finish, in one operation with new material.

## Ready-Cut Logs Speed Cabin Building

**A** UNIQUE new material for constructing cabins and other structures of logs is being introduced by the Lowe Co. of Glendale, Calif., distributors for Log Structures, Inc. The material is neither an imitation log nor a slab siding, but actual logs, cut from sound timber and formed by a patented method so the log is square-cut on three sides, with the outside surface peeled of bark and treated to resist discoloration, weathering and dry rot.

The inside surface of the logs is planed smooth, so it may be finished to form a natural "knotty pine" interior wall. The top and bottom surfaces of each log are grooved to receive a wooden spline or key which is furnished with each log. When properly installed and caulked the structure ties together firmly, with all joints



CLOSEUP showing interior and exterior shape and joint detail.

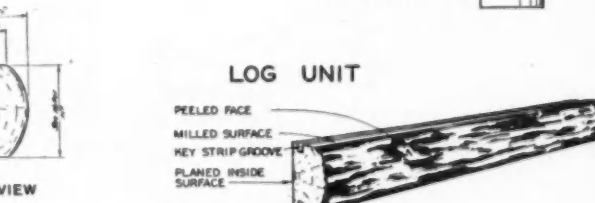
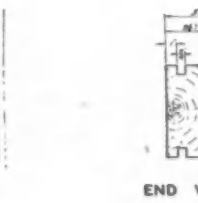
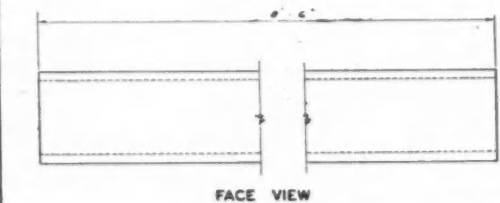
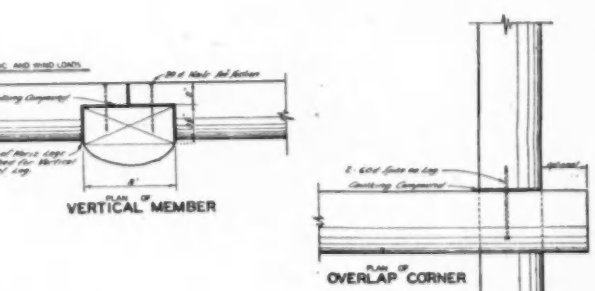
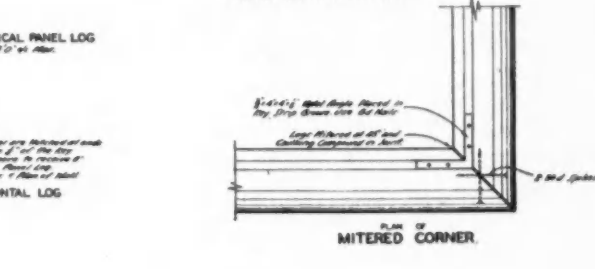
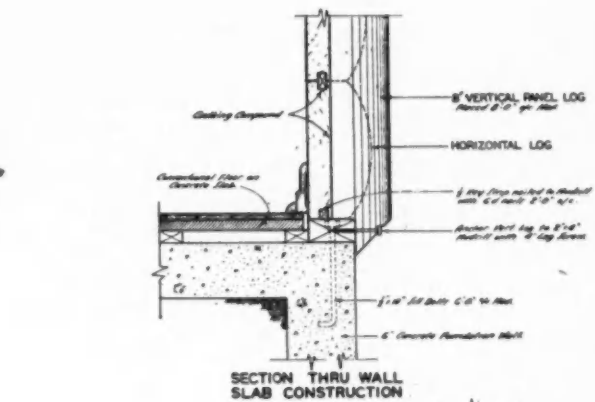
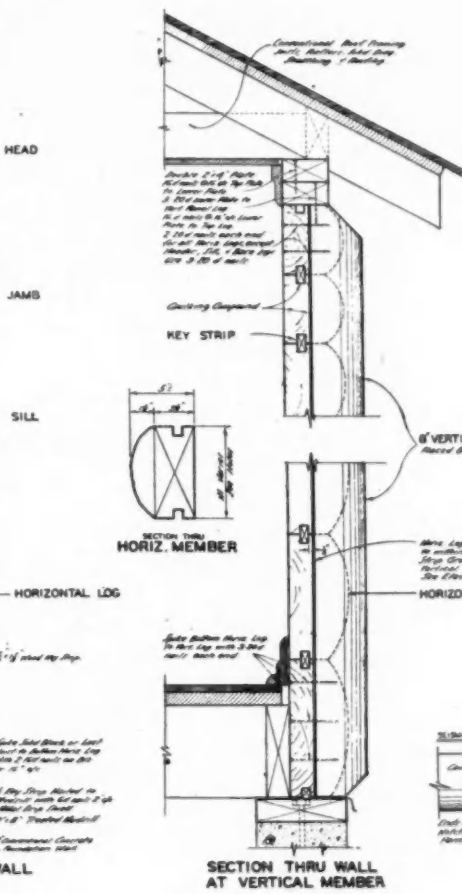
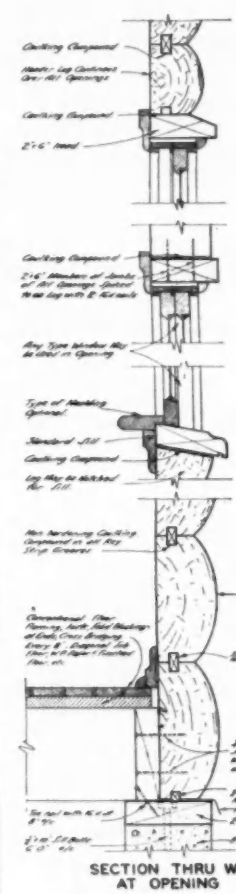
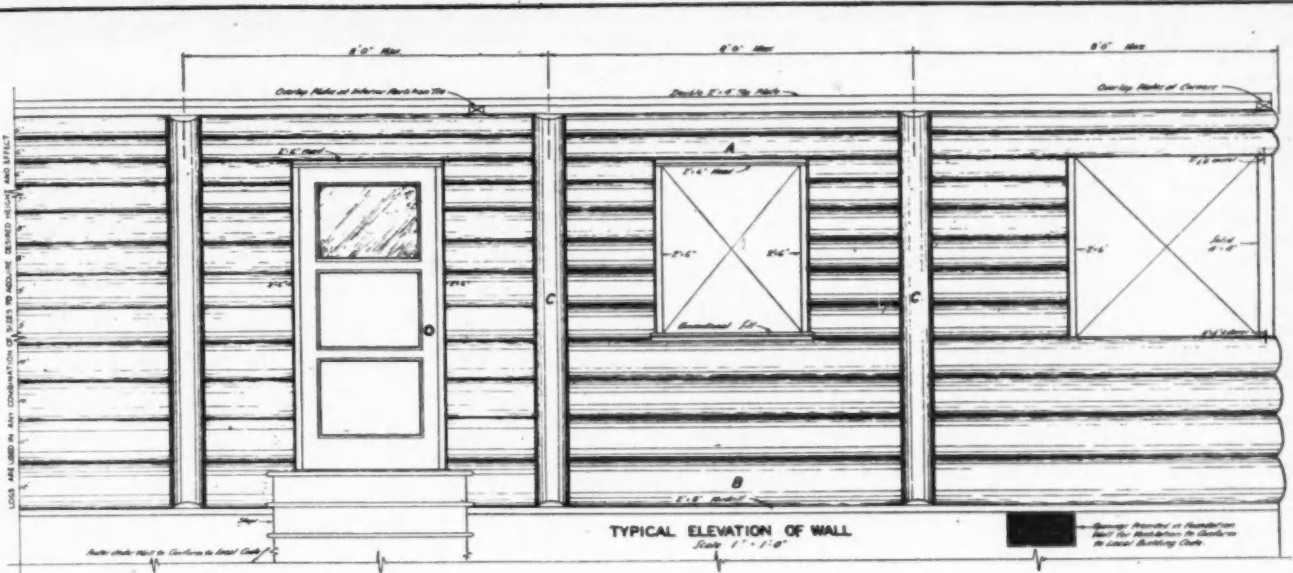
### New material, plus new method of erection, cuts costs and speeds construction

waterproof and weatherproof and permanently sealed.

The logs are cut without taper, so the building walls will lay up evenly. Each log is 8 feet 6 inches long, the extra 6 inches being provided for any mitering or fitting that may be required. Each log is approximately 5½ inches thick, with a surface on the splined edges of about ¾ inches. Even widths from 6 to 12 inches facilitate laying up the walls to correct height and materially improve the appearance of the structure as compared with walls built from logs all of the same size. Walls are held in place vertically by upright "panel logs" inset every 8 feet to provide the necessary structural strength for safety and approval of lending agencies.

The walls are simple and fast to lay up, providing major savings in labor. By actual test all the walls of a five-room house from foundation to roof, including roughed-in window openings, doors, etc., have been laid up in 32 man hours. Savings of from 75 cents to \$1.50 per square foot can be effected through the use of the log structure as compared to conventional construction. The 5½-inch log walls provide ample insulation against heat or cold.

Structures built from these logs are particularly adaptable as rustic homes and cabins. In addition to this use many striking effects can be obtained by combining the logs with other materials for modern as well as conventional planning of houses and small commercial buildings. The logs are being distributed through authorized dealers, who also offer a planning and consultation service in connection with sale and use of the new material. A number of mills are being added to present production facilities to keep pace with an increasing demand.

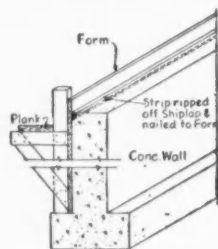


DRAWINGS showing detail of wall construction and floor plan of typical cabin. These logs may be combined with conventional building materials to achieve many striking effects in houses as well as small commercial structures.



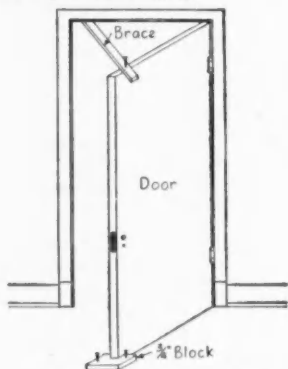
## How-To-Do-It Pointers

### How to Make a Concrete Form Serve Two Purposes



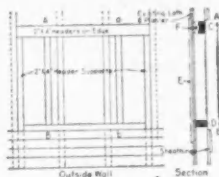
A STRIP of shiplap nailed to concrete forms will serve two purposes. First, if nailed level at top of wall it can be used as a guide to trowel or float top of wall when poured. Second, when forms are stripped it forms a shiplap joint in the concrete from which to start the sheathing for horizontal sheathing. A straight 2 x 10 on the outside of forms can be used to make the walls straight and to serve as a walk.—CARL N. WOODS, Omak, Wash.

### How to Make Handy Door Jig



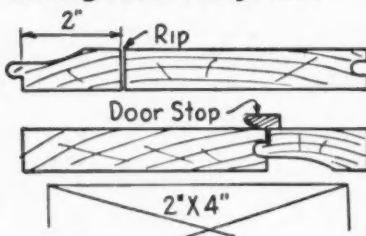
WHEN boring and setting mortise locks in doors, the jig illustrated is used. The top brace is a piece of door stop nailed to the header and top of door. The bottom block is made of  $\frac{3}{4}$  inch material, notched to fit the door; both are tacked with 4d finish nails.—WM. E. HAMMONS, Gary, Ind.

### How to Cut Opening in Frame Wall for New Window or Door



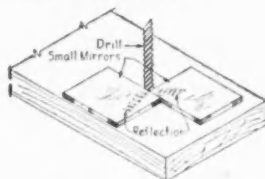
1. Remove sheathing A to B for size of opening plus sheathing to nearest studs.
2. Notch studs for 2 x 4" header C.
3. Cut studs at B after header C has been secured.
4. Install sub sill D.
5. Erect studs for sides of new opening. All above work done from outside, being careful not to disturb plaster.
6. Attach temporary plaster retainer E with screws to new studs. Cut lath and plaster to outline of new opening A-B and a-b.
7. Cut remainder of original studs at F and install new 2 x 4 header on edge. This completes rough opening without damage to interior finish.—B. M. LARSON, Chesterton, Ind.

### How to Use Drop Siding for Door Jambs



DURING a recent building operation A. E. Gustofson, Faribault, Minn., was unable to obtain jambs for inside doors. Having some good quality, dry, fir drop siding on hand, he created some ready made jambs by cutting the siding in the manner shown above.

### How to Bore Straight Holes in Timbers



WITH the aid of two small, square mirrors, one can easily and accurately drill straight holes through heavy timbers. Place the two mirrors on the timber in the manner shown in the illustration.—HERBERT E. FEY, New Braunfels, Texas.

# AMERICAN

## Entrance Detail Is Focal Point of Interest

By R. J. Alexander

TOO OFTEN the architect, designer or builder is compelled, through an owner's desire, to reproduce in the latter's new home a certain type of entrance he may have in his mind. This, together with the room layout, usually predetermines the character and design of the house.

Should a pretentious and ornamental entrance be preferred, together with a balanced plan, it would then be logical to assume that a house designed along the traditional lines of early American would probably fulfill their requirements.

A preference for an informal entrance of stone or brick, built of local materials by local craftsmen, would indicate that the owner is thinking of a house designed along the lines of Western, Contemporary, or Ranch house style.

This month's detail sheet shows the design and construction features of the latter type of entrance. The materials used and the manner in which they are placed in relation to one another should produce a low, horizontal or "close to the ground" effect.

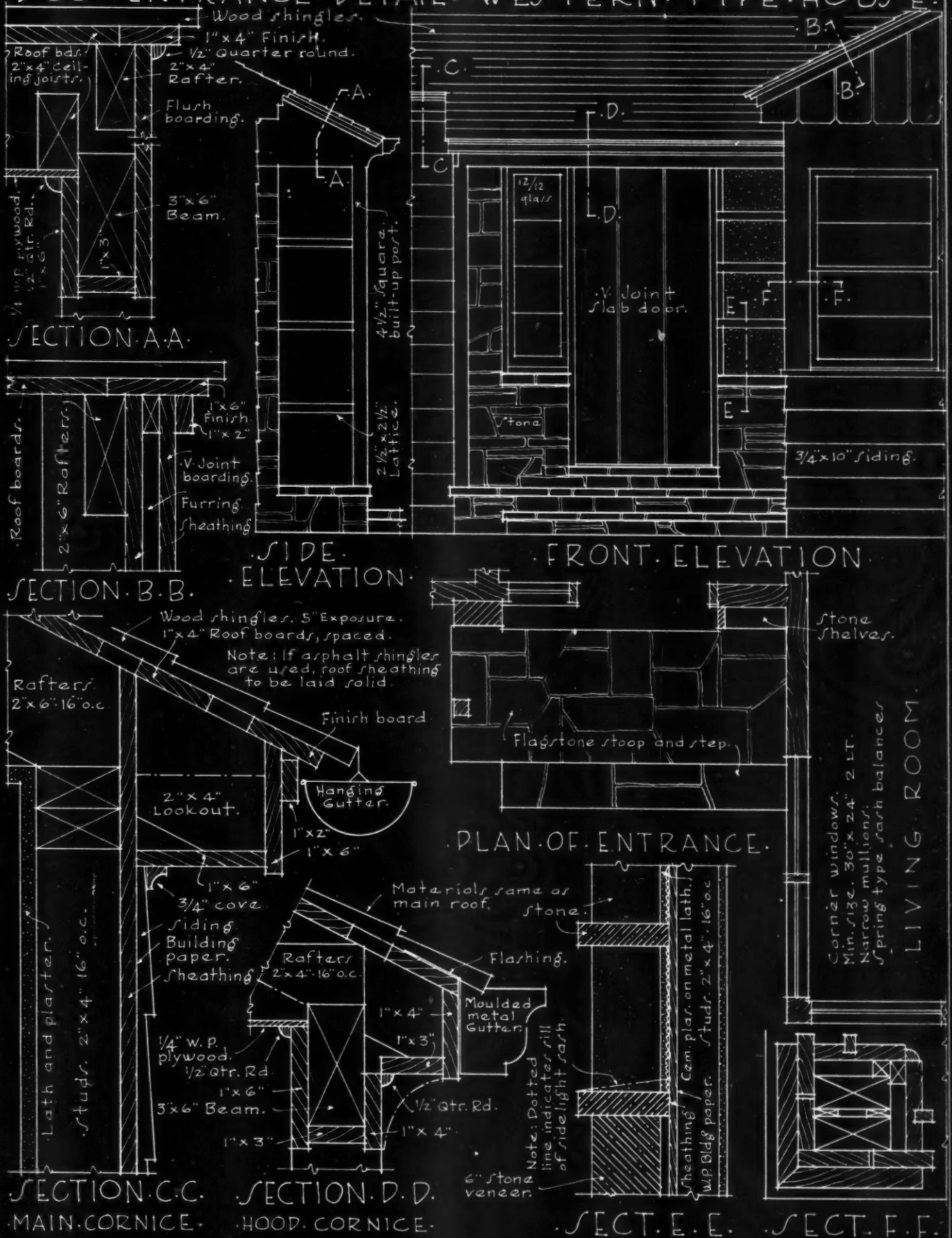
Local stone, face or common brick would be suitable for the veneering shown on the drawing. The shelves indicated adjoining the entrance door, which could be used for the placement of bright colored flower pots, could be built up of sawn stone. Floor and steps of flagstone would also be appropriate for the porch.

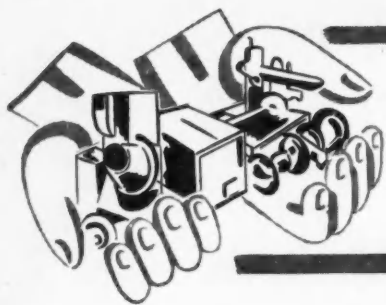
Bevel siding,  $\frac{3}{4}$  x 10 inches, is indicated for the frame part of the house, with double-coursed wood shingles having a wide exposure as an alternate arrangement. V-joint vertical boarding is indicated for the gable ends and wood shingles for the roof. Two different types of metal gutters are indicated, showing their application to the boxed-in cornice. For the sake of economy a single type may be used.

The roof pitch should be held to a minimum; a rise of 6 or 6½ inches to the foot would be appropriate. If a ranch type house is contemplated, a pitch of 5 inches to the foot or less should be used. The details shown are to be used with a gable type roof. For a rambling ranch house a hip roof having a wide overhanging eave could be substituted.



## D.33. ENTRANCE DETAIL. WESTERN TYPE HOUSE.





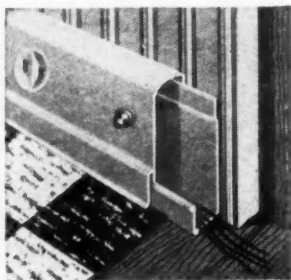
# NEW PRODUCTS

Offered by Manufacturers

## NEW TYPE BASEBOARD

AB7720

A new type baseboard which trims, provides wiring facilities and anchors partitions has been developed by Charles E. Barnes & Son, 4320-22 Osage Ave., Philadelphia 4, Pa. Made of extruded aluminum with satin finish, the base can be painted if desired. It is 3½ inches high, coved top and bottom. Four

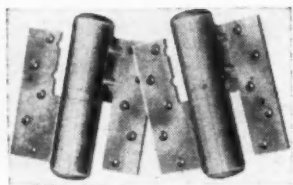


screws in rear member will erect as much as 10 feet. There are no splicing plates or screws to mar the front panel which is removable by lifting ½ inch; thus wiring is always accessible. Outlets can be provided wherever and whenever needed. Models for industrial plants and office building installations are also available.

## HYDRAULIC DOOR CLOSER

AB7712

Built like a hinge, the new type hydraulic door closer of Bakewell Products, 1201 Rio Vista Ave., Los Angeles 23, Calif., eliminates all visible door-closing mechanism. Its mechanics are concealed within specially designed butt hinges which are installed the same as



conventional hinges. Adjustable for varying speeds, positive latching or silent closing, the hinge is tamper-proof and non-leakable. It is available in a variety of sizes and finishes for residential and commercial installations.

## WINDOW SCREENING

AB7721

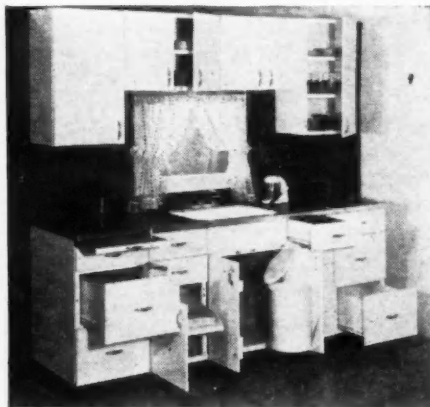
Screening designed to deflect the sun's rays is the latest innovation of Warp Bros., 1100 N. Cicero Ave., Chicago 51, Ill. Formed from a solid sheet of metal, the screen has 18 tiny metal slots per inch set at a horizontal angle. This construction, which simulates a venetian

shade, stops the sun from shining directly into the house. As a result rooms are cooler and the fading of furnishings is prevented. The tiny metal slots also keep out flies and mosquitoes. Furnished in a roll in widths from 24 to 36 inches, the screening is easily cut and tacked on an ordinary screen frame. It is available in either bronze or aluminum alloy.

## KITCHEN CABINETS

AB7705

A line of modern-style steel kitchen cabinets adaptable to almost any kitchen arrangement is being manufactured by The Guiberson Corp., Dallas, Texas. The cabinets are made of extra-heavy gauge steel, bonderized to prevent rust, and finished in durable baked-on white enamel. Sink and floor cabinets have Formica tops and chromodized aluminum trim. The porcelain-on-steel sink is



larger than average and has chrome plated ledge-type mixing faucet with flexible spray head. Features of the sink cabinet are removable cutlery tray, soap trays, ventilated bread drawer and garbage container. The wall cabinets are available in two-shelf and three-shelf sizes. Drawer and door fronts are insulated. Flat, durable hardware is used on all units. A basic unit is comprised of five cabinets.

## WINDOW LOCK

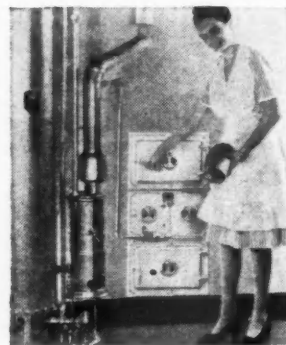
AB7727

A new type window lock for double-hung windows, which incorporates the principle of the self-locking door, is made by the New Products Co., 19 West 44th St., New York 18, N. Y. A positive locking action is produced by an intermeshing action of the bolt and the keeper. When the window is closed the lock automatically locks itself. To open the window, a release is pulled forward, allowing either the top or bottom window to be opened. The lock is easily installed.

## CHIMNEY INCINERATOR

AB7701

A residential incinerator that is installed flush with the wall in the base of the chimney is being marketed by the Incinerator Products Co., 653 So. Post Ave., Detroit 17, Mich. So located, the burner takes advantage of the chimney draft and produces a heat great enough to reduce the garbage to a fine ash. The

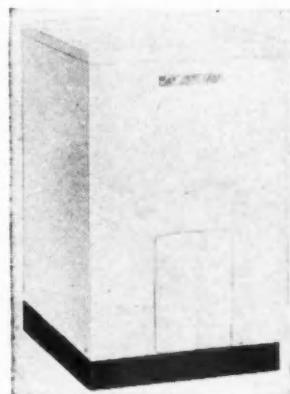


garbage is consumed by igniting added scrap paper. A gas burner is built into the unit for disposing of exceptionally wet loads. Grates and front are of cast iron and the case is of one-piece welded construction. A built-in mesh catches burning materials that rise in the chimney.

## TABLE-TOP WATER HEATER

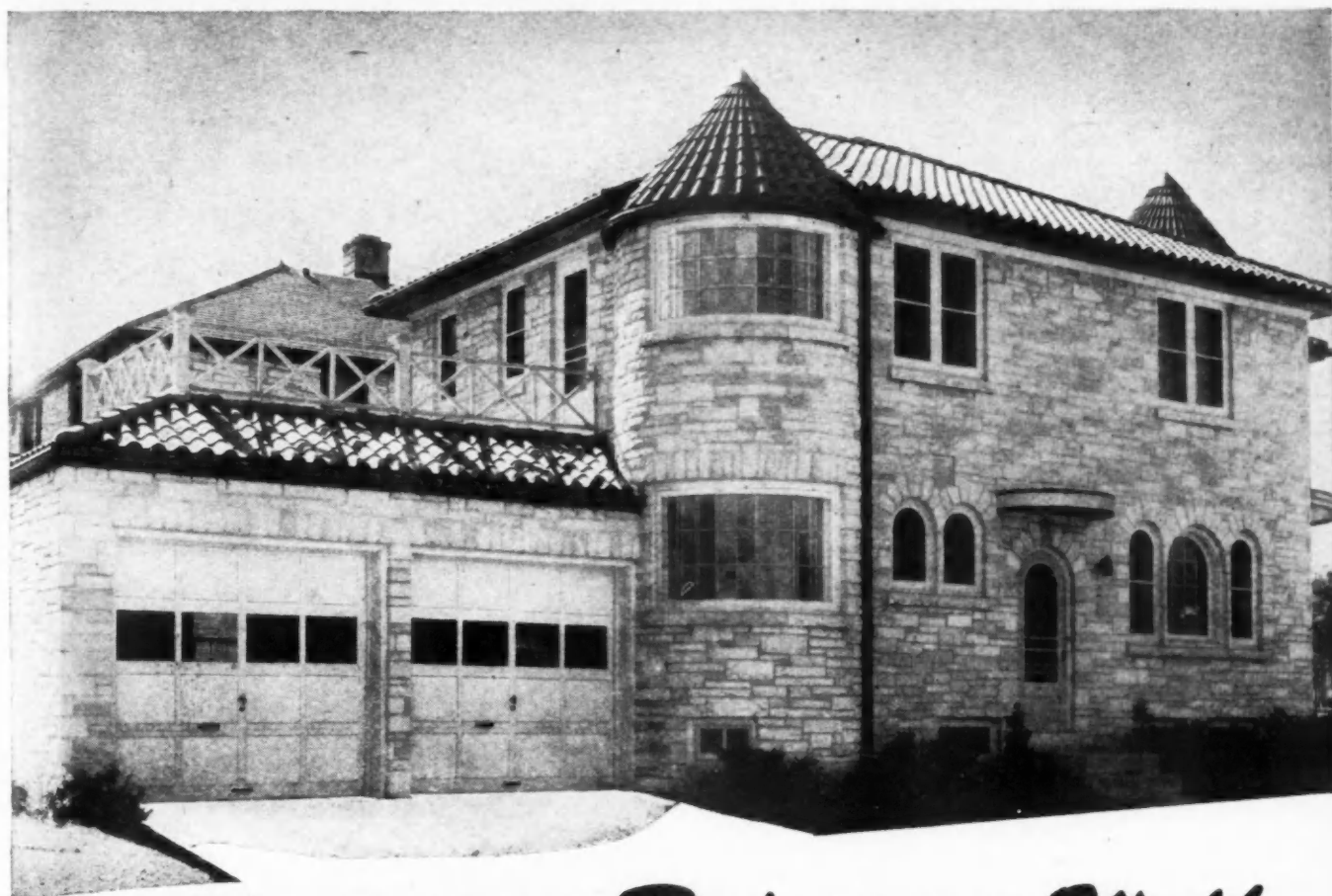
AB7704

A table-top electric water heater with a capacity of 40 gallons is being manufactured by the Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh, 30, Pa. Outstanding features of the unit are an accurate thermostat, with a range of 120 degrees to 170 degrees; an im-



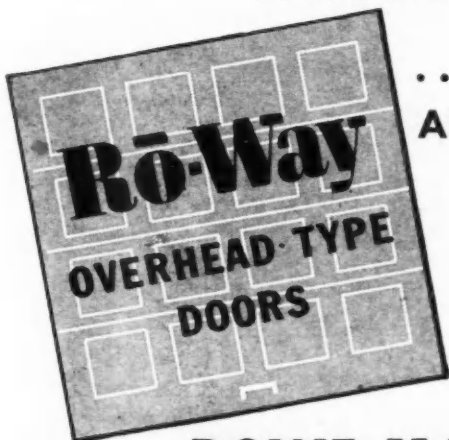
mersion type heating element that puts heat directly into the water; Fiberglas insulation in heavy layers; and a scientifically designed cold water baffle.

(Continued to page 124)



**MORE PEOPLE *Ride* THAN *Walk***  
*... that's why more of them see*  
**the FRONT doors on today's UP FRONT GARAGES**

In styling and construction Ro-Way Overhead Type Doors insure "lasting good looks." Every part is manufactured completely in the Ro-Way plant. Each door leaves the factory as a carefully balanced unit. Every spring is "tailor made" and power metered for the weight of the door which it must lift. All metal parts are Parkerized and painted after fabrication. So you see Ro-Way Doors



**... HAVE PLENTY OF "FRONT"  
AND EXCLUSIVE FEATURES TO BACK IT UP!**

To add extra years of service the Ro-Way Track is designed to lessen friction . . . The track rollers have double thick tread . . . The outer-bearing is rigidly supported by Ro-Way patented Crow's Foot support. Ro-Way Sales and Service is nationwide through carefully selected distributors. They take the same pride in their installation of Ro-Way Doors as we do in their manufacture.

See your classified directory or write for distributor's name. See our catalog in Sweet's.

**ROWE MANUFACTURING COMPANY**

724 Holton Street

Galesburg, Illinois, U. S. A.

*There's a Ro-Way for every Doorway!*

(Continued from page 122)

**OIL-FIRED WATER HEATER AB7706**

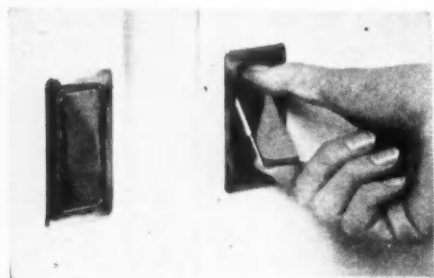
An oil-fired water heater is being marketed by the Conco Engineering Works, Mendota, Ill. Two models are available: the WH-3 with a capacity of 25 gallons and the WH-5 with a capacity of 45 gallons. The heater is of heavy



gauge steel one-piece construction equipped with the Field barometric draft control to assure minimum fuel consumption and efficient operation. Every tank is bonderized with a silver grey hamerloid finish and black trim.

**CABINET DOOR LATCH AB7723**

A revolutionary design in door latch and drawer pulls for interior cabinet doors and drawers is announced by Dedoes of Berkley, Mich. The new hardware, shown in illustration, is



unique in that it is flush with the surface when not in use. A finger touch at the top, and doors unlatch for easy opening. Made of highly polished chrome, the hardware is easy to clean, easy to install, and easy to operate.

**LAWN FENCES AB7710**

To protect lawns and shrubbery from damage by trespassers, Anchor Post Products, Inc., Baltimore 24, Md., offers a choice of chain link wire, ornamental iron picket or rustic wood fences. Designed to enhance the beauty of the landscape, these fences are available in a variety of patterns. Single and double gates to match the fencing are stock

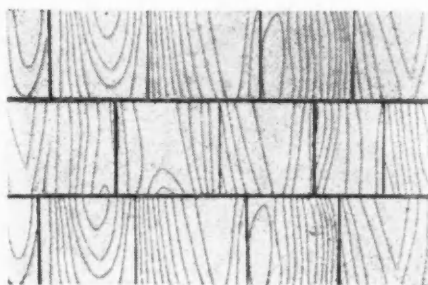
items. A drive-anchor post foundation, exclusive feature of the Anchor fence, holds the fence firmly in line and makes erection possible without digging or otherwise defacing the grounds.

**CEILING VENTILATOR AB7726**

Trade-Wind Motorfans, Inc., 5725 So. Main St., Los Angeles 37, Calif., manufacture a ceiling ventilator that features a blower wheel which moves a large volume of air under pressure. Designed for installation between joists or in the soffit, the ventilator traps heat, odors, and stale air immediately and expels them outdoors. Installed in the kitchen, the fan catches the smoke, grease and odors of cooking and prevents them from spreading; installed in the bathroom, it eliminates the steam and dampness from shower or bath.

**NEW INSULATED SIDING AB7719**

Insulated Weather-Tex siding is the new product of Bird & Son, Inc., East Walpole, Mass. Designed to simulate weathered wood shingles, the material comes in panels 43 by 14 inches and is approximately 5/8 inches thick. The design is achieved by means of a colored



granule surface on which is embossed the Weather-Tex design. Asphalt saturation protects each panel from moisture. This material is available in four shades: Grey, Ivory, Red and Brown.

**PLASTIC TILES AB7713**

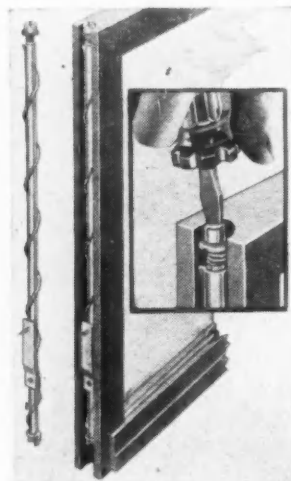
Wall tiles of Styron plastic have been developed by the Dow Chemical Co., Midland, Mich. Lightweight, with the strength of metal, the tiles are manufactured in an array of pastels, deeper shades and two-color variation. The



tiles are easy to clean and attain a high gloss by polishing. Because the color is all the way through the plastic, a scratch will not deface the surface. The Styron tiles can be installed on new as well as old walls.

**VERTICAL SASH BALANCE AB7708**

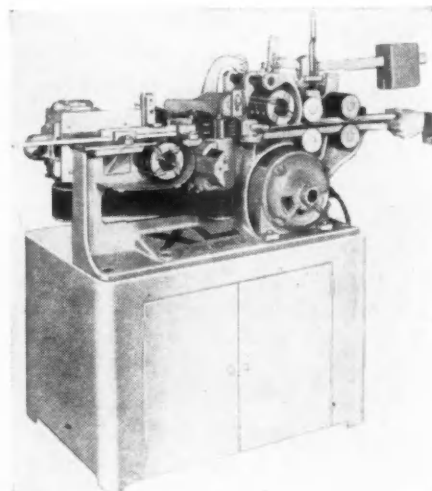
The Turner & Seymour Mfg. Co. of Torrington, Conn., makes a vertical sash balance which can be completely concealed within a grooved sash. Trade-named "Hidalift," its features are a spring sealed in tubing; a tension easily



adjusted without special tools and without removing sash or screws; and a specially designed non-slip clutch. It is available in a wide variety of sizes and is easily installed. Ideal for new installations, it is also an effective replacement.

**MILLWORK MACHINE AB7715**

Fine moulding can be produced at the rate of 2,400 to 12,000 linear feet per hour on a new woodworking machine developed by the Smithway Machine Co., Seattle, Wash. The machine, called the "Moldmatcher," also produces sash stock and hardwood flooring. It is easily set up and adjusted for different patterns and can be operated by one man. The



novel use of four cutting heads—two 2 in. heads placed opposite each other and two 4 in. heads top and bottom—accounts for its speed and simple operation. It is mounted on a steel cabinet.

Distributors are The XL Products Co., 4617 Airport Way, Seattle 8, Wash.

(Continued to page 126)



## KOHLER QUALITY creates satisfaction and good will

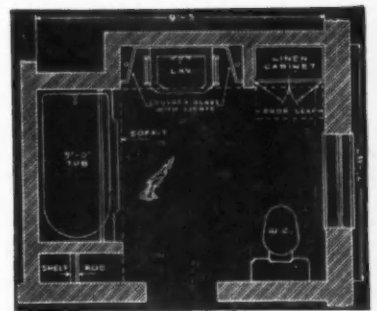
**H**OME OWNERS have learned to associate the name "Kohler" with the many advantages that go with first quality—and they have become increasingly aware of the importance of having, in the bathroom, the health-protection of sound sanitation in fixtures that are attractive, inviting to use, and easy to clean, equipped with carefully made, reliable working parts. Hence, when you specify Kohler plumbing you establish confidence and good will among home owners, because you help them invest in lasting satisfaction and added value for their homes.

For the home of average size the ar-

rangment above is both practical and convenient. It includes the Gramercy vitreous china lavatory, with built-in fittings and roomy shelf; the Cosmopolitan Bench Bath, made with durable, pure white enamel on time-tested, non-flexing cast iron—with the Triton shower mixer; and the quiet Wellworth close-coupled closet.

Kohler products, made in one plant under one supervision, are backed by 74 years of experience in manufacturing first quality plumbing. Write for further information.

Kohler Co., Dept. J, Kohler, Wis.  
Established 1873.



*Practical plan for Kohler fixtures in a compact arrangement allowing free access to each—together with handy storage facilities and other conveniences.*

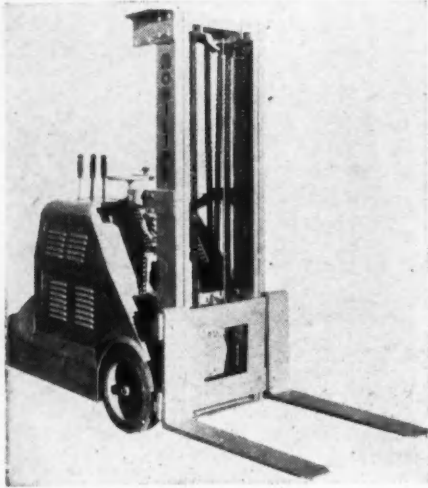
# KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

(Continued from page 124)

**NEW MODEL MOBILIFT AB7709**

A new Model F, Mobilift with a rated capacity of 3000 pounds on a 15-inch load center is now available. Greater balancing capacity enables it to handle heavier loads of larger or odd shaped materials than the 2000-pound Model F Mobilift. This new model weighs 4450



pounds and is equipped with a specially designed, 20 HP, 3 cylinder air-cooled engine. It requires no gear shifting and has an overall turning radius of 61 inches. The manufacturer is General Equipment Co., 835 S.E. Main St., Portland 17, Ore.

**THRUSH ADJUSTABLE TEE AB7717**

The H. A. Thrush Co., Peru, Ind., has devised an adjustable tee for use with one-pipe forced circulating hot water heating systems. The tee is installed in the single main to the supply branch of each upfeed radiator. A movable diverter easily adjusted by a



convenient handle controls the flow of water into the branch. The water can be shut off completely or any amount from a tiny stream to a full flow can be diverted through the radiator as needed. When branch flow is reduced, the flow through the main is increased.

**BLOCK MACHINE AB7724**

The Western Distributing Co., Tucson, Ariz., has developed a cement block machine with no cams, rollers, slides, gears or catches to affect the accuracy of the block. The result is a hydraulically powered pressure machine, the manual operation of which is limited to

valve control. The machine applies pressure to both the top and bottom of the block and has a wide variation of adjustment of stroke. Standard equipment are cores to make three 8 inches wide by 6 inches high by 16 inches long interlocking blocks. To make other types of blocks, a different set of cores can be installed. A feeding mechanism and racks for stacking complete the machine.

**AUTOMATIC COIL CLEANER AB7711**

An ingenious device to free water heater coils of sediment and lime is found in the B&G Clean-A-Coil Valve. This valve automatically and thoroughly backwashes the heater coils every time a hot water faucet is open by causing the water to reverse its usual direction of flow: i.e., cold water enters through the valve, flows through the heater in the direction opposite to the normal flow and thence into the tank. This backwash flow is more turbulent than the heating cycle flow and its scrubbing action effectively cleans out sediment. Manufactured by the Bell & Gossett Co., Morton Grove, Ill.



**NEW NAIL FOR ASBESTOS SIDING AB7718**

The Tinnerman line of unthreaded fasteners now boasts a new speed clinch nail for use in applying asbestos cement siding on all types of construction. Driven with an ordinary carpenter's hammer, the nail will never work loose to allow the siding to break its weather seal. The nail is distributed by Johns-Manville and the U.S. Gypsum Co.

**MOISTURE-PROOF CEMENT PAINT AB7702**

A waterproof paint for concrete or cinder block walls is being made by Truscon Laboratories, Detroit 11, Mich. Composed of inorganic materials, the paint is impervious to moisture and may be applied to wet or dry walls. Available in five colors and white, this coating is used for decorative purposes as well as to keep out dampness. It is self-priming

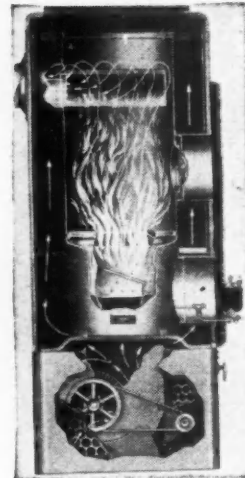
and produces a smooth, hard, colorful finish. Named "Tite Wall," this coating is packaged in dry, concentrated form in steel containers.

**ALL-STEEL MORTAR BOX AB7703**

The Bostwick Steel Lath Co., Niles, Ohio, has for immediate delivery a mortar box made of 14-gauge, hot-rolled steel with all welded seams and reinforced flanges. The box is water-tight, lightweight, easy to clean, and durable. In cold weather, a fire can be used with this box to keep the mortar from freezing. It is available in four sizes.

**SMALL HOME FURNACE AB7714**

Designed for small homes with limited space is the Duo-Therm underneath blower furnace. The cutaway view shows how the furnace is mounted directly on top of the blower unit, permitting space saving installation. This model is equipped with Duo-Therm's straight line temperature control. It is made in two



sizes and in capacities of either 50,000 or 75,000 BTU. Special features of the furnace are: Double casings to eliminate radiant heat loss; special waste stopper; large capacity humidifiers; constant level oil control, and streamlined outer casing finished in suntan enamel with chrome hardware. The manufacturer is Duo-Therm Division, Motor Wheel Corp., Lansing, Mich.

(Continued to page 144)

**CHECK NUMBERS AND MAIL COUPON FOR INFORMATION**

American Builder, 105 West Adams Street, Chicago 3, Illinois

NAME..... ADDRESS.....

CITY..... STATE.....

AB7701	AB7706	AB7711	AB7716	AB7721	AB7726
AB7702	AB7707	AB7712	AB7717	AB7722	AB7727
AB7703	AB7708	AB7713	AB7718	AB7723	
AB7704	AB7709	AB7714	AB7719	AB7724	
AB7705	AB7710	AB7715	AB7720	AB7725	

When you address inquiries direct to manufacturers concerning a new product described here, please mention that you saw it described in American Builder.

# Use **BRIXMENT**—and Get Better Brickwork!

In bricklaying, as in everything else, there is a *right* way, and a *wrong* way. An example of each is shown below. Study them—then read how *Brixment* helps the bricklayer do it the right way.

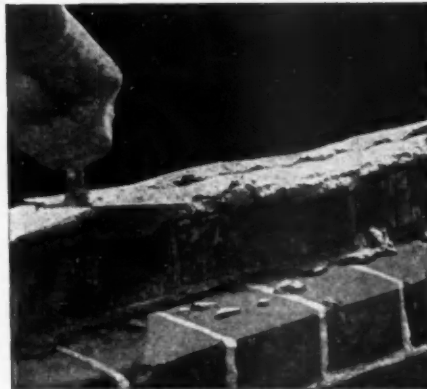
No. 1 OF A SERIES—

## THE RIGHT WAY AND THE WRONG WAY—IN BED JOINTS

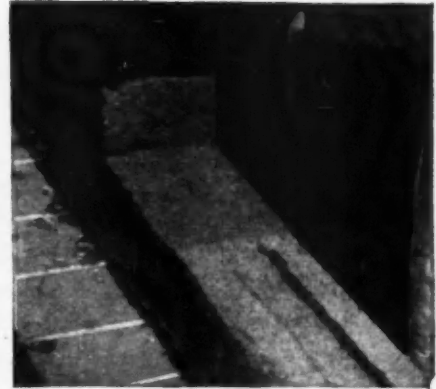
*Mortar for the bed joint should be spread thick. The furrow in the mortar should be made shallow, not deep. Then there will be enough excess mortar in the bed joint to completely fill the furrow when the brick are bedded to the line. This will give full bed joints.*



A thick bed of mortar should be spread on the wall.



The furrow in the mortar should be shallow, not deep.



Then, the excess mortar will fill the furrow and insure full bed joints.

*If the mortar for the bed joint is spread too thin, or if the furrow in the mortar is made too deep, there will be insufficient mortar in the bed joint to completely fill the furrow, when the next course of brick is bedded. This will leave a channel along which water, entering from some open joint, may travel until it finds a passage to the inside of the wall.*



The mortar in this bed joint is spread too thin.



The furrow in this bed joint is too deep.



In either case there is not enough mortar in the bed joint to completely fill the furrow.

**BRIXMENT** mortar helps the bricklayer do better work. It is more *plastic*. It stays plastic longer on the wall, and when the bricklayer beds the brick, he does not need a deep furrow or excessive tapping, to place it "to the line."

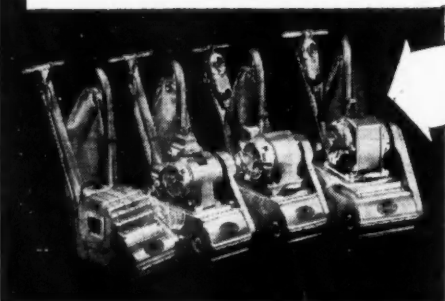
Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

**LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

# GET AMERICAN DEPENDABILITY

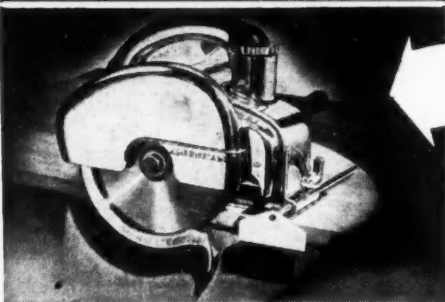
Portable Power Saws and Sanders are at the top of the list of equipment that builders expect to buy this year as shown by a recent survey. American builds both—with top-dependability.

All American products are Quality-built to keep your production UP and costs down. Expert maintenance service near you with American distributors in 35 principal cities.



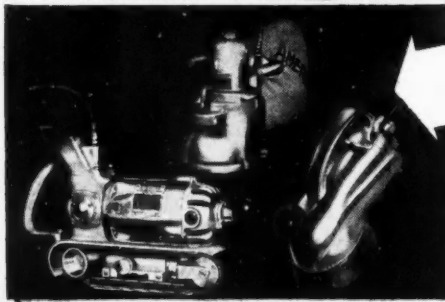
### FLOOR SANDERS

Four models including 8 and 12 inch drum widths. Smooth, uniform sanding.



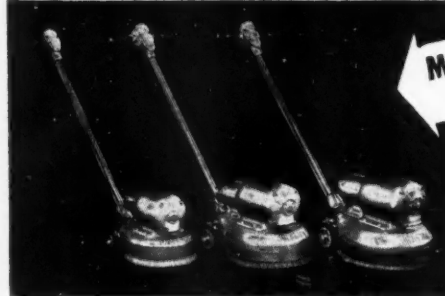
### SAWS

New Portable Electric Saw. Big power . . . easy handling . . . cuts any angle. 8" blade.



### SMALL SANDERS

Many uses for the Sanderplane, a belt sander . . . Speedy Spinner semi-flexible disc sander . . . and Floor Edger, a disc-type sander.



### MAINTENANCE MACHINES

Labor-saving machines for polishing, disc sanding, steel wooling and scrubbing floors. Many models . . . 10" to 17" discs.

Write for further details

# AMERICAN

FLOOR SURFACING MACHINE CO.  
511 SO. ST. CLAIR ST., TOLEDO 3, OHIO

## Catalogs and HOW-TO-DO-IT INFORMATION

**333—CONCRETE FORMS**—with plywood faces and sturdily constructed steel frames or of all-metal are the topic of a pamphlet issued by the Bulldog Concrete Forms Corp., 100 W. 42nd St., New York City. Construction details of a completely assembled unit and of alignment equipment are illustrated with drawings and photographs.

**334—ELECTRIC FAN CATALOG**—is offered by The Emerson Electric Mfg. Co., St. Louis 21, Mo. The complete 1947 line of Emerson desk fans, air circulators, ceiling fans, kitchen ventilators, exhaust and cooler fans is illustrated in color and described in detail.

**335—CONVENIENCE FIXTURES**—such as house telephones, mail boxes, door chimes and bell systems for apartments and homes are the subject of an 8-page booklet prepared by Auth Electric Co. Inc., 34-20 48th St., Long Island City, N.Y. Content covers various models, their sizes, specifications, and suggested uses.

**336—NEW WALL CLOSET FITTINGS**—products of the J. Z. Zurn Mfg. Co., Erie, Pa., are described and illustrated in a twelve-page three-color bulletin. Typical layouts, diagrams, dimensions and specifications of both vertical and horizontal wall closet fittings, soil pipe and I.P.S. connections are featured.

**337—BUILDING EQUIPMENT**—The Blue Brute Line of contractors' air tools, of centrifugal pumps, and of concrete mixers is described and illustrated in brochures available from the Ransome Machinery Co., Dunellen, N.J. Specifications are illustrated with photos of models available.

**338—LIGHTING EQUIPMENT**—A new edition of Catalog No. 44-A has been issued by the Edwin F. Guth Co., 2615 Washington, St. Louis, Mo. In addition to the entire Guth line of fluorescent and incandescent lighting equipment, the catalog contains useful information on light design and accurate light-engineering data.

**339—MODERN BUILDING WITH WOOD**—the title of a booklet published by Timber Engineering Co., 1319 18th St. N.W., Washington 6, D.C., presents pictorially a wide range of light and heavy frame wood structures employing Teco connector system of construction, Lamella construction, and glued laminated construction. Homes, churches, commercial buildings and amusement places are shown.

**340—EXTERIOR WALL TREATMENT**—How the use of "Hydrocide Colorless" helps to preserve the original appearance of building exteriors by checking the absorption of dust, soot, and dirt is explained in a 4-page folder issued by the Building Products Division of L. Sonneborn Sons, Inc., 88 Lexington Ave., New York 16, N.Y.

### SERVICE COUPON—CLIP and MAIL to CHICAGO

Readers Service Department,  
American Builder,  
105 W. Adams St., Chicago 3, Ill.

(July 1947)

Please send me additional information on the following product items, or the catalogs, listed in this department:

Numbers.....

Name.....

Street.....

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

OCCUPATION\*.....

\*Please note that occupation must be stated if full service is to be given.





This attractive home features "Century" #57 White Siding and American Method Roofing Shingles.

# EVERYBODY PROFITS

Wavy butline style supplied in two colors: shell white and graytone.

## with K&M "Century" Asbestos-Cement Siding



Builder: A profitable deal for me, because "Century" Siding is so easy to work, economical to lay up.



Dealer: I make a nice profit, too. Not only on the "Century" Siding, but in the customer goodwill and the future business it'll bring!

A smart buy for the owner—a beautiful home that will resist fire and weather, never need painting . . . no wonder you find "Century" Asbestos-Cement Siding on so many homes!

"Century" Siding has a natural, weathered grain finish, deep shadow lines and attractive color—all adding up to permanent beauty. This sturdy material won't crack or curl . . . actually grows tougher with age.

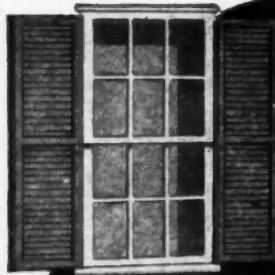
Your workmen can apply it easily and quickly, thanks to its large size—24" wide. This means low installation costs, bigger profits for you.

Specify "Century" Asbestos-Cement Siding on those jobs you're planning now. See your K&M Dealer, or write direct to us for further details.

Original manufacturers of asbestos-cement roofing shingles in this country.

**KEASBEY & MATTISON**  
COMPANY • AMBLER • PENNSYLVANIA





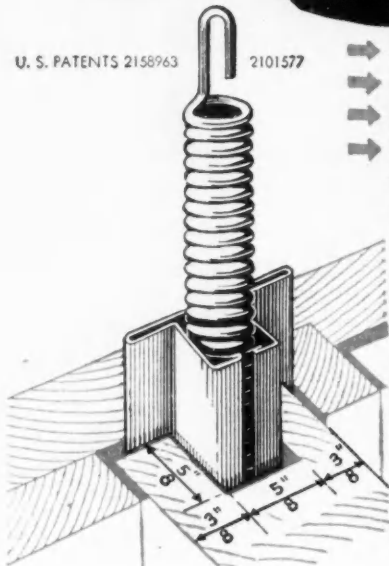
*For better weather protection: for perfect window operation . . . . .*

**MASTER NO-DRAFT SASH BALANCE**

U. S. PATENTS 2158963

2101577

- ➔ GIVES SASH FINGER-TIP CONTROL
- ➔ ELIMINATES WEIGHTS AND PULLEYS
- ➔ PREVENTS BINDING AND STICKING
- ➔ PROVIDES PERFECT WEATHER-STRIPPING

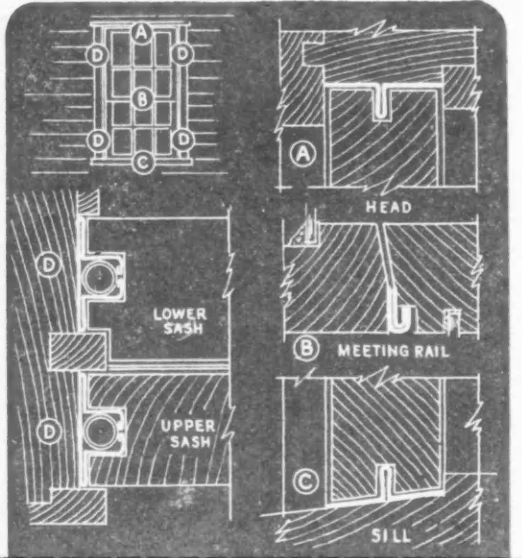


Here is the modern, patented and time-tested equipment which provides the most practical and economical protection and operation for double-hung windows. For any window, old or new, Master No-Draft Sash Balance can be installed quickly and easily for life-time service and satisfaction.

Properly tempered, correctly tensioned springs give upper and lower sash perfect balance. Metal housing, self-adjusting to the shrinking or swelling of the wood, provides metal runways for the sash that never need painting. They will not rust. They eliminate sticking, binding and rattling.

Master No-Draft Sash Balances act as a perfect weatherstrip for both sides of the window. For the top, bottom and meeting rail, Master cross strips are recommended as shown below.

For new, plank-frame windows or old box-frame windows of any size, save money, time and labor . . . get the facts now about Master No-Draft Sash Balance. Use the coupon below.



**MASTER NO-DRAFT SASH BALANCE**

MASTER METAL STRIP SERVICE,  
1720 N. Kilbourn Ave.,  
Chicago, 39, Ill.

Please send me, without obligation,  
complete information about Master  
No-Draft Sash Balance.

Name .....

Address .....

City .....

State .....

MAIL THIS COUPON TODAY

**This Business of Home Building—**

*(Continued from page 97)*

basis of standards determined by the management engineer and our architectural engineer, and keeps a record of the amount of material that goes into each house. He has the further responsibility of maintaining trucks and equipment.

In the office we have an accounting department and office manager. In addition to the normal functions of the office they also keep an accurate track of the flow of materials, acting upon information supplied them by the material expeditor and co-ordinated through standards set up by the management engineer. These are the men who schedule the delivery of materials from the manufacturers so that our material bank never falls below three weeks anticipated production. Working alongside them is a man who administers the apprentice training program. He keeps employment records and is one member of the grading committee which meets once a month to study reports on the apprentice training program maintained by the foremen and the union steward. The other members of the committee are the job supervisor, management engineer, chief steward and two other union representatives.

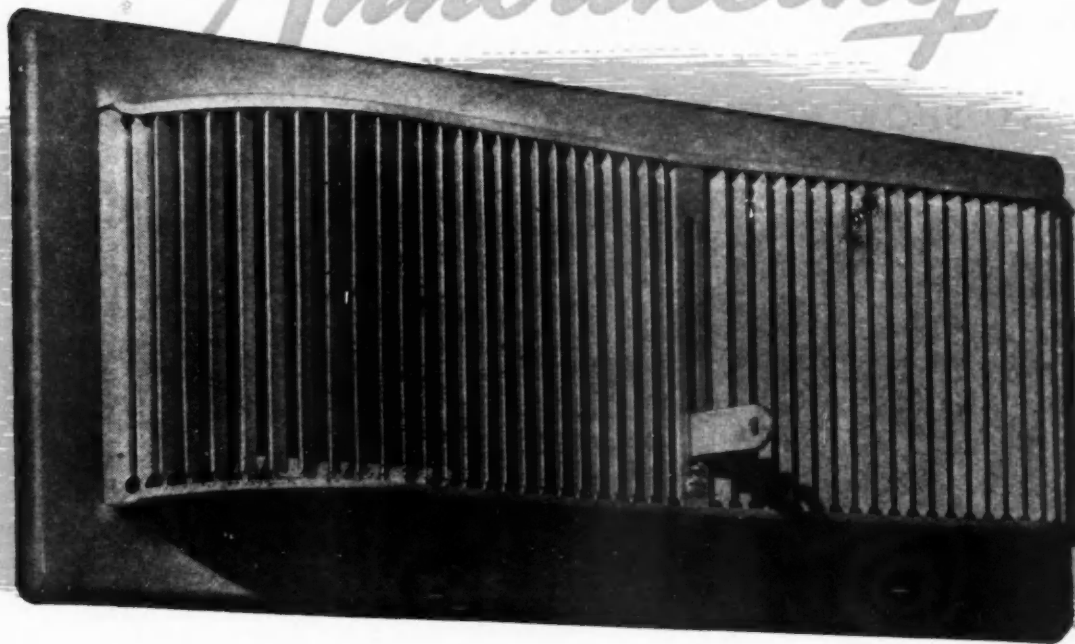
**Conventional Building Methods**

Our building methods are completely conventional, usually consisting of cinder block and brick veneer construction. All materials which go into the house must be acceptable to FHA inspection and the quality of workmanship must be of the highest. We do organize our production to avoid costly delays and wastes. We have shown you how we control materials; in much the same manner we control the rate of production. The men on the job are divided into crews according to crafts, and divided within the craft according to the nature of their work, thus: carpenters are either mill men, framing carpenters, or finish carpenters. We work the project street by street, the masons and frame carpenters being first, while the mill men are preparing the finish lumber. When the masons and framing carpenters have finished with the street, then the lathers and plasterers start down. The rough plumbing has been put in. Following them come finish carpenters who lay the floor, put in moulding and trim. Lastly come the painters. Working alongside at the proper time are the men who put in the wiring and heating.

While finishing crews are working down the one street, the masons and frame carpenters are already working down the next; there is a continual flow of labor and it is possible almost at a glance to tell at what stage of completion the job is as a whole. From the time the first house reaches final inspection we calculate that there will be two houses finished each working day. If, as we anticipate, 120 days have been spent in developing the land and getting the first house finished and thereafter two houses each working day have been completed, we estimate that the project is assured

*(Continued to page 132)*

# Announcing



## TRUE DIFFUSION...

with the *Handsome New*

## HONEYWELL AIR CONDITIONING REGISTER

**HERE'S** what this new register's improvements mean to YOU.

**1. Balancing becomes a QUICK, ONE-MAN job.** Self-contained volume dampers accurately meter the air with an adjustable lever at the Register itself. Locking feature guards against unbalancing system.

**2. Branch quadrants can be eliminated,** when velocities are under 800 fpm. This saves you the cost and inconvenience of branch quadrants.

**3. Installation costs are drastically cut** by eliminating quadrants and simplifying balancing.

**4. Smart new appearance and functional design** do away with that "hole-in-the-wall" look. Customers like

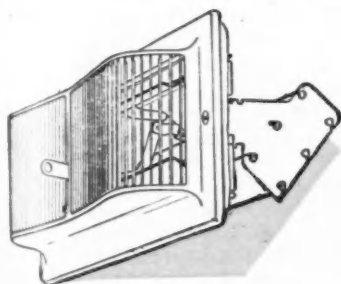
the gently curving lines which assure wide air diffusion for "Comfort Unlimited" by Honeywell.

**5. No streaks on walls and ceilings.** Wide diffusion of air stream and sponge rubber seal-offs prevent streaking of walls and ceilings.

**6. Manual shut-off** for home-owner convenience and fuel saving.

Investigate the many advantages of this remarkable new register. You'll benefit and so will your customers when you include the Honeywell register with every forced-warm-air installation.

It will be available through your wholesaler. Write today for complete information. Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Toronto 12, Ontario. Branches and distributors in all principal cities.



Fixed angle turning vanes are an integral part of the register... They prevent turbulence of the air stream. Diffusion vanes are adjustable.

MINNEAPOLIS  
**Honeywell**

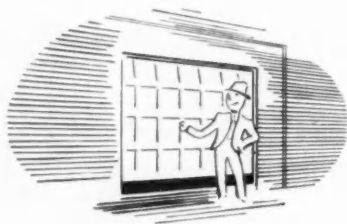
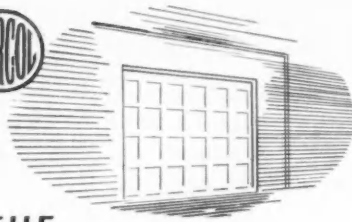
CONTROL SYSTEMS

2

SIMPLE TESTS  
TO SHOW HOW THE

# Barcol OVERdoor

**IS WEATHERTIGHT AND  
EASY-WORKING...**



1

**Test 1. EASY-WORKING.** *The simplest and surest way to tell how well the Barcol OVERdoor works is... work it. Raise it... lower it. Note the "floating balance". Note the roller-bearing glide of the sections... upward and downward. No other overhead door works any easier!*



2

**Test 2. WEATHERTIGHT.** *To keep out weather, a door must close snugly... and a really snug door won't rattle. So... take hold of the handle on that same door that closed so easily... and try to rattle it. You can't... because the exclusive closing action of the Barcol OVERdoor insures all-around weathertightness... and easy operation!*

See our Catalog  
in SWEET'S

## Barber-Colman Company

104 MILL STREET • ROCKFORD • ILLINOIS

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

(Continued from page 130)

against loss when the 100th house is finished and sold.

Let's look further into this break-even point of 100 houses. We stated before that \$50,000 would be spent on construction before loan money would be forthcoming. When approximately 100 houses have been sold the 3½ per cent of sales price allotted to overhead added to the 3½ per cent profit margin offsets the \$50,000 cost of getting in the business, assuming an average sales price of \$8,000 per house. From the hundredth house on, lowered overhead costs bring the net profit on the entire 200 houses to \$30,000, or 3½ per cent of \$1,600,000 minus taxes.

To reduce further the costs of construction in the future we are experimenting with various dry-wall treatments. So far our best bet seems to be plywood storage walls. The advantages of having built-in bookcases, closet space, etc., seem to offset any public antipathy toward plywood walls.

### Houses Are Basementless

Since we do not use basements we cannot use coal furnaces. Up to the present we have been using forced air gas heat because we operate in a natural gas area. In the future, however, we anticipate even greater restrictions on the use of gas here and elsewhere in the Middle West and we are therefore looking into the possibility of forced air oil heat with units appropriate for use in utility rooms.

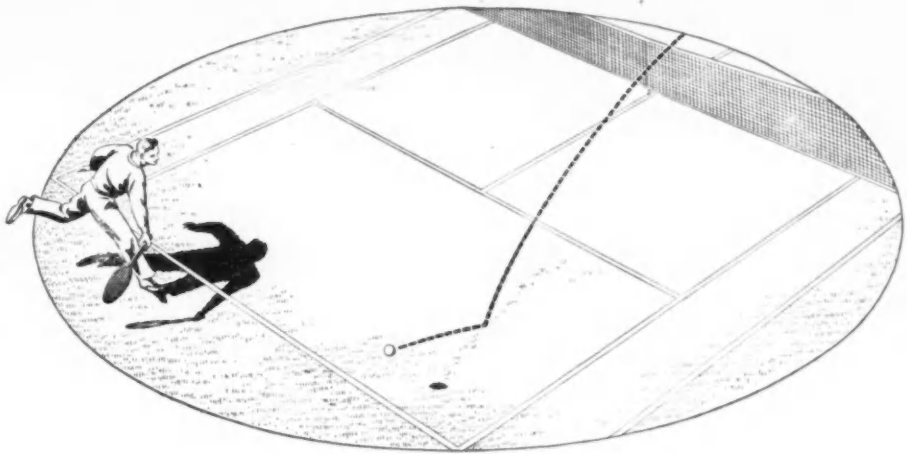
In the past we have used asphalt tile over the concrete bases with hardwood floors in the upper stories. We are also considering Parkay oak and even cork as substitutes although there is no objection to asphalt tile. Also we offer the customer the option of purchasing stove and refrigerator as part of the mortgage. In the case of veterans this has proved advantageous to them and to us since we purchase the equipment with dealer's discount and sell it at list.

When we add the profit which we make on the lot, which averages \$270 for a \$1,000 lot, plus the 3½ per cent profit on total sale price, plus miscellaneous profits from the sale of equipment, we estimate our total net profit at around \$50,000 on a \$200,000 capitalization.

The houses are sold as completed through a realty organization which we control in the same fashion as we do other subcontractors. The real estate man whom we select to work with us has the immense advantage of being able to list over 200 or more units a year without any solicitation costs, as well as the privilege of handling any property he can get hold of. Even on less than the normal realtor's fee of 5 per cent, our realtor subcontractor makes good money for himself. He has one further advantage—in the sales contract for the house the purchaser is obligated to buy his fire and extended coverage insurance through the realtor and the commission on the insurance adds to his net income. Ideally, the realtor should also be in a position to handle mortgage paper so that he has the resale rights to any prop-

(Continued to page 134)

*It's  
Where You Are  
That Counts —*



# Roddiscraft Warehouses Are Where It Counts When It Comes to Service

**Nationwide Roddiscraft Warehouse Service**

Cambridge 39, Mass. . . 229 Vassar St.	Long Island City, New York . . . . .
*Chicago 8, Ill. . . 1440 W. Cermak Road	. . . . . Review* & Greenpoint Ave.
Cincinnati 2, Ohio . . 457 E. Sixth St.	*Los Angeles 11, Calif. . . 2860 E. 54th St.
*Dallas 10, Texas . . 2800 Medill St.	Marshfield, Wis. . . . . 115 S. Palmetto St.
Detroit, Mich. . . 11855 E. Jefferson Ave.	*Milwaukee 8, Wis. . . . . 4601 W. State St.
*Kansas City 8, Mo. . . 2729 S.W. Blvd.	New York City, N. Y. . . . . 920 E. 149th St.
Louisville 10, Ky. . . 1201-5 S. 15th St.	*San Antonio, Texas . . . . . 727 N. Cherry St.

**DEALERS IN ALL PRINCIPAL CITIES**



**Roddiscraft Warehouse  
"Service-Centers" Offer—**

- Roddiscraft Flush Veneer Doors
- Roddiscraft Hardwood Plywood
- Softwood plywood
- \*Fir Doors

*All kinds of lumber products*

Formica — the nation's No. 1 cabinet, counter, and table top cover in black and colorful patterns

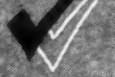
*Doors and plywood now available in stock sizes.*





On-hand service at key distributing points — plus a complete line of quality products; Roddiscraft hardwood doors and plywood — fir plywood — Formica, and lumber products — offers you what you want, where you want it when you want it.

Every Roddiscraft warehouse is a "service-center" for you, keyed to the needs of dealers in the distributing area. Call on Roddiscraft for the best products at fair prices. Doors and plywood in stock sizes available now.

**Roddiscraft**  
*Roddis Lumber & Veneer Co.*  
MARSHFIELD, WISCONSIN



Check   
the double  
advantages of:

-  Eagle RTU is *pure white lead*. It has all the famed durability, beauty and economy of this most famous of painting materials.  
**And**, Eagle RTU comes factory-mixed for perfect brushing. It goes to the job in the original container, all set to open, stir and apply.
-  Eagle RTU spreads smoothly and easily. It covers completely, leaving no brush-marks, has real white lead hiding and staying power.  
**And**, Eagle RTU makes a smooth, gleaming elastic coat that won't crack or scale . . . defies time and weather, ages evenly by gradual chalking.
-  Eagle RTU is favored by builders for time and labor saving convenience . . . because it enables them to do a *better* job more efficiently.  
**And**, Eagle RTU is preferred by homeowners because of its beauty and durability . . . because of its *whiter* white that stays white *longer*.
-  Eagle RTU is white lead paint in a *modern* form.  
**And**, Eagle RTU is backed by Eagle-Picher's 104-year-old reputation as well as by the 2,000-year-old reputation of white lead.



### THE EAGLE-PICHER COMPANY

CINCINNATI (1), OHIO

Member of the Lead Industries Association  
Since 1843

**EAGLE PURE  
WHITE LEAD**  
*Paint*

*Lead, the indispensable metal, is required in increasing quantities for industrial use. This, plus a shortage of linseed oil, has reduced stocks of white lead paint. However, you may look forward, soon, to increasing supplies of Eagle RTU.*

(Continued from page 132)

erty we construct for many years in the future. We estimate that a realtor who stays with us in one locality through our ten-year program will have enough turnover thereafter on mortgage insurance, renewals, and resales to provide him an adequate income for life.

When the house is sold we stipulate a cash payment of \$250, none of which is applied to equity. Approximately \$100 pays for the first three-year premiums for fire and extended coverage insurance. Fifty dollars is required to cover loan closing expenses, having the abstract recorded, the title examined by a lawyer, etc. The other \$100 is the customer's down payment on a five-year service contract with a unique type of service organization.

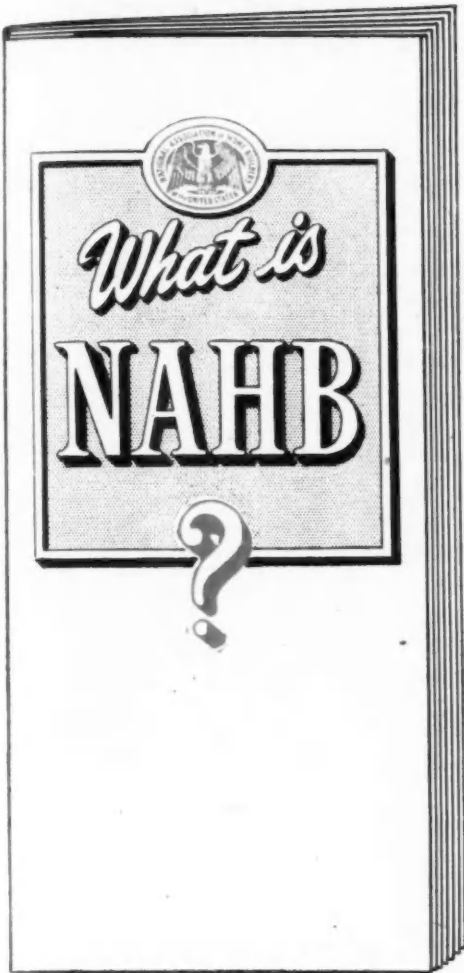
#### Service Organization Unique

Bradford Home Service, Inc., in return for the \$100 plus one dollar a month for the first year, two dollars a month for the second year and \$2.50 for the third, fourth, and fifth years, will repair all defects in workmanship, plaster cracks, touch up paint, repair woodwork and plumbing and heat defects and clean grease traps and furnace filters periodically, in addition to installing and removing screens and storm doors which are part of the house price. Furthermore, the service organization will repair any fixtures damaged or broken through the owner's negligence or accident at the cost of the materials themselves without charge for labor. Even though it's not called for in the contract, Bradford Home Service starts its relations with the customer by cleaning and waxing all floors prior to moving in. This one act symbolizes the entire purpose of the organization. It is to assure the customer that we stand by the quality of the house, that we want him to be comfortable and contented with his purchase, and that we will make every effort to cooperate with him in the enjoyment of his home ownership. It is a completely non-profit organization and it is, we believe, unique in the building business.

There is very little more to be said in describing how an operative builder comes into being and operates. Obviously, it is not a simple organization nor a care-free existence. The days and months before any money is coming in are hard to live through—but the final rewards are ample, and the sight of hundreds of families enjoying homes of their own gives a unique thrill to the builder. There are many ways in which we can improve our organization and our methods. We look forward to cutting costs even more than we now do. There are millions of people who need places in which to live. Most of them earn less than \$50 a week. We want to build houses for these people either to buy or to rent. We also feel that there is room for many, many more with the same desire.

Let's quit talking about what we can't do. Let's quit worrying about what the government will or will not do. We can build homes for veterans! Let's get on with the job.

# NAHB is fighting for you—and serving you—daily



**WHETHER** or not you are one of the 12,000 members of the National Association of Home Builders, NAHB is constantly serving you.

NAHB has fought to protect your business and has finally thrown off all government controls so that you now can build to your maximum capacity.

NAHB is constantly seeking improved financing methods and will continue to make possible insured loan procedures for the millions of homes which must be built in the years ahead.

NAHB has blocked public housing construction in competition with your business—and will carry this fight unrelentingly as each new bill is introduced.

NAHB informs its membership weekly through its Washington Letter of all developments which affect your business—a single service worth far more than the small cost of membership.

NAHB is made up of individual members and the membership of more than 100 Affiliated Local Associations in all large cities.

NAHB is composed of small builders—run by small builders—for the benefit of small builders.

Mr. Frank Cortright, Executive Vice President  
National Association of Home Builders  
1028 Connecticut Ave., N.W.—Suite 1116  
Washington 6, D.C.

Without cost or obligation please send me a copy of "What is NAHB?"  
Also please send me the name and address of my nearest Affiliated  
Local Association.

Name \_\_\_\_\_  
(Print)

Firm \_\_\_\_\_

Street & No. \_\_\_\_\_

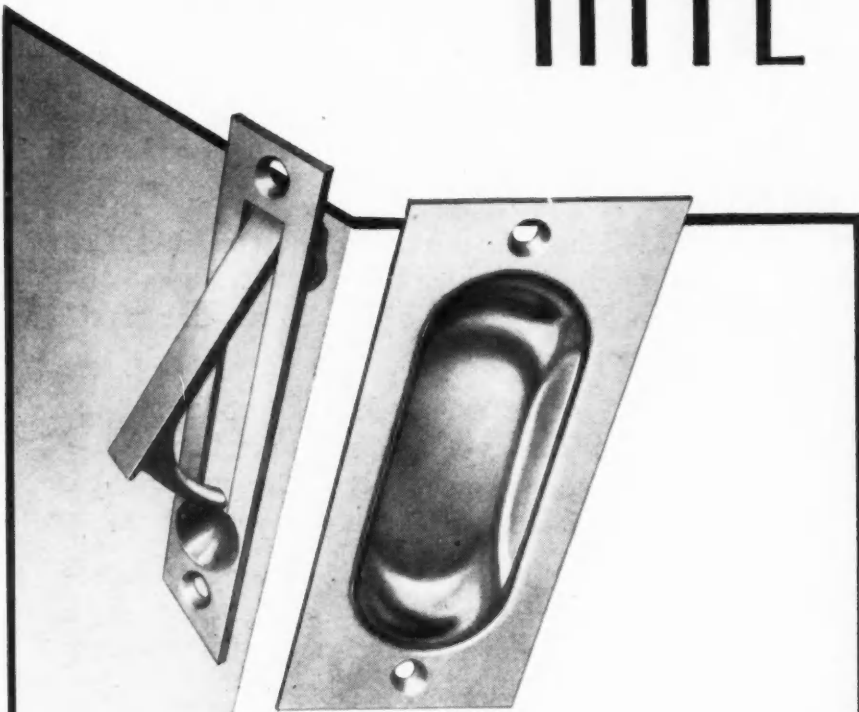
City & State \_\_\_\_\_  
(Give postal zone, if any).

NAHB can do a better job with your support. Fill out and mail the request for "What Is NAHB?" which will be sent without cost or obligation.

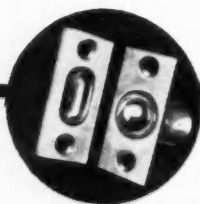
**SEND FOR INFORMATION**

QUALITY FOR A HALF CENTURY ADAMS-

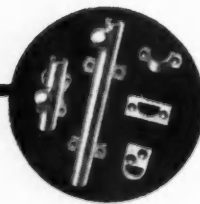
# RITE



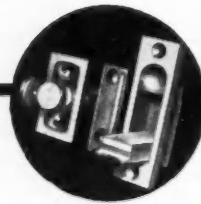
**RITE SLIDING DOOR HARDWARE WINS APPROVAL** when shown. It is good-looking, substantial, functional. We manufacture a number of sizes and styles of both cast and forged brass and bronze Flush Pulls which may also be installed as window lifts. For heavy doors we make a concealed grip Edge Pull which fits flush in the leading edge of the door . . . a light spring retracts the pull when not in use. Jamb bolts, designed as locking devices, are likewise made in several types for large or small sliding doors. Be sure to recommend the RITE sliding door hardware and you'll make friends.



**RITE BALL LATCHES**  
Adjustable for shrinkage or warpage. Two sizes, small enough for cabinet doors, large enough for all standard doors.



**RITE BRASS SURFACE BOLTS** are extruded in patented girder shape— $\frac{3}{8}$ "— $\frac{1}{2}$ "— $\frac{5}{8}$ " widths. Adjustable on job for throw required.



**RITE JAMB BOLTS** In two styles—of solid brass. Mount in rear stile of door to positively lock a door from inside only. Useful on windows.

QUALITY HARDWARE FOR



NEARLY HALF A CENTURY

**ADAMS-RITE MANUFACTURING CO.**

540 WEST CHEVY CHASE DRIVE, GLENDALE 4, CALIFORNIA, U. S. A.

## Special Lighting for Modern Kitchens

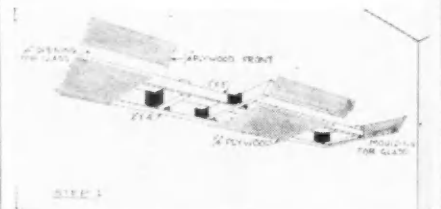
**A**N unusually high level of 60 foot candles of illumination has been achieved for the modern kitchen shown below through the use of a combination of overhead lighting which follows work surfaces, giving both direct and indirect



60 foot candles of light in kitchen.

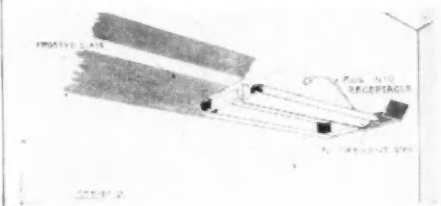
lighting, and local lighting beneath the cabinet surfaces.

To form a frame for the shelf which contains the overhead fluorescent lighting, first cut strips of wood 2"x4" and 1"x3", and join them with metal braces. Next, cut lengths of plywood either  $\frac{1}{8}$ " or  $\frac{1}{4}$ " thickness to form a cover for the framework, and leave a sufficient opening along the underside in which to fit the glass which forms a shielding for the lights. Attach wood mouldings as indicated to hold the glass.



STEP No. 1 in building the shelf.

Next, screw fluorescent strip lighting fixtures to the framework as shown in the drawing. Wires of these fixtures can be attached to an extension cord so that the plug at the end of the cord will



STEP No. 2, placing lighting strip.

fit into the nearest outlet, or a wall outlet specifically located for the plug. The lighting strip fixture comes with holes drilled in the back, and screws to fit. Use 15, 20 or 40-watt fluorescent lighting strips which measure 18, 24 and 48

(Continued to page 138)



# Builders Contractors

## NOW YOU CAN BUILD and SELL

### Pre-Assembled Conventional-Type ARLINGTON HOMES

#### AT A PRICE YOUR COMMUNITY CAN AFFORD . . . AND

#### AT A BETTER PROFIT FOR YOU!

WOULD  
*This*  
SOLVE YOUR  
Problem?

Typical Arlington  
Home Model #2001

Completed by  
Contractor  
With Land **6750.00**

Selling Price  
to Public **7750.00**

### Immediate Delivery!

ARLINGTON Pre-Assembled  
HOMES are shipped complete

#### WE FURNISH EVERYTHING

Arlington ships you complete homes; pre-assembled of all seasoned lumber, including inside trim, oak flooring, inside doors, plumbing fixtures, heating units, soil pipe, kitchen cabinets, plaster goods — everything except the foundation!

#### ELEVATION VARIATION

Arlington does away with stereotyped appearance, no matter how many homes you erect. Builders can erect fifty of the same model Arlingtons, side by side, and give each unit an individual appearance!

#### QUICKER ERECTION

Arlington Homes can be under roof in 24 hours. This advantage, plus Arlington furnishing all the materials you need "on the job", assures proven savings in labor, time and procurement costs!

#### ALL SIZES

Arlington offers one story, 1 1/2 story and two story units; with 2, 3 or 4 bedrooms.

#### FHA and GI ELIGIBILITY

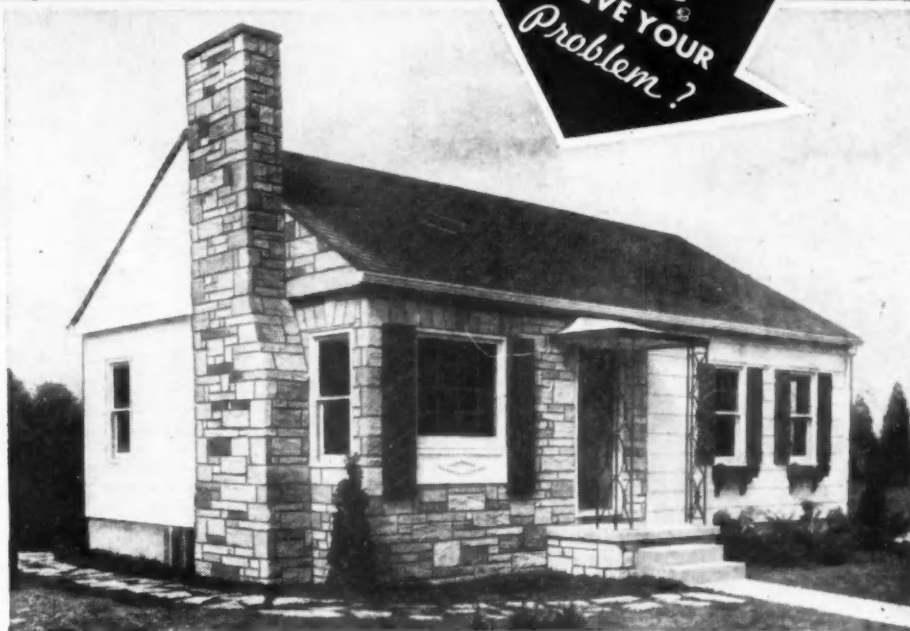
Arlington Homes meet or exceed every FHA specification and pass all city, county and state building codes. Builders receive highest construction and mortgage loans on Arlingtons.

#### UNION MADE — LABOR ACCEPTANCE

Arlington units are union made throughout and bear the union label. Labor and subcontractors readily accept Arlingtons. All supplementary materials are applied and installed in the conventional manner.

#### CONVENTIONAL TYPES — PUBLIC ACCEPTANCE

Arlingtons are conventional-type homes, having 2 x 8 floor joists, 2 x 6 rafters, 2 x 4 studding (all 16" on center); double constructed with wood sheathing and regular weatherboarding or cedar shingles; etc.



## Write ARLINGTON HOMES MFG. CORP.

500 N. STANWOOD RD., COLUMBUS 9, OHIO

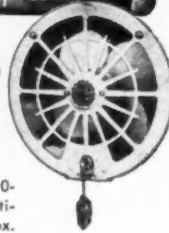
PHONE FAIRFAX 3183

if YOU worked over a  
Hot Stove...



you'd remember to specify  
**EMERSON-ELECTRIC**

*Kitchen  
Ventilation*



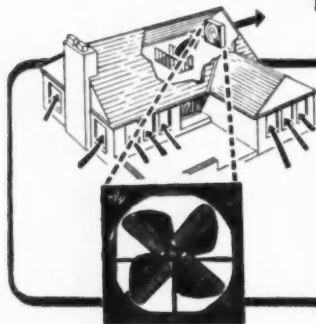
Emerson Junior 10-Inch Kitchen Ventilator with wall box.

If you took time out on every designing or home construction job to sniff the odor of cooking cabbage, chances are you'd never fail to specify Emerson-Electric Kitchen Ventilation.

Fussy housewives become your biggest boosters when your plans provide for kitchen comfort. Again this year, Emerson-Electric is making your client-job easier by selling the idea of proper kitchen ventilation in more than a score of popular magazines reaching thousands of present and prospective home owners.

For detailed specifications on Emerson-Electric Kitchen Ventilating Fans, write for free Folder No. 207 today!

**THE EMERSON ELECTRIC MANUFACTURING CO.**  
ST. LOUIS 21, MISSOURI



*Breeze Condition*  
The Entire Home with an  
**EMERSON-ELECTRIC HOME COOLER FAN**  
Installed in attic, this sturdy fan forces out day's accumulation of hot air, draws in refreshing night air through open windows and doors.

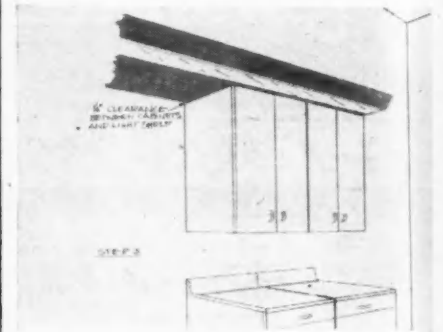
32

**EMERSON**  **ELECTRIC**  
MOTORS FANS APPLIANCES

(Continued from page 136)

inches in length. Then, paint the wooden shelf and insert panels of frosted glass.

Leaving a clearance of about 1/4-inch below the lighting shelf, install or re-assemble the cabinets. Clearance is necessary for easy operation of cabinets. Measure cabinets before starting to de-



STEP No. 3. Note cabinet clearance.

termine amount of material, and size of lighting strips.

Designed by William Mistreta of Sylvania Electric Products, Inc., the lighting consists of a continuous row of one 20-watt and three 40-watt fluorescent lamps set in the shelf described above, a 30-watt fluorescent lamp in the window valence, and 20-watt fluorescent lighting strips shielded with ribbed glass beneath the cabinets on each side of the sink.

\* \* \*

**Georgia Hardwood Buys Bellingham Plywood Corp.**

**PURCHASE** of controlling interest in the Bellingham Plywood Corp. of Bellingham, Wash., by the Georgia Hardwood Lumber Co. of Augusta, Ga., is announced by Owen R. Cheatham, president of the Georgia Hardwood company.

Production from the Bellingham manufacturing plant, which averages 75 million feet of Douglas fir plywood annually, will be added to that of the parent company immediately; the production and sales volume of both concerns are at record high levels, the announcement stated.

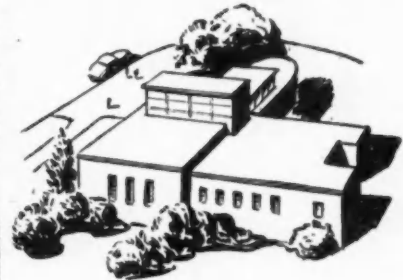
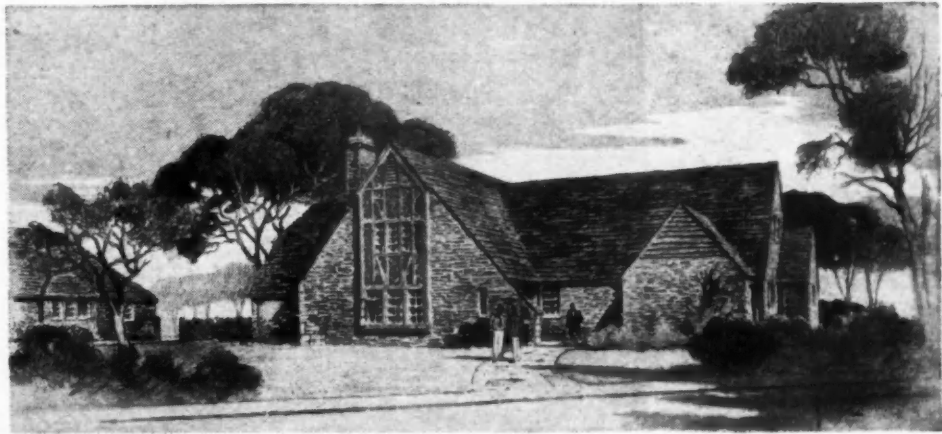
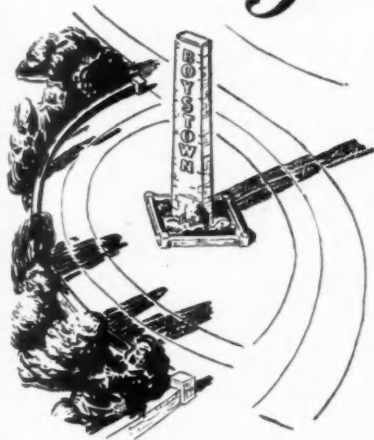
"Control was acquired by outright cash purchase, without recourse to financing, after negotiations of nearly a year. The financial strength of both the parent company and the new subsidiary are such that the working capital of the consolidated group is little affected," Cheatham declared.

No change in subsidiary executive personnel is contemplated, Cheatham said, but Victor Olson, vice president and general manager, will become president and general manager, and Cheatham, president of the parent company, will become chairman of the board of the Plywood Corporation.

Olson established the Bellingham corporation in 1941, after having been a production executive with the United States Plywood Corp. for a number of years. He is generally regarded as one of the most efficient and able operators in the plywood industry.

# Boys Town

**FATHER FLANAGAN SEES THE REALIZATION OF A THIRTY-YEAR DREAM**



*Boys Town designs, a few of which are shown here, are the work of Leo A. Daly Co., Omaha, Nebr., architects.*

## **Buildings, living quarters completely Bryant Winter Air-Conditioned**



A dream that began thirty years ago with a young priest and five homeless boys is nearing reality with the construction of a three-million-dollar addition at Boys Town, ten miles from Omaha, Nebraska.

When completed, Father Flanagan's Boys Town will be able to provide accommodations

for one thousand boys, more than twice the number now being cared for. The new addition includes twenty-five cottages of the type shown in the larger illustrations above, each of which will house twenty boys of high school age; a grade school and a high school, both completely equipped with motion picture apparatus for visual education; a fully-equipped trade school; a field house, athletic fields and swimming pool; an administration building and all other facilities necessary to the proper care of destitute boys of every race and creed.

Besides these living and educational facilities, Boys Town's nine hundred acres include great farm lands and its own herds of dairy and feeder cattle, as well as

sixty acres of vegetable gardens. Here farm and dairy training are provided for boys who are so inclined.

All buildings and living quarters at Boys Town are equipped with Bryant BA-88 Winter Air Conditioners. The BA-88 is made in seven sizes with outputs up to 200,000 BTU per hour. Bryant Heater Company, 17825 St. Clair Avenue, Cleveland 10, Ohio . . . *One of the Dresser Industries.*

# bryant

**GAS HEATING**



LET THE PUP BE FURNACE MAN

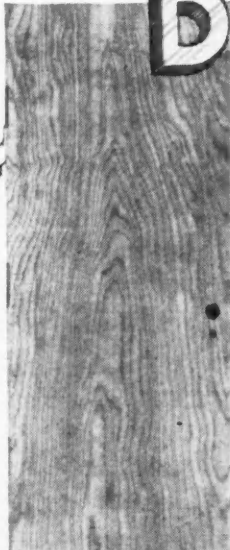
# Give Building Owners



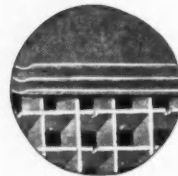
# PAINÉ REZO

# DOORS

## You Can't Give Them More



U.S. Pat. 1,887,814 The exclusive interlocking grid core within the Rezo door allows constant air circulation, adds extra strength, and provides greater rigidity



WHEN you're building apartments under today's conditions, it's high time to get down to cases . . . time to give your building owners the basic dollar values they want and need to come out right on their investment. Then give them initial low cost of installation that registers on their pocketbooks—clean, exact-size flush doors that are quickly installed and are painted or stained in record time. Give them freedom from future trouble and maintenance expense with doors whose patented air-cell features provide the greatest dimensional stability on the market. Give them doors that are beautiful and dependable, doors that will be a lasting credit to your name—as proved by over 2,000,000 existing installations. Yes—give them 1 $\frac{3}{4}$ " Paine Rezo doors . . . you can't give them more.

Write today for factual, contractor's bulletin.

Manufactured by the

**PAINÉ LUMBER CO., Ltd.** Oshkosh Wisconsin

ESTABLISHED 1853

## More Building Restrictions Eased by Housing Expediter

HOUSING Expediter Frank R. Creedon has announced that federal housing permits are no longer required of those who want to build homes for themselves or for veterans; that the limit on the number of bathroom fixtures to be installed in a new house has been removed, and that the 1500 square foot limitation on homes has been expanded to 2,000 square feet. These controls are being dropped further to simplify the few remaining restrictions and because of improved building materials supplies, Mr. Creedon stated.

Remaining controls, which will be continued until conditions permit further relaxation or unless Congress directs their removal before then, according to Creedon, are:

The construction limitation order (VHP-1) under which authorization must be obtained to construct non-housing.

Veterans' preference, under which a person building a house not intended for his own occupancy must give a veteran first choice on buying or renting the property.

The requirement that houses be built for year-round occupancy.

Guaranteed market contracts for prefabricated houses and new-type materials.

Premium payments on pig iron and cast iron soil pipe at least through June 30.

Rent ceilings on new construction.

Sales prices and rent ceilings on houses built under priority authorization granted prior to Dec. 24, 1946.

Allocation of a few basic materials, such as pig iron for cast iron soil pipe, shop grade lumber for millwork, and three voluntary allocation plans.

And the order (PR-28) which assists producers of building materials in obtaining new capital and replacement equipment and bottleneck production materials.

\* \* \*

## Forest Conservation Program

THE program private forest land owners of the Pacific Northwest have devised to insure a perpetual supply of forest products from that region is presented in a new book titled "More Timber." It was prepared by the Joint Committee on Forest Conservation, which represents the West Coast Lumbermen's Association and the Pacific Northwest Loggers Association.

In clear, concise style, attractively illustrated with photographs, the book discusses tree farms, "Keep Green" organizations, and cooperative tree nurseries—all developments of forest management which originated in the Douglas fir region. It also points out that of the privately-owned land in the Douglas fir region, one-third of that which has been logged is now in certified tree farms.

Copies of "More Timber" may be obtained by writing West Coast Lumbermen's Association, 1410 S.W. Morrison Street, Portland 5, Oregon.

# HOME BUILDERS!

## INCREASE THE SALES APPEAL OF YOUR NEW HOMES WITH—

# Leigh DUST CHUTES

**72%\* OF AMERICA'S HOUSEWIVES DEMANDED A LABOR SAVING METHOD OF DIRT AND DUST DISPOSAL.**

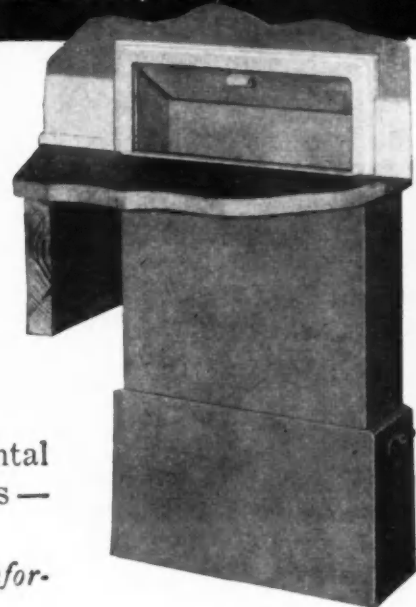
\*Poll by leading home magazine.

The Leigh Dust Chute was designed to answer this need. Installed in the kitchen or pantry baseboard, it replaces the old fashioned dust pan method of dirt and dust disposal. Housewives' instant acceptance of the Leigh Dust Chute proves how well it has answered this demand.



The Leigh Dust Chute is a low priced unit consisting of 3 parts; the face, the chute and dust bin. The face is finished in white enamel (infra-red baked) with a door that trips open with the foot and stays open until closed. The Chute extends down into the basement to a dust bin at the bottom.

The unit itself is quickly and easily installed by cutting a hole thru baseboard and floor. The Chute is pushed up from the basement and nailed in place. The face is then nailed in position and the unit is ready for use.



Cut away view shows  
Dust Chute installed

Other quality LEIGH Building Products—Ornamental Shutters in two attractive designs—Clothes Chute Doors—Attic and Roof Ventilators.

*Write today for complete prices and Information. Immediate delivery.*

*Styled and Built by*

**AIR CONTROL PRODUCTS, Inc.**  
COOPERSVILLE MICHIGAN





# NEW!

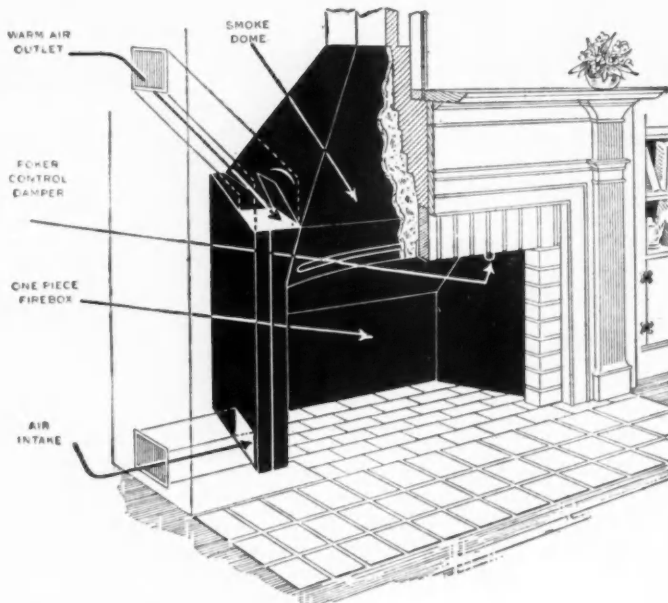
The **BETTER** circulating  
**FIREPLACE UNIT**  
*Designed and Built by Pioneers*

Here is important news for everyone interested in selling, building or using Circulating Fireplaces. F. E. Price and H. H. Walters—engaged for nearly 20 years in developing and manufacturing Fireplace units—"joined hands" in 1946 to build FYRO-PLACE—the better Circulating Unit.

Mr. Price was formerly Treasurer and General Manager of Heatilator, Inc. Mr. Walters, inventor of the Circulating Fireplace Form, was Chief Engineer of Heatilator, Inc. Out of this experience has come a better circulating fireplace unit, with these

## Outstanding **FYRO-PLACE** IMPROVEMENTS

- **Increased Volume of Warm Air**—larger air outlets—no air-flow obstructions.
- **Improved Draft**—streamlined firebox and smoke dome.
- **Free Smoke Passage**—No obstructions in smoke dome—no eddies.
- **Improved Damper**—simple to open or shut with poker. Fits closely so no warm air is wasted when fireplace is not in use.
- **Insulating and Expansion Cushion** of rock wool.



Sold through your building supply dealer. **WRITE US TODAY FOR FULL INFORMATION.**

**PRICE FIREPLACE HEATER & TANK CORP.**  
1 Austin Street Buffalo 7, New York

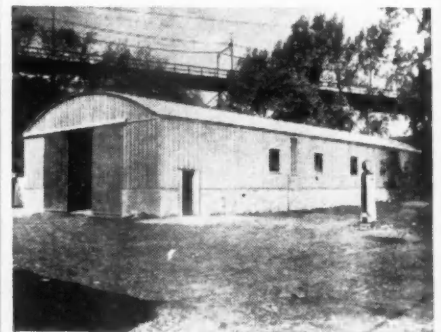
## Steel Sheets Speed Building Erection



ROOF sheeting laid across faced-in channels.

**T**HIS Blaw-Knox insulated steel building was quickly and easily erected to house the new truck rental facilities of R. G. Mayberry, Pittsburgh, Pa. The construction work was done by Mayberry's own crew which had the skeleton of the building up in two and one-half days.

The building illustrates one of the new trends in commercial construction—the use of pre-assembled panels and steel roof sheeting. The combination



COMPLETED structure ready for trade.

of steel structure and concrete block foundation walls as shown here provides operating advantages as well as economy in cost, according to Mr. Mayberry.

The building has a single span, with clear space to the eave throughout its 40-foot width and 104-foot length. Arch type roof supports make possible this wide space and contribute to roof strength as well as to interior attractiveness. The roof sheeting is laid across large, faced-in channels, which give the effect of a beamed ceiling. The walls are formed of preassembled 8-foot panels, in heights up to 12 feet, and are framed on the inside by 3-inch channels. The doors were adapted to the special height and headroom conditions by the Blaw-Knox Co. Treated insulating sheets between the sheeting and the inner structural members eliminates condensation inside the building and contributes to heating economy and summer comfort.

Arrangements to provide local distributors of Blaw-Knox steel buildings are being made.

### A "Sea-Side" Beauty Celebrates Eight Years of Public Acclaim!

Crawford's Sea Grill—famous Seattle, Washington, restaurant, on the shores of Puget Sound—was built in 1940. Top photo was taken soon after completion; the picture at the right was made in May, 1947. This plywood building has given excellent service—and has many years to go.



## "OUTSTANDING SERVICE"

... says Builder Bob Atwell,

## "Our Experience Puts Plywood On the 'Preferred Material' List"

THIS attractive, modern restaurant is another example of plywood's extensive use for commercial buildings of almost every type. For eight years it has been attracting the public's eye—and patronage! Designed by Architect George Groves of Seattle, and built by the Atwell Construction Company, it has proved a much-copied structure. Builder Bob Atwell says:

"Douglas fir plywood is definitely on our list of preferred materials for both commercial and residential work. We were, I believe, among the first to use Exterior plywood for large, non-residential jobs, and in every case it has turned in excellent performance. We take advantage of plywood's strength, durability and ease of handling whenever possible."

### PLYWOOD'S MANY ADVANTAGES KEEP DEMANDS GREATER THAN PRESENT SUPPLY

Douglas fir plywood production is greater now than in prewar years. Today's demand, however, is unprecedented—and raw material availability is the controlling factor in attaining higher output. This uneven demand-supply ratio naturally means that plywood may not always be readily obtainable at any given time and place. Keep in touch with your regular source of supply as to price and delivery information. For technical data, write the Douglas Fir Plywood Association, Tacoma 2, Washington.

## Douglas Fir PLYWOOD

LARGE, LIGHT, STRONG

Real Wood Panels

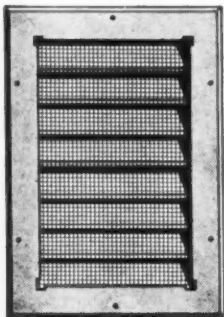


Manufactured in two types: EXTERIOR, for permanent outdoor applications; INTERIOR, for inside use. Both types are available in several appearance grades.

If You  
**INSULATE**  
 You Must  
**VENTILATE**  
 To Avoid Condensation  
**When You  
 Ventilate  
 Install**

*Arrow-Line*  
**LOUVERS** and You  
 Install  
 the Best  
 !

Your customer will be better satisfied if you install Arrow-Line, and you can sell at least two on every job! Materials are rustproof, acid resisting and corrosion proof. Face frame is Masonite Presdwood, no seams, spotwelds, rivets or screws. Well screened, dipped and sprayed, neutral gray finish. Arrow-Line gives unobstructed air travel, and their construction allows for expansion.



**Standard  
 Arrow-Line  
 Louvers**

are good for the life of any standard building. Can be installed from the inside. Made in 11 sizes.

**Special  
 Arrow-Line  
 Louvers**

These louvers are especially designed for new construction. They make a neat job—no exposed nails—and are easy to install. Just remove louver, nail frame to sheathing, replace louver, and the job is done!

Get Them from Your Dealer or Jobber

If You Have a Special Louver Problem, Write Us Because  
**LOUVERS ARE OUR BUSINESS**

**A. D. HEMPHILL CO.**  
 Lake City, Minn.

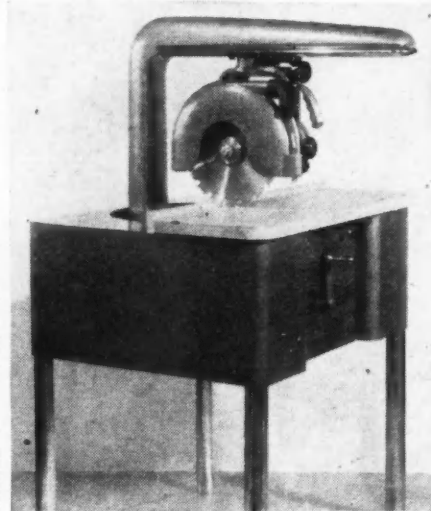
**NEW PRODUCTS—**

(Continued from page 126)

**RADIAL SAW**

**AB7725**

Simplified construction is coupled with streamlined design in the new Raydol woodworker of the Cottom Engineering Corp., Bartlett, Ill. Arm, column, and base are of one-piece aluminum, eliminating many parts and adjustments for the life of the machine. For ease in operating, the controls are located in the front. The fan-cooled motors are totally

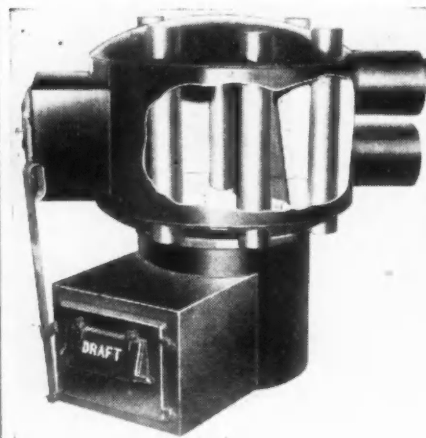


enclosed. The long and short arm operation, an outstanding feature, eliminates the need to remove the guide strip as the arm can be moved forward to increase the rip and cutoff capacity. The machine is designed for diversified use in all types of industry. It will operate on either 115 volt or 230 volt current.

**TUBERATOR FURNACE**

**AB7707**

A tuberator type furnace is the new product of Wheeling Furnace Corp., Martins Ferry, Ohio. It features large, extra heavy, vertical steel tubes built around the inside walls of the fire chamber, above and surrounding the fuel bed. These tubes act as air conductors, absorbing and transmitting the heat at



high velocity into the hot air heater duct. Acting as flues, they increase air circulation throughout the system, heating distant rooms as well as those close to the

(Continued to page 146)

*Now Add*  
**Concrete Brick**



**TO  
 YOUR  
 PROFIT PICTURE**

with **SPEEDY, LOW-COST  
 REED EQUIPMENT**

Every day finds more and more builders switching to concrete brick—a proven way to lower costs while maintaining structural strength and permanence. Reed equipment puts you into this profitable business with a minimum investment. With one VI-BRIK-CRETE and three men you can easily produce over 8,000 brick a day—selling at \$30.00 to \$35.00 per thousand for plain brick; up to \$10.00 more for colored.

**VI-BRIK-CRETE**

**28 PER MINUTE!**

NEW HOPPER  
 SPEEDS MOLDING



**\$875  
 FOR MACHINE  
 \$734.50  
 FOR PALLETS  
 8,000  
 DAILY  
 PRODUCTION**

Makes brick 7 on edge at 28 per min. 3600 vibrations produce solid, sharp-cornered super-standard brick. Sturdy construction. Thoroughly proved. Send for literature showing various size brick, specifications, production line set-up for lower costs.

**TEST YOUR MARKET at  
 LOW COST with MODEL 401**



**MAKES 3,500 BRICK  
 A DAY—yet costs  
 only \$237.50 (or \$500  
 complete with pallets).  
 LIBERAL CONVERSION ON VI-BRIK-CRETE when desired.  
 Write for full facts.**

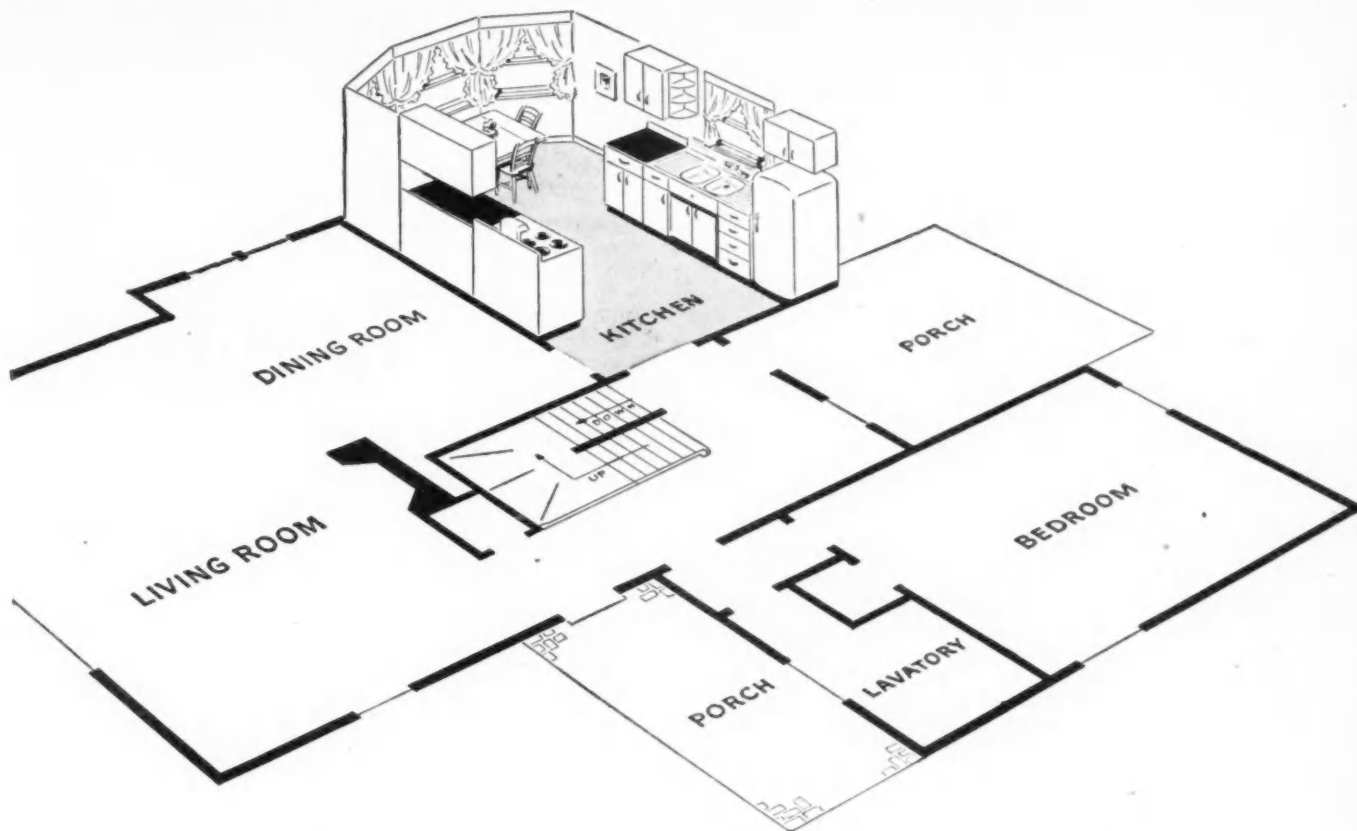
**MIXERS, CONVEYERS,  
 HOPPERS** also available—priced low and built for top results.

All prices F.O.B. Three Rivers. All orders delivered promptly. Send for detailed literature on items that interest you today.

**R. S. Reed Corporation**

710 E. HOFFMAN ST., THREE RIVERS, MICH.





## Top Quality . . . another plus of Youngstown Kitchens

Youngstown Kitchens assure that luxurious "custom" look buyers demand, while actually giving your budget a break.

Yet quality is only *one* of the features you get in Youngstown Kitchens (see panel).

Stunning Youngstown units are made to highest quality standards in gleaming white-enameled steel (sink tops are finest acid-resisting porcelain enamel).

Youngstown cabinet sinks and wall and base cabinets are *standardized* — mass produced to the highest specifications. They arrive completely finished

with hardware in place, ready for fast, trouble-free installation by any good workman in a few hours. Result: you cut time, labor and building costs.

Kitchens can be arranged according to a wide selection of Youngstown suggestions available through your dealer, or to fit any special plan of your own.

A complete Youngstown builder's service in or near your community is assured by 60 experienced Mullins' Field Men and 7500 trained Youngstown dealers throughout the U.S.A. For name of your nearest distributor or field man, just write—

**MULLINS MANUFACTURING CORPORATION**  
WARREN, OHIO

Porcelain Enameled Products, Large Pressed Metal Parts,  
Design Engineering Service

### Other big Youngstown points

- 
- Low cost
- 
- Wide selection
- 
- Easy handling
- 
- Easy installation
- 
- Modern styling
- 
- Sold everywhere



*Youngstown Kitchens*

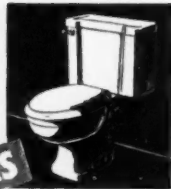
BY MULLINS

*Lifetime*

**VITREOUS CHINA**

serves best throughout the home

*for*



**BATHROOMS**



**KITCHENS**



**LAUNDRIES**

**T**HIS is an era of functional living. Naturally, then, those who buy or install plumbing fixtures look for utility as well as beauty.

For every use throughout the home, where plumbing fixtures are called upon for constant daily service, **LIFETIME VITREOUS CHINA** serves best!

Because it is easy to clean, will not chip or discolor, and is lastingly beautiful, Universal's Vitreous China plumbing ware is winning ever-increasing popularity with builders and home-owners everywhere!

**UNIVERSAL SANITARY MFG. CO.**  
New Castle, Pa.

Camden Pottery Div. Pacific Pottery Div.  
Camden, N. J. Redlands, Cal.



(Continued from page 144)  
unit. A larger than normal combustion area provided above the fire box increases the coal burning efficiency of the furnace.

**SAW FILER AB7722**

Amateur and professional woodworkers will find the Speed saw filer a handy tool. Product of the Speed Corporation, 2025 N.E. Sandy Blvd., Portland 12, Ore., the tool clamps on the saw and



with two simple adjustments accurately controls the correct pitch and angle for filing. Sturdily made, the Speed filer allows the user to take a long, full stroke of the file.

**SANDER AND GRINDER AB7716**

Easy-to-reach controls and speedy, accurate adjustments are features of the new Model 1-A Apex 16 inch disk sander and grinder put on the market by the R. E. Darling Mfg. Co., 8681 Madison Ave., South Gate, Calif. Other features are the tilt-back guard, slot free work

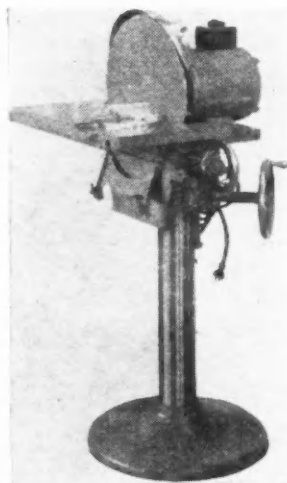


table 10 1/4 by 22 1/2 inches, and squaring bracket. Designed for use with wood, plastics and grinding metal, the unit stands waist high on a base of heavy cast iron. Standard equipment are two steel disks, miter gauge, 3/4 H.P. ball bearing motor with toggle switch and the tilt-back guard.



**THIS SOLVES HER HEAT PROBLEM**

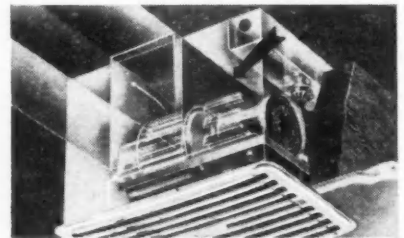
**CLIPPER SMALL ROOM VENTILATORS**

The heat this month emphasizes the need for good ventilation in the kitchen or other small rooms.

Patented Clipper Blowers are specially designed for home kitchens, bathrooms, dens... as well as for ticket booths, X-ray rooms, toilets, clinics—in fact any small room. They are mounted in the ceiling between joists and vented outside—they trap and expel unwanted air, heat and odors the instant they rise. Only an inconspicuous "dripless" ceiling grille is visible, yet motor and blower assembly are instantly removed without tools for service.

Unlike any other equipment, the Clipper Blower is a complete packaged ventilator in which the motor is entirely removed from the air stream—away from all contaminated air. This means greater efficiency, longer life and easier servicing.

Clipper Blowers are available at electrical dealers from coast to coast, or write us for literature and specifications.



Only the Clipper has this patented inner wall construction. Hot, greasy air never contacts motor or wiring. This means a cooler, longer-life motor, less service and more satisfied customers.

**TRADE-WIND MOTORFANS, INC.**  
5705 SO. MAIN ST., LOS ANGELES 37, CALIF.

# You can count on the Remington Rand Printing Calculator



## for office efficiency

**S**MART BUSINESSMEN get double value on a single investment when they install the Automatic Printing Calculator in their office. This machine performs all the functions of both adding machine and ordinary calculator—figure production is speeded by the compact 10-key keyboard, and positive proof of accuracy is provided by the printed tape. Costs? Estimates? Payrolls? Inventories? Whatever the job, this complete all purpose figuring machine will handle it more quickly, more competently. Rely on the Automatic Printing Calculator to bring your office figure work to top efficiency.

Ask your Remington Rand specialist, or write for additional information to Remington Rand Inc., Adding-Bookkeeping-Calculating Machines Division, Department ABU, 315 Fourth Avenue, New York 10, New York.

\* **THE ONLY MACHINE THAT**

- *divides automatically and prints*
- *multiplies and prints*
- *adds and subtracts and prints*

**THE PROOF IS ON THE TAPE**

**BRANCHES EVERYWHERE**

# Remington Rand

**MACHINES FOR MANAGEMENT**



## New Drafting Kit Speeds Plan Sketching

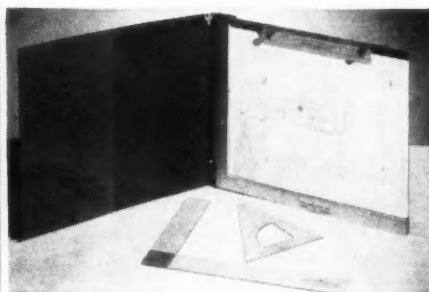
A NEW simple, compact, portable drafting kit has been developed and is being manufactured by the Sterling Draft-Kit Division of the Home Service Bureau, Chicago.

The new kit contains one "L" square and one triangle. The "L" square can be moved along either of



THE patented Sterling Draft-Kit in use.

the two graduated straight edges. The 45 x 60 x 75 degree triangle is combined with a protractor, with which it is possible to draw angles at intervals of 15 degrees. The **protrangle**, which can be used off the "L" square or the straight edges, is a transparent celluloid triangle with the center cut out in the shape of a quadrant. The arc is divided into 90 degrees forming a



THE kit consists of "L" square, triangle with protractor, and board with cover.

protractor that can be pivoted about a pencil placed at the right angle of the quadrant. To draw an angle through any given point at the right angle of the quadrant, it is pivoted to the desired angle and a line drawn along the inside edge.

Drawing paper can be set on the board and used at once because it is automatically squared up.

Known as the Sterling Draft-Kit, the new device is now available in two sizes—9 7/8 x 11 7/8 inches, which will fit the average brief case, and 13 3/8 x 18 7/8 inches—large enough so preliminary sketches can be accurate enough to become finished layouts.

**CUT SASH COSTS!**

APPROVED FOR USE ON F. H. A. CONSTRUCTION

### VIKRE SASH HOLDER

Cost conscious? Who isn't, in construction these days? Builder and buyer alike are dollar alert to keep costs down.

Vikre Sash Holders do away with hard-to-get sash weights and cords . . . Save you dollars per opening and time on the job.

Tested and proved for years, Vikre Sash Holders are easily installed . . . and once adjusted require no more attention.

Vikre Sash Holders are again available in quantity through your building supply dealer. For full details write:

**J. N. VIKRE CO.**  
3016 14th Ave. S. • Minneapolis, Minn.

More for your money  
in this

## STANLEY No. 233 LEVEL

● YOU GET MORE for your money in a Stanley No. 233 Aluminum Level—the finest level ever made. The six cat's eye glasses, for instance, are adjustable in pairs for any angle and individually for any degree of pitch to the foot. The squared edges and ends permit accurate scribing of lines around corners. The gasketed level case keeps level glasses shock-proof, dust-protected and water-proof. You get more for your money in this as in all Stanley Tools because you can do so much more with it. Stanley Tools, New Britain, Conn.

THE TOOL BOX OF THE WORLD



Trade Mark

HARDWARE · HAND TOOLS · ELECTRIC TOOLS

**FRONTIER FUN**

AT  
**LAS VEGAS**  
NEVADA

ALL THE EXCITEMENT of the Old West—against a background of modern luxury at the Last Frontier. Name-band dancing in the Ramona Room . . . carefree hours in the Gay Nineties Bar . . . 21 Club Casino.

The Early West in Modern Splendor

**HOTEL**  
**LAST FRONTIER**  
LAS VEGAS, NEVADA



## want a real estate loan fitted to YOUR needs?

**ANSWER:** Consult Prudential.

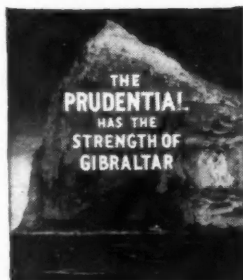
For Prudential offers a *complete* financing service: conventional, F. H. A., construction, G. I., individual building sites, subdivisions, residential, suburban, apartment, industrial, mercantile.

And Prudential makes every size of loan—from the smallest to the largest type of building project.

Prudential *convenience*, too, is something for you to consider.

There are Prudential Mortgage Loan branch offices in principal cities, representatives in most principal towns. They understand and are sympathetic to local conditions and problems. They can give you "on the ground" financing—swift, efficient closings, no red tape.

Get in touch with your nearest Prudential branch office or representative. Or write to the Mortgage Loan Department C, The Prudential Insurance Company of America, Newark 1, N. J.



**America's Foremost Home Lender**

**PRUDENTIAL**  
HOME OFFICE: NEWARK 1, N. J.

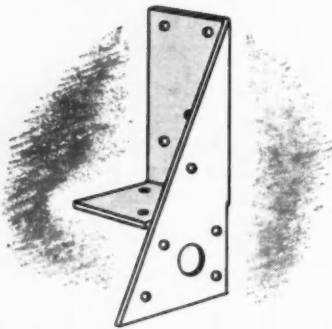
**They MUST be  
GOOD**

**when one builder  
orders  
104,000**

**Trip-L-Grip**

**FRAMING ANCHORS  
for home construction**

C. L. Eddleblute, Miami, Fla., praises this new timber connector that "fits naturally into 90% of house framing joints. Like all basically sound units, they are of the utmost simplicity."



Builders use them in wood framing connections for:

- Joists to Beams
- Beams to Posts
- Studs to Sills
- Rafters to Plate
- Plate to Studs
- Girts to Posts
- Lintels to Bucks
- Joists to Nailers
- Purlins to Trusses

*Write today* for your FREE copy of our new Trip-L-Grip booklet.

**TIMBER ENGINEERING COMPANY**

1319 18th Street, N. W., Washington 6, D. C.

Please send me free Trip-L-Grip booklet and quote prices.

Name.....

Company.....

City.....

State.....

AB

**Liquid Roof Insulation  
Applied Like Paint**

Processed from a high quality Gilsonite asphalt base and fortified with pure aluminum pigment, Gilsalume, new weather-proof insulating roof paint produced by the United Gilsonite Laboratories of Scranton, Pa., is applied easily and quickly with an ordinary bristle brush or a spray gun. Two hours after application it is dry to the touch, and in three to four hours, it is entirely dry.



ROOF paint provides low-cost insulation, year-round weatherproofing.

Put on the market in 1946, Gilsalume is the result of years of experimenting by the Gilsonite Laboratories to develop a low-cost roof coating. When the Laboratories were satisfied with the then unnamed Gilsalume, they made the happy discovery that their product was impervious to rain, sun, frost and snow, and had insulating qualities. Combined, these characteristics give added protection to the roof and reduce interior summertime temperature as much as 15 degrees.

"Sixty per cent of the heat which enters a building comes in through the roof," said Gerald B. Payne, youthful founder and newly elected president of the United Gilsonite Laboratories. "In experiments conducted by the National



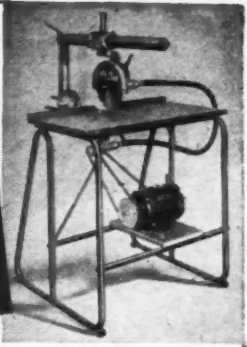
GILSALUME insulates-weatherproofs barn of A. E. Allen, Westfield, N.Y.

Bureau of Standards of the Department of Commerce Gilsalume was found to deflect seventy per cent of the sun's rays."

The Gilsonite asphalt which goes into Gilsalume is a 99.5 per cent pure bitumen, Mr. Payne stated, and the aluminum pigment, two pounds of which is present in every gallon, is flaked as fine as talcum powder.

"When Gilsalume is applied, the alu-  
(Continued to page 152)

**DO ALL  
THESE  
JOBS  
AND  
MORE  
WITH**



**FLEXSAW**

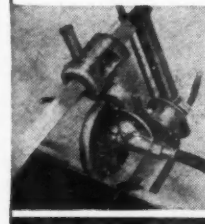
**CROSS-CUT, RIP, MITER, BEVEL,  
DADO, PLANE, TONGUE & GROOVE,  
ROUT, GRIND, DRUM & DISC SAND**

A rigid, rugged tool of extreme accuracy for both construction and cabinet work. Cuts material up to 15" wide, 3" thick, of any length.

**6 EASY HAND  
ADJUSTMENTS**

No wrenches — set it by hand for any cut.

**DISTRIBUTORS  
WANTED**



**FLEXSAW CO.  
PORT AUSTIN, MICH.**

**WRITE FOR OUR CATALOG**



**Eliminate HANDSANDING!**

**UP TO 75% SAVINGS** in time finishing or refinishing cabinets, doors, wood trim, stair treads, etc. A rugged, fast finishing sander for CURVED or flat, WET or dry work. Strate-line, back and forth action cuts no swirls, laps, stutters or gouges.

**Detroit Surfacing Machine Company**  
7458 W. Davison Detroit 4, Michigan

*1000's ARE SAVING WITH IT!  
— Write for Facts!*

**RECIPROCATING  
ELECTRIC SANDER**

**Easy**

One little house was Better.



Once upon a time there were a lot of little houses . . . cute little houses, all in a row.



Each little house had a red brick front, a nice slate roof, a comfy little porch . . . and standing in a row they looked as alike as so many peas in a pod.



And people came to look at these cute little houses . . . and they looked and looked until they came to one little house. Then they stopped and said . . . "WoW!"

WOW!

They said "WoW" because this house was different. This little house had a kitchen with class . . . a kitchen that looked ever so much better than the kitchens in the other little houses . . . because this kitchen had a Tracy sink . . . in lifetime stainless steel.



And when the people saw the beautiful new Tracy sink they quickly recognized the built-in quality of its stainless steel top. Then the entire house began to look like a better value and the people said: "This is the house we want."



# Prompt Delivery

On standard and custom built sizes to meet your design requirements



BEAUTIFUL

# Tracy

SINKS

AND COUNTER TOPS IN LIFETIME STAINLESS STEEL

. . . easier to clean . . . forever free of rust and tarnish . . . cannot crack, chip, warp or rot . . . impervious to vegetable acids, hot pans or hard usage . . . forever lovely, always new . . . modernizes any kitchen.

Send for Full Color Specification Sheet

**TRACY MANUFACTURING COMPANY**

PITTSBURGH 12, PA.

World's Largest Manufacturer of Stainless Steel Kitchen Sinks



**REZ**  
 makes  
 fine wood finishing  
 easier...  
 quicker...  
 more economical

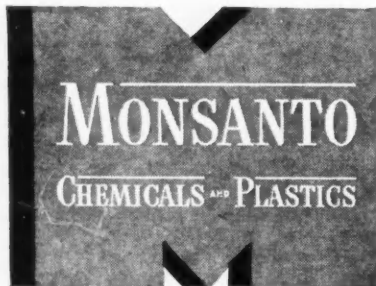
This ready-to-use amber-clear sealer and primer protects floors, doors, sash, millwork, and plywood. It is a synthetic resin, especially formulated to penetrate the wood fibers—leaves a tough resinous deposit, thereby minimizing moisture absorption, grain raise and decay. Also, it acts to assure dimensional stability.

Rez\* provides an ideal base for any type of finish—paint, stain, varnish.

**See Your Dealer or Jobber**

If Rez is new to you, or if you want current supply information on this easy-to-apply, quick-drying sealer and primer, see your dealer or jobber today. **MONSANTO CHEMICAL COMPANY**, Western Division, Seattle, Wash... District Sales Offices: Los Angeles, San Francisco, Portsmouth, Va.

\*Reg. U. S. Pat. Off.



SERVING INDUSTRY... WHICH SERVES MANKIND

(Continued from page 150)

minum 'leafs' to the surface to form a gleaming foil-like metallic shield," Mr. Payne continued. "Thus the roof coating is protected from the cooking action of the sun and insulation is achieved by stopping the sun's rays at the roof surface."

Gilsalume has been enthusiastically received in business and industry. It covers the rooftops of countless structures ranging from churches to theaters and garages to fine city homes.



ROOF of Crest Theatre, L.I., N.Y., receives last coat of Gilsalume.

It is adaptable to asphalt shingles, smooth or slate roll roofing, built-up, slag or metal roofs, non-porous masonry and outside metal work, which includes tanks, fencing and flashing.

Mr. Payne believes the new paint is unexcelled as an insulator and protective covering for every type of farm building.

"This country has two and a half billion dollars worth of farm structures," he said, "but at least one-third of them are in a deplorable state of disrepair. It is our hope, and firm belief, that Gilsalume will play an important part in the rehabilitation of these structures—everything from farm home to chicken coop—and will contribute a measure to the national economy."

Production of Gilsalume, which in 1946 was limited to 250,000 gallons, will jump to 1,000,000 gallons in 1947, Mr. Payne concluded. Popular demand plus the availability of materials makes this increase possible.

\* \* \*

**Walnut for Architectural Uses**

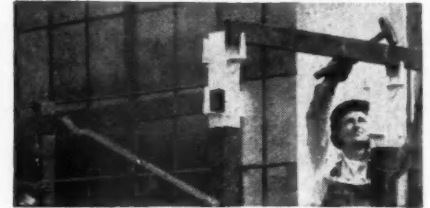
**M**ORE walnut was shipped for architectural uses in the spring of 1947 than at any period in the last seven years, Burdett Green, manager, American Walnut Manufacturers Association, told members at their annual spring meeting held at French Lick, Ind.

"Panel manufacturers and distribution plants are getting a bigger percentage of our production than they have in years," Green said. "At the same time we are getting more walnut veneer out to furniture plants, with production running 39 per cent ahead of spring 1946."

"An increase in shipments of walnut lumber of 102.4 per cent in the spring

(Continued to page 154)

**NOW!**  
 Build solid scaffolds  
 to any height with  
**KNIFE-GRIP  
 BRACKETS**



**No Nails, No Bolts . . .  
 Re-use Lumber Many Times**

Here's the new, easy, fast way to build sturdy scaffolds to any height, with decks and bays spaced the way you want them. Knife-Grip steel brackets and braces lock 2x4's and 4x4's together, give dependable support for builders, plasterers, brick masons, painters.

Write for illustrated literature  
 and name of nearest dealer

**Northwest Tube & Metal Fabricators**

2658 S. E. Tenino Street, P. O. Box 2310  
**PORTLAND 14, OREGON**



**DUO-FAST  
 HAMMER  
 TACKER**

**Apply INSULATION**

Faster and easier with the Model HT-550. Insures positive tacking of insulation, building paper and felts. One hand always free to hold material. 168 tackings with each quick loading. Gun type tacker also available for working in awkward positions.

Write today for details

**FASTENER CORPORATION**

888 Fletcher St. Chicago 14, Ill.



*Now you can*  
**MEET THE HUGE DEMAND**  
*for*  
**FINE WELDWOOD  
 HARDWOOD  
 PLYWOODS**



*For the first time since before the war, Weldwood Plywood is available in large supply . . . in a wide variety of fine cabinet hardwoods!*

And you'll find eager acceptance for Weldwood among your customers . . . both for building and remodeling.

Why? Because . . . even in the face of serious shortages . . . we've carried on a vigorous national advertising campaign to sell Weldwood to home-minded Americans. As a direct result of this advertising, almost half-a-million prospective users have written for more complete information.

We've told them all the entire Weldwood story. They know, for instance, that Weldwood has striking decorative beauty *plus* high structural

strength. They know, too, that Weldwood can be installed quickly, easily and economically . . . either for remodeling or new construction.

And your customers know this: Weldwood's first moderate cost is the last. It's guaranteed against splitting, cracking or warping for the life of the building in which it's installed.

Take advantage of this knowledge . . . and the acceptance that comes with it. Recommend and use genuine Weldwood Plywood. It's modern material of *proved* quality and demand.

You can get detailed information on the wide variety of sizes and veneers now available from your nearest USP office or representative.

**WELDWOOD Plywood**

*Weldwood Plywood and Mengel Flush Doors are products of*

**UNITED STATES PLYWOOD CORPORATION**

New York 18, N. Y.

**THE MENGEL COMPANY**

Louisville 1, Ky.

*Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S.-Mengel Plywoods, Inc. distributing units in Atlanta, Dallas, Jacksonville, Louisville, New Orleans, Houston, St. Louis. In Canada: United States Plywood of Canada, Limited, Toronto. Send inquiries to nearest point.*

Weldwood\* Hardwood Plywood  
 Douglas Fir Weldwood  
 Mengel Flush Doors  
 Douglas Fir Doors  
 Overhead Garage Doors  
 Molded Plywood  
 Armorply\* (metal-faced plywood)

Tekwood\* (paper-faced plywood)  
 Flexmetl\*  
 Weldwood Glue\* and other adhesives  
 Weldtex\* (striated plywood)  
 Decorative Micarta  
 Flexwood\*  
 Flexglass\*  
 Firzite

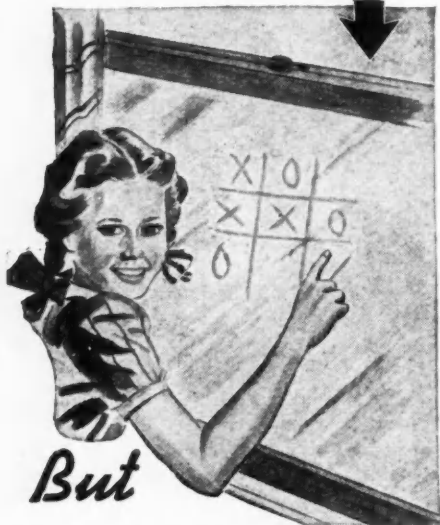
\*Reg. U.S. Pat. Off.



**Plastics and Wood  
 Welded for Good**

*Waterproof Weldwood for exterior use is bonded with phenol formaldehyde synthetic resin. Other types of water-resistant Weldwood for interior applications are manufactured with extended urea resins and other approved bonding agents.*

# VAPOR Condensation Child's Play Here



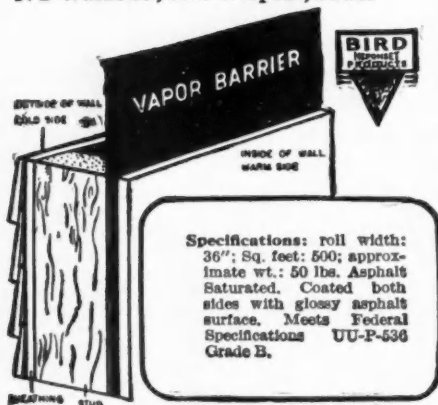
But

## A 4-way Evil Within Walls

Moisture condensation on windows may be "child's play," but it can cause these costly evils within walls:

1. Soggy, inefficient insulation
2. wall staining
3. paint peeling
4. structure rot

A sure way to lick this 4-way evil of "in-wall" condensation is with a separate vapor barrier. Standard with architects everywhere is Bird Neponset Black Vapor Barrier. Applied on the warm side of insulation, Bird Neponset Black repels vapor, keeps insulation at peak efficiency, ends the other "in-wall" evils. Low cost—only about \$20 to protect a \$10,000 building. See Sweet's Architectural file, 9b-2. For sample, write Bird & Son, inc., 172 Wash. St., East Walpole, Mass.



**BIRD NEPONSET BLACK  
VAPOR BARRIER**  
BIRD & SON inc., E. WALPOLE, MASS.  
CHICAGO NEW YORK SHREVEPORT

(Continued from page 152)

months of 1947 over the same period in 1946 has somewhat relieved last year's tight lumber situation, but demand still exceeds supply.

"Much interest in finish is being shown by architects and designers," Green reported. "The preferred finishes today are lighter than those of prewar, but darker than bleached tones. A gray cast is liked by many. The Association's headquarters has one of the finest sample rooms for finishes, together with formulae for obtaining them. This is being visited increasingly by those who wish to keep up with developments."

\* \* \*

### Lead Industries Association Holds Election

AT the annual meeting of the Lead Industries Association at the Waldorf-Astoria Hotel, New York, Robert Lindley Ziegfeld was elected acting secretary and treasurer. K. C. Brownell, executive vice president of American Smelting and Refining Co., was elected vice president, member of the Executive Committee and Board of Directors. D. N. Burruss, Jr., general manager of Metals Refining Co., was elected to the Board of Directors. All other officers and directors were re-elected.

\* \* \*

### Entries Heavy in Bryant Heater Contest

THE Bryant Heater Company reports that entries to its contest for best installation photos of any Bryant Heater product are pouring in. No entry will be accepted which is postmarked later than midnight, July 15.

The contest is open to any person connected with the specification, sale or installation of Bryant Heater products.

The first prize is \$100 in cash, with second and third prizes bringing \$50 and \$25 respectively, and twenty-four prizes of \$2 each being offered. In addition to these cash prizes, Bryant announces it will send a 3-piece, 4-color window display set valued at \$2.50 to every person submitting a Bryant product installation photograph.

Entries will be judged on the merits and interest value of the particular installations depicted, and not on the quality of the photographs.

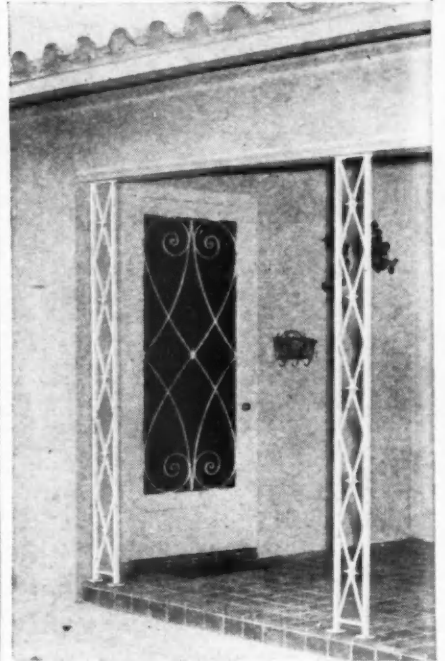
\* \* \*

### Corner Windows Popular

A NATIONWIDE survey conducted by Ponderosa Pine Woodwork to determine which special types of windows were most popular with prospective home owners revealed that the corner window, with its advantageous "two-way" view, is preferred to all others.

A product of modern architectural design, the corner window not only provides additional light and air for homes, but adds architectural and decorative interest both to the exterior and interior of the house. Many a dark and gloomy room, it is pointed out, can be given new life and interest through the addition of a corner window.

**Mr. Builder!**  
USE  
ORNAMENTAL IRON  
to create "MANSION" BEAUTY  
for SMALL HOMES



Inexpensive wrought iron flats, rather than conventional wood posts, were used to add charm and distinction to this small home. These wrought iron panels are available in flats and corners, in 2 stock sizes. Style No. 10 Screen Door Grille is installed in door.

● USE *some* ORNAMENTAL IRON on any low cost home you build, because with our low prices you gain so much for so little in distinction and appearance value. ● Coffman's original designs are outstanding and are manufactured in stock sizes for fast modern building methods. ● Better yet, whether you are a builder in a small town or big city you can buy Coffman's ornamental iron easily and quickly—from your building supply dealer like any other building material. ● With our catalogue you can plan in advance, know your costs, and save time and money. ● Only the best in ornamental iron workmanship and material.

The Builders Line Includes:

- CANOPY BRACKETS
- SCREEN DOOR GRILLES
- PORCH & BALCONY PANELS
- SILHOUETTE HOUSE NUMBERS
- RAILINGS—STOOP, PORCH & BALCONY

Manufactured by  
The R. G. COFFMAN CO., INC.  
Orlando, Florida, since 1925

**SOLD by LUMBER and  
BUILDING SUPPLY DEALERS**

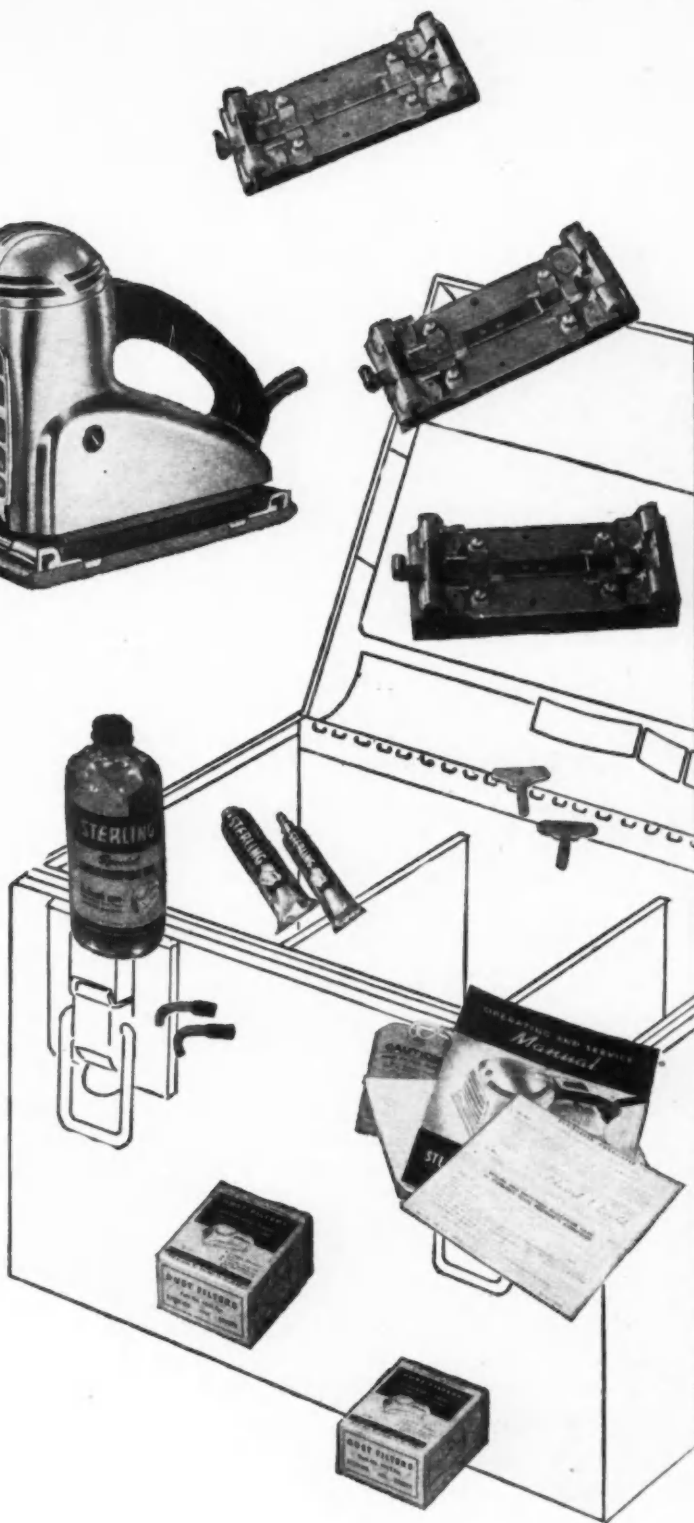
Write for catalogue of DESIGNS, SIZES &  
PRICES TO,

**WOODA B. ELLIOTT**  
Winter Park, Florida  
MANUFACTURERS' SELLING AGENT

# Complete Sander Kit



**NEW  
ABRASIVE  
SELECTOR**



**Everything You Need On the Job!**

All steel case contains Sterling Portable Electric Sander (for fast, economical finishing), extra sanding pads, oil, grease, filters—complete, everything needed on the job. New slide rule abrasive selector with answers to hundreds of finishing problems in each kit.

Case provides safe storage, saves time, and keeps all material together in one place. Descriptive folder gives all details on Sander operation and kit.

Convenient and easy to carry.

-----SEND COUPON FOR FOLDER!-----

STERLING TOOL PRODUCTS CO., 370-J EAST OHIO STREET, CHICAGO 11, ILLINOIS

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

**STERLING PORTABLE ELECTRIC SANDERS**





## Keep Exterior Walls Healthy with HYDROCIDÉ Colorless

Continual exposure to changing weather conditions is eventually as hazardous to a brick, concrete, masonry or stucco structure as to a human being. "Weatherizing" exterior walls with the proper water-repellent treatment — HYDROCIDÉ Colorless — will help keep them healthy through rain and snow, heat and cold.

HYDROCIDÉ Colorless is not affected by extremes of temperature . . . remains fluid at low temperatures and will not show separation and precipitation. It is free of resins, wax, and other non-penetrating matter.

Since HYDROCIDÉ Colorless forms a transparent film, it does not mar the original beauty and appearance of the surface. Absorption of dust, soot and stains is checked. Application is easy — by brush or spray.

Two types: HYDROCIDÉ Colorless "G" for relatively dense surfaces — HYDROCIDÉ Colorless "D" for porous light colored surfaces.

**WRITE FOR FREE FOLDER** on extending life of exterior building walls.

Address Dept. B-7

### SONNEBORN "BUILDING SAVERS"

Floor Treatments • Waxes • Points and Protective Coatings • Concrete and Mortar Admixtures • Waterproofing and Dampproofing • Caulking Compounds  
Roof Coatings

IF IT'S  
WORTH BUILDING  
IT'S  
WORTH SAVING

Building Products Division, **L. SONNEBORN SONS, INC.**, New York 16, N. Y.  
In the Southwest: Sonneborn Bros., Dallas 1, Texas

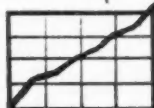
# IMPROVED DUPLEX SASH BALANCES NOW SELL FOR LESS THAN IN 1938!

**Direct Saving to Builders  
Means More Profit, Helps  
Offset Other High Costs**



#### DUPLEX BALANCE COST DOWN

In an era of greatly increased costs, it is a noteworthy fact that Duplex Flat Sash Balances actually sell today at a substantially lower price than they did in 1938. By comparison, think of the cost increases in some of the other typical items you buy.

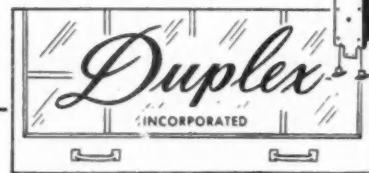


#### DUPLEX BALANCE QUALITY UP

Although they now cost less, Duplex Flat Sash Balances are worth more than they were nine years ago, in at least three important respects:

1. The plaster-tight outer case is now made of rust-proof plated stock, whereas it formerly was painted.
2. The high test steel cables now used are far superior to those formerly employed. In fact, they are 20 times stronger than required.
3. Duplex Sash Balances are now guaranteed against mechanical defects for the life of the building. (The FIRST sash balance so guaranteed.)

It will pay you to standardize on Duplex Flat Sash Balances from here on in, because it is a continuing policy of this company to produce the best sash balance on the market at the lowest possible price.



**DUPLEX, INC.**, 628 N. La Peer Dr.  
Los Angeles 46, Calif.

Please send information on Duplex Flat Sash Balances

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Type of Business \_\_\_\_\_

To Give Your New Homes  
That Extra Appeal, Choose  
**CHRYSLER AIRTEMP**  
AUTOMATIC HOME HEATING

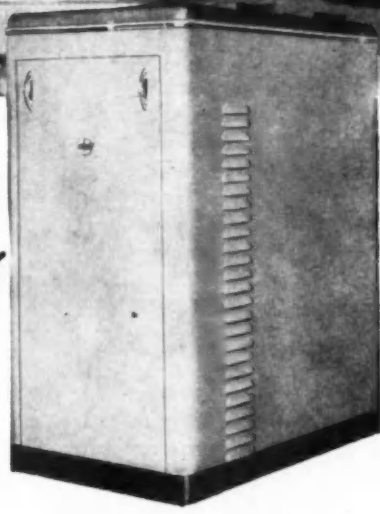
WINTER AIR CONDITIONERS  
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CONDITIONERS • FURNACES  
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CHRYSLER Airtemp products, backed by Chrysler Corporation engineering and mass production skill, are known for fine quality, dependability. National advertising has given them wide acceptance. This name on the heating equipment gives your new houses greater value. You can choose the heating you prefer—warm air, steam, hot water, vapor (gas, oil or coal fired). For details, write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada —Therm-O-Rite Products, Ltd., Toronto.



**A BETTER TYPE OF HEAT**  
Circulates filtered, properly moistened,  
warm air to every room—automatically!



*Automatically Yours*

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AMERICA'S MOST COMPLETE LINE  
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HEATING • AIR CONDITIONING • COMMERCIAL REFRIGERATION

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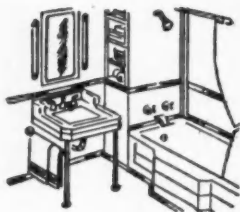
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**E**ACH month, through Better Homes & Gardens, American Home and other magazines, more and more homemakers are learning about the advantages of using Prestile . . . the quality tileboard with its plastic beauty baked in. While we are striving to meet overwhelming demand, Prestile continues to advertise as an aid to dealers, contractors and architects.

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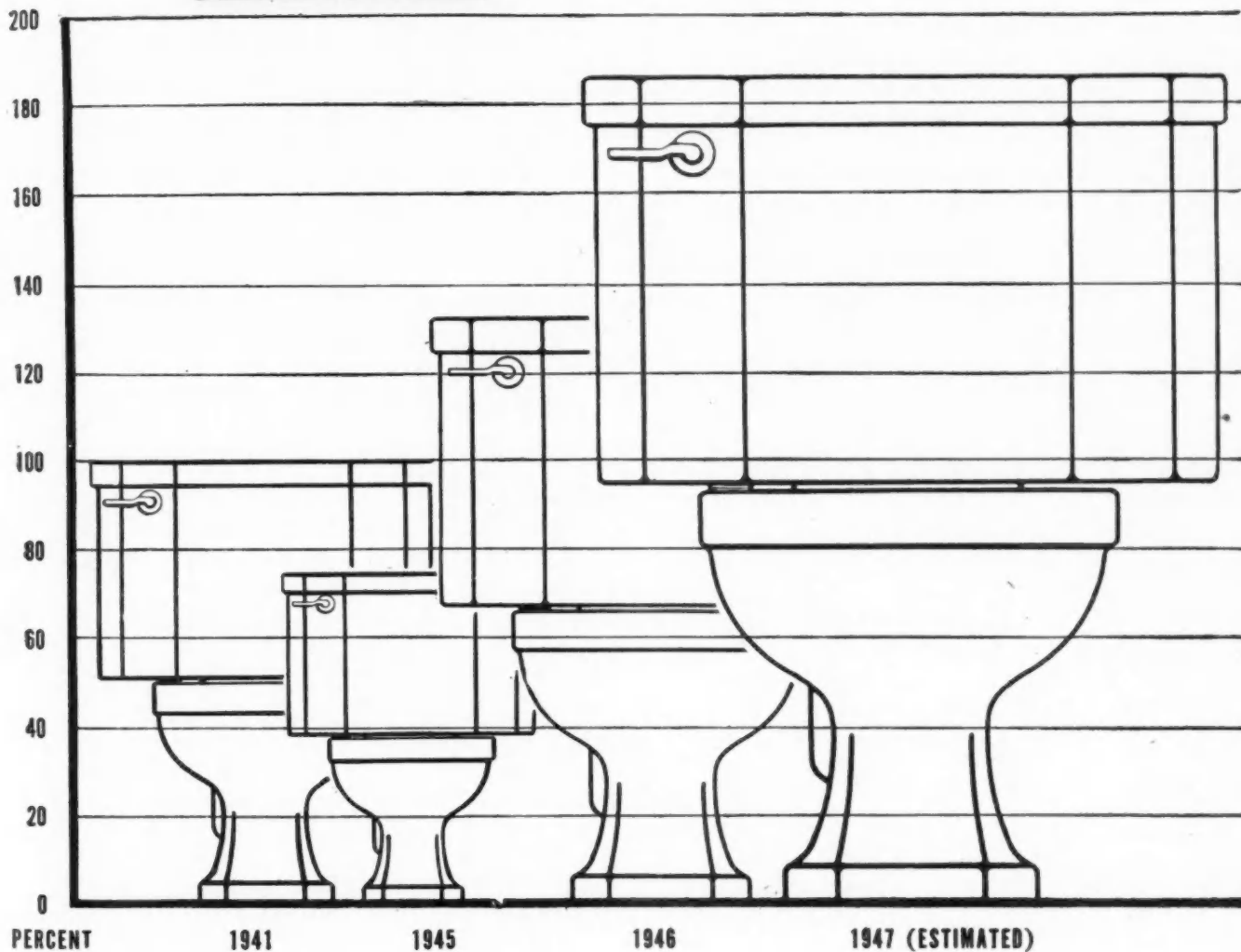
**PRESTILE**

*"Its Plastic Beauty is Baked In"*

Production up — and it's



# STILL GROWING



Here's enough  
"CAMELS" for a  
WHALE of a lot  
of houses.



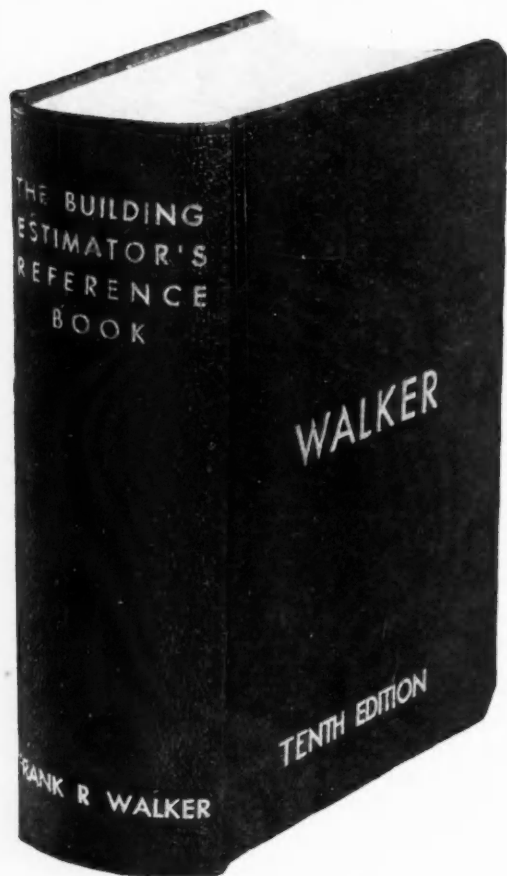
We know it's still hard to get enough of the right plumbing fixtures. But here are the facts—in a graph showing what we've been doing to meet the huge demands for just one—the Camel *Water-Saver*\* Closet. And as a reward for waiting, you and your customers are getting a better-than-ever Camel: a fine vitreous china fixture, free-standing, adaptable to restricted areas, quiet in action, built for dependable performance. W. A. Case & Son Mfg. Co., Buffalo 3, N. Y. Founded 1853.

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By Frank R. Walker



1700 pages, 1000 illus., 1000 tables,  
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Excavating, Foundation Work, Reinforced Concrete, Framing, Millwork, Lathing and Plastering, Painting and Decorating, Glass and Glazing, Structural Steel, Masonry, Sheet Metal, Marble and Tile, Heating and Air Conditioning—and many other building subjects.

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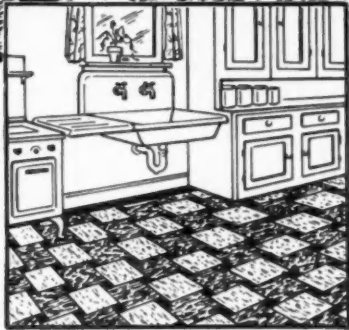
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The Vest Pocket Estimator

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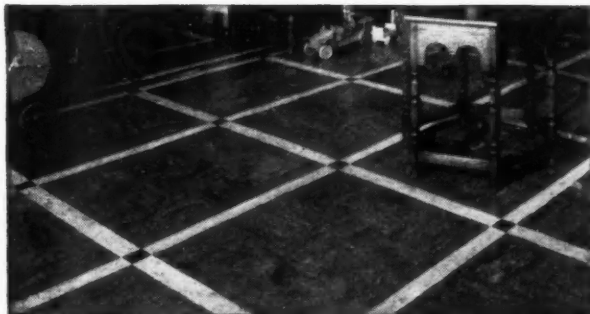


... AND AN  
UNEQUALLED  
PAST



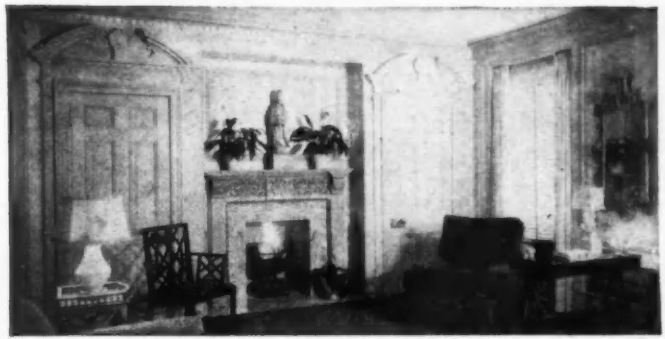
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**EYE CATCHING, SALES MAKING DISPLAY BOARDS**  
Four different display boards are available that feature National's Cabinet Hardware Line. Put one of these to work for you on your counter or in your store window. These beautifully designed and finished Display Boards possess a power of reminder that helps sell Cabinet Hardware on sight.



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100% CONCEALED  
**SASH BALANCE**

Hidalift is the only 100% concealed vertical sash balance. Nothing to mar the beauty of well-designed windows. Other features of importance to architects, builders and all home owners include:

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Hidalift is the only sash balance with a self-centering guide bushing. This device keeps the balance constantly centered — maintains perfect balance and prevents jamming. It also eliminates the use of templates in installation.

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### LESS EXPENSIVE

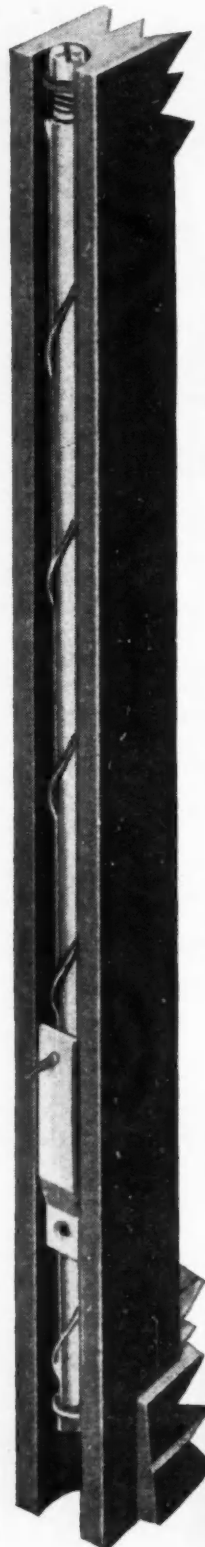
Hidalift Sash Balances are easier to install than conventional sash weights . . . cut labor and maintenance costs.

### NOISELESS

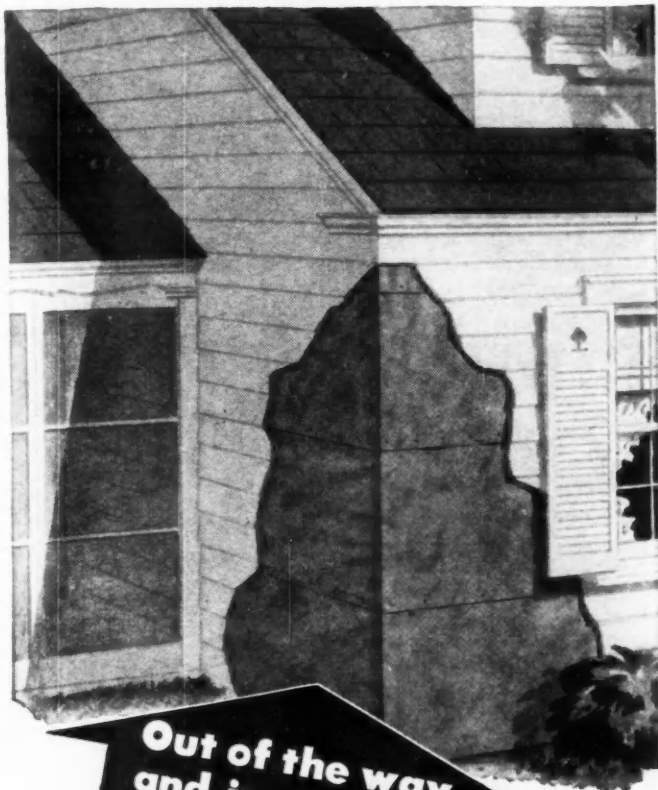
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*Write now for completely descriptive folder and installation chart together with the profitable details.*

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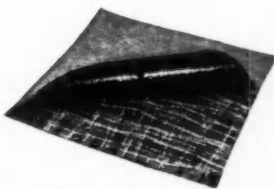
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**Out of the way and in to stay!**

**Build life-long quality, life-long beauty with life-long Sisalkraft protection!**

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\*No batten strips are required because of the amazing strength of Sisalkraft.



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If completion of your jobs is being slowed down by scarce materials—get in touch with your Tile-Tex Asphalt Tile Contractor. He is equipped to offer fast, expert installation of a flooring material that's perfect for new home, store, office—and many other types of construction.

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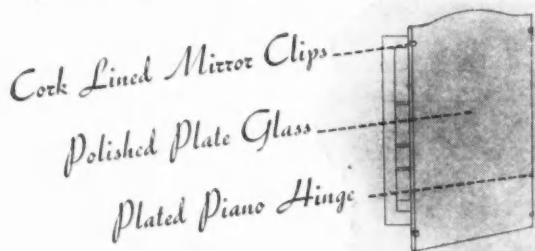
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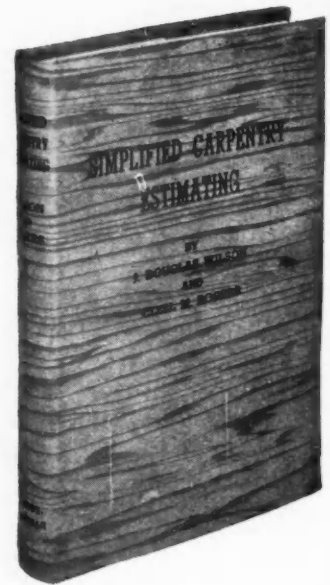


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Third  
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### Chapter Headings

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1947. 3rd. 288 pages, 123 illus., 60 tables, 5 x 7 1/2, cloth, \$3.00

Book Department

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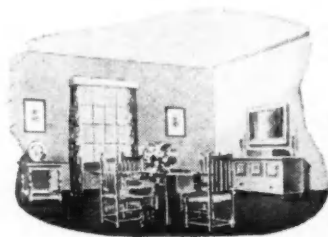


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**COMETS** cut quicker

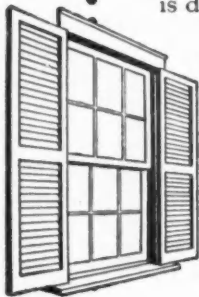
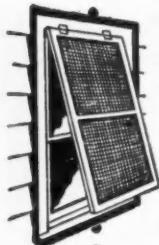
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were  
harnessed



to provide these  
**NDMA STANDARDS**

No pains were spared by NDMA in developing reliable tests of toxic preservatives for millwork such as doors, screens, and windows. Hungry fungi—more virulent than are ever likely to be encountered under actual service conditions—were pitted against treated and untreated wood. Wood samples were buried in swamps—subjected unpainted to violent weather conditions...

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✓ **STRONGER—BY TEST**

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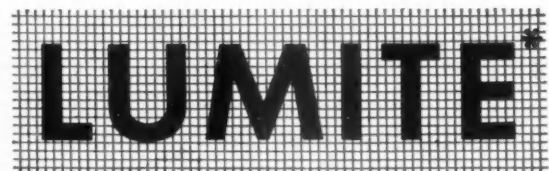
✓ **WILL NOT STAIN OR RUST**

Guaranteed never to "bleed" or "run"—never to stain sills or sidewalls. Absolutely cannot rust or corrode in any weather or climate.

✓ **NEVER NEEDS PAINTING**

Requires no painting or protective coating of any kind. Will not "rust out"—will never change color. Keeps its "sheen"; stays clean.

**SPECIFY LUMITE SCREENING FOR YOUR CLIENTS**  
Sold through Hardware and Lumber Dealers and Screen Manufacturers



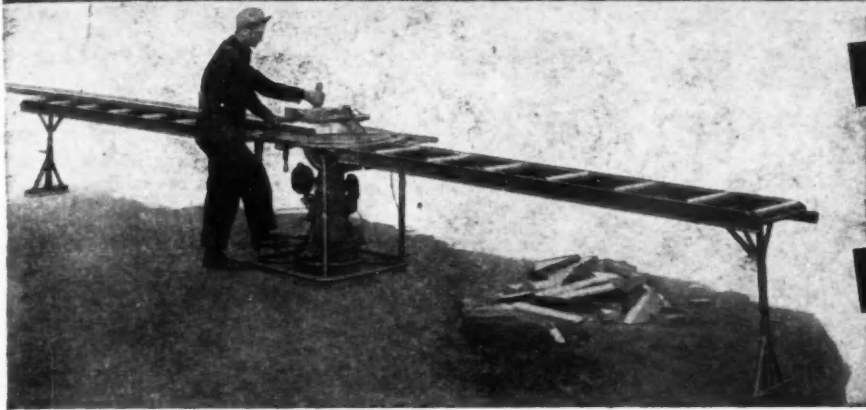
**QUALITY INSECT SCREEN CLOTH**

\*Registered trade-mark

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# Savings Soon Pay for This Saw



## TABLE ROTATES

The table and saw blade instantly rotate to the desired cutting angle. Turning the saw table instead of the lumber means faster cutting.

## IS PORTABLE

Here is a saw that is truly portable. Weighing only 340 pounds, two men can easily lift it off a truck. In a few minutes it is ready for operation anywhere.

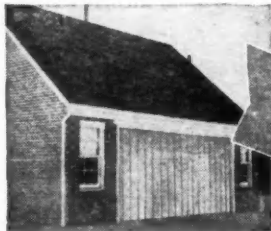
## IT'S ADAPTABLE

The Nordberg-Buday is easily adapted to cross-cutting, ripping, mitering, tenoning, bevel ripping and compound mitering. Just rotate the table and you're set.

The speed and labor saving advantages of the Nordberg-Buday soon returns the cost of this saw. In addition to faster cutting at lower cost, this saw also has the advantages of portability, versatility, and capacity. It will make all cuts, rip 4" deep and 40" wide or cross-cut a 3" x 12". A demonstration of the Nordberg-Buday will prove its advantages. Write for Bulletin 132.

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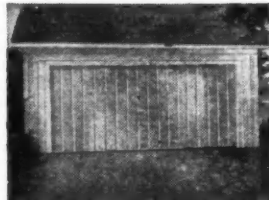
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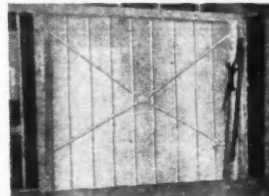
FOR ANY TYPE ROOF



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DOUBLE IS 1-PC CONSTRUCTION



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THE BETTER DOOR YOU HAVE WAITED FOR

*Arrow-Craft*

## ALL-STEEL, WELDED CONSTRUCTION

### NOW AVAILABLE FOR NATIONAL DISTRIBUTION

Sets a new standard to judge all garage doors by. Arrow-Craft doors have trim beauty that "makes" the garage, backed up by rigid truss construction. The mechanism mounts flush on the jamb for both high and low ceilings making them practical for any type of garage and providing for finger lift operation. Distortion and twisting resulting from wind whip are avoided because they recede into the ceiling where they are protected. Thousands of new and replacement installations prove freedom from service problems and high owner satisfaction.

- ★ Rigid, solid, one piece construction in both single and double doors.
- ★ Compact mechanism—no interference with service door.
- ★ Steel panels resist denting. Furnished primed for painting.
- ★ Available in wide range of standard sizes for single and double.

TO: **ARROW-CRAFT MACHINE CO.**

9071 STOEPEL AVE., DETROIT 4, MICH.

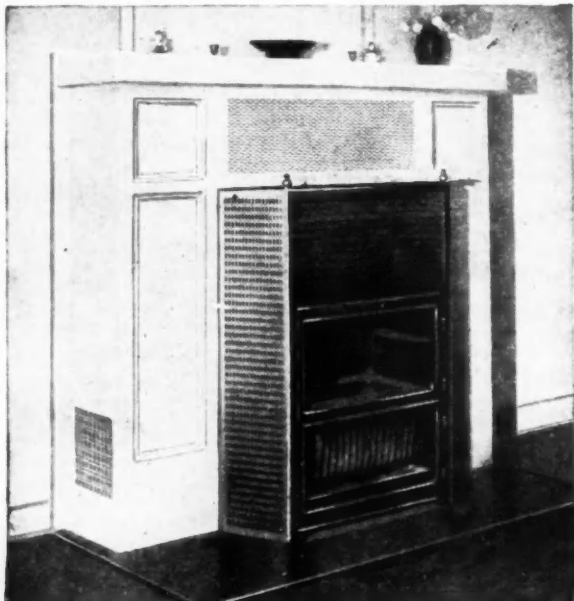
We are interested in a distributorship on the Arrow-Craft door. Please forward details.

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For Remodeling and New Construction

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Means Extra Profits for YOU



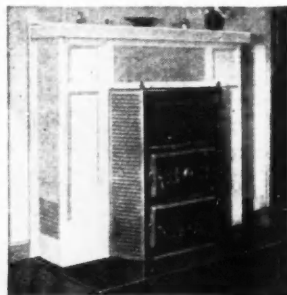
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For winter comfort, attach the doors to Firedaire. The fireplace becomes a furnace, capable of heating from 3 to 7 rooms on 1 or 2 floors. Burns any fuel. Holds fire overnight.



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Mrs. D. MacDuncan

who wants the best in window hardware . . . IF it fits her budget



134,445,000 modern-minded people share her interest

Grand Rapids Invisible Sash Balances are sold monthly to the readers of these magazines . . . the bulk of the home-building market.



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Of course she can afford them! They go in quick and easy . . . just three screws per balance . . . save hours of high-priced labor. Laboratory tests point to perfect lifetime performance . . . proved in thousands of homes. No tapes, no cables, no exposed tubes, no corrosion. The one practical installation for modern narrow trim. A few standard sizes fit 95% of all residential requirements . . . same size balance fits upper and lower sash.

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Grand Rapids, Michigan

Quality Leaders in Sash Hardware for 50 Years



### Grand Rapids Sash Pulleys

◀ No. 103 face plate, cone bearing type and Nos. 175, 109, 110 sawtooth drive type sash pulleys cover 95% of all sash pulley requirements. ▶







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We need more homes, for more people, more than ever before—and we salute all who put their shoulders to the wheel, to devise the ways and means to help this nation build faster than ever.

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Lime plaster is one of those materials that have served us for centuries. Yet no better material for finishing walls and ceilings has so far been devised. Its monolithic character is without equal. It is durable and fire-resistant. So don't "cut corners" the wrong way. Only a first class plastering job takes care of walls and ceilings, and of all the corners the right way.

When it comes to a choice of finishing lime consider the brands shown here, long known for consistent quality, always uniform, scientifically processed from the world's purest dolomitic limestone. Look for the red zig-zag stripes, your guarantee of quality.

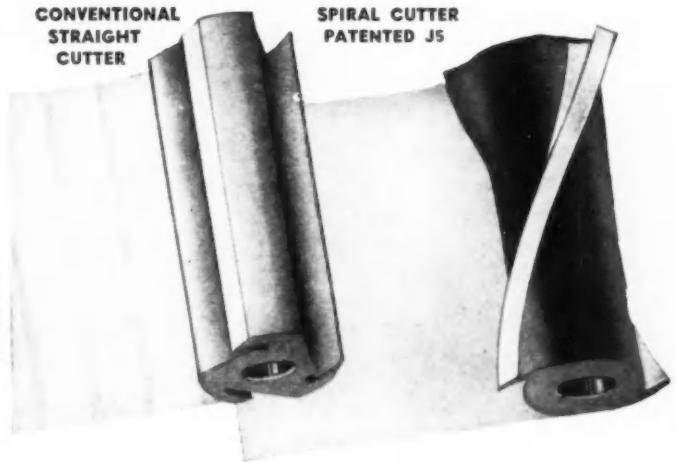
The Ohio Hydrate & Supply Co., Woodville, Ohio



# COMPARE THE FINISH

CONVENTIONAL  
STRAIGHT  
CUTTER

SPIRAL CUTTER  
PATENTED J5



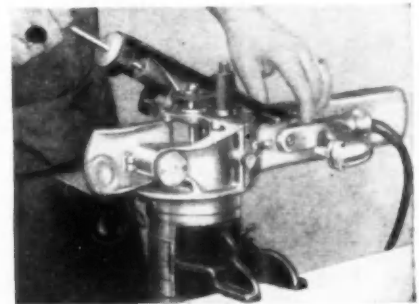
## The STANLEY-CARTER J-5 POWER PLANE

cuts Smoother and Faster  
with the Exclusive Spiral Cutter

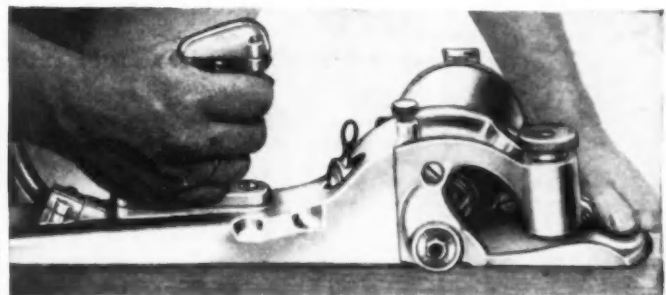
**N**O MATTER HOW FAST you "hog off" the wood with a Stanley-Carter J5 Power Plane, you leave a smooth surface that needs no sanding. The patented spiral cutter shears off the wood at 18,000 R.P.M. It has to be smooth.

With a J5, you can handle door, sash, screen and similar work 3 to 5 times faster. Develops a full 1 H.P.—weighs only 16 lbs.—planes surfaces up to 2½" wide, depth to 3/16"—takes straight or bevel cuts to 45°.

Write for Catalog, Stanley Electric Tools, Stanley-Carter Sales Dept., 534 Myrtle St., New Britain, Conn.



**SHARPENS ITS OWN CUTTER**—Just set it up in the Bench Bracket and use the simple Grinding Attachment.



# STANLEY

Trade Mark

HARDWARE · HAND TOOLS · ELECTRIC TOOLS

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Are Again Available!*

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Be prepared for the progress ahead by sending us your order today.

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Your Name .....

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City ..... Postal Zone ..... State .....

NAME OF YOUR FIRM .....

Please indicate your position in the above named firm:

If Owner of Business, please state .....

If not, give Title or Position .....

### PLEASE NOTE—

Kindly check your principal activity

#### Builders and Contractors:

- Builders and Contractors specializing in Residential or Light Commercial or Light Industrial Building.
- Contractors specializing in Heavy Building Construction.
- Builders and Contractors engaged in both Residential or Light Commercial or Light Industrial Building and Heavy Building Construction, *not specializing in either.*
- Contractors specializing in all types of Heavy Construction *other than Buildings.*
- General Contractors engaged in Heavy Construction of both Buildings and other than Buildings, *not specializing in either.*
- Special Trade Contractors, contracting for only such parts of Building Construction as carpentry, masonry, plumbing, roofing, heating, ventilating, electrical, painting, concreting and excavating.

#### Distributors:

- Retail Dealers—lumber, building materials and installed equipment.
- Wholesalers, Jobbers and Manufacturers' Agents of lumber, building materials and installed equipment.
- Distributors of Construction Equipment.

If none of the foregoing applies, please advise the type of business with which you are affiliated:

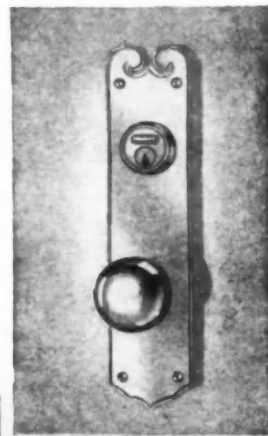
Type of Business .....



A MAN'S HOME IS HIS CASTLE..."

And There's an Appropriate BARROWS for It

Whether a house is a "pre-fab" to house the hopes of an ex-G. I. and his bride, or a triple-bath apartment on Park Avenue—the designer, builder (and owner's lady too) can bank on Barrows Builders Hardware, each to satisfy a personal viewpoint . . . be it the grace and charm of the Barrows line, its ease of installation and operation, or its long life. BARROWS is the Builders Hardware for a man's "castle."



Bank on

BARROWS

NORTH CHICAGO

ILLINOIS



How Can I Save Money Building My New Home?

Use Wheeler-Osgood

Tru-sized

Reg. U.S. Pat. Off.

JAMBS and DOORS



Yes, Tru-sized Jambs and Doors are one of the greatest time-saving, money-saving combinations ever developed in the building industry!

Tru-sized Jambs can be installed seven

times faster than ordinary door jambs, and can be adjusted at any time with the simple turn of a screwdriver. Find out about their advantages to you. Write Dept. 4A for free literature.



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Write for Stock List—  
your guide to over 10,000  
different kinds, shapes  
and sizes of steel for  
quick shipment from ten  
plants.

Joseph T. Ryerson & Son, Inc., Plants at: New York, Boston, Philadelphia,  
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Universal  
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TRANSIT



*with coated optics*

Rugged — accurate — highly dependable, the Universal Level-Transit offers builders an all-purpose instrument of unexcelled practicality and versatility. Quickly converted from a precision level to a highly accurate transit in two easy motions.

Patented ball-bearing race assures perfect adjustment under severest conditions. Telescope 12" long, 25 power, horizontal circle 4½" with Verniers to 5 minutes. Write today for full information — also free booklet, "How To Lay Out Building Lots."

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317 West Court Street,  
Milwaukee 12, Wisconsin

Manufacturers of instruments  
for engineers, surveyors and builders.

## Ponderosa Pine Announces Change in Personnel

**R**OBERT M. BODKIN, general manager of Ponderosa Pine Woodwork since the formation of that organization in 1941, resigned on June 30 to become manager of the western purchasing offices of Dyke Bros., and the Cole Manufacturing Co. The companies, whose main offices are located in Fort Smith, Ark., and Memphis, Tenn., respectively, are manufacturers and wholesalers of building materials, and have branches in 16 cities throughout the South and Southwest. Mr. Bodkin makes his new headquarters in Portland, Ore. He leaves behind him an outstanding record which has seen Ponderosa Pine Woodwork grow



ROBERT M. BODKIN



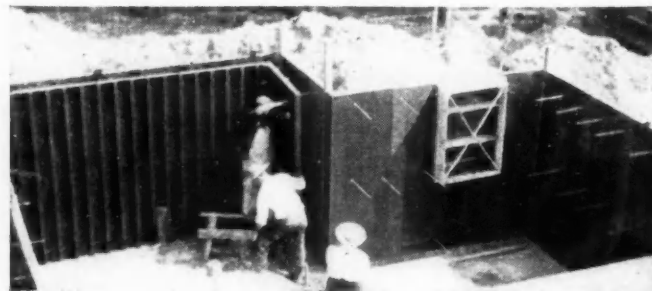
E. W. RUDDICK

until it now includes a large membership of pine producers and millwork manufacturers.

Mr. Bodkin's successor is E. W. Ruddick, who has been connected with lumber and lumber products for the past 12 years. He brings to his new position an excellent back-

*(Continued to page 174)*

## LABOR-SAVING CONCRETE FORMS



## Twice as FAST—HALF the Cost

### New Process of Concrete Construction

Cut form labor costs 50% or more—Reduce material costs way below wood with Atlas SPEED System of forming for concrete. STEEL Forms can be set, stripped and moved in half the time . . . Go together with wedge clips — Only a hammer is needed. New technique in form construction—layout, job study, supervision by specialists, and Atlas SPEED Forms for your particular projects.



Pats. pending.

Available Now For Rent or Sale  
Irvington Form and Tank Corp.  
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## ATLAS LABOR-SAVING SPEED FORMS

# STEEL CASEMENT WINDOWS

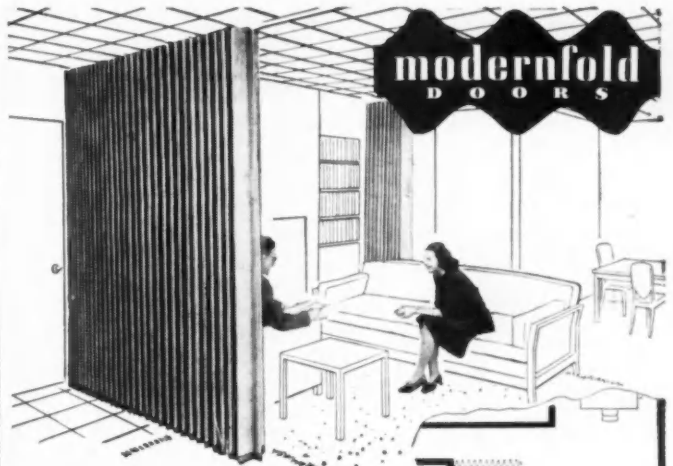
Immediate Deliveries

CROFT offers 30 years of experience in new production methods. This background enables us to offer IMMEDIATE SHIPMENTS.

See our catalog in Sweet's or write today for your copy.



**CROFT STEEL PRODUCTS, Inc.**  
370 Lexington Ave., New York 17, N. Y.



## Tailor your rooms to fit your needs!

• Beautiful Modernfold Doors *make space flexible!* For instance, a large room can do double-duty . . . by dividing it into two or more smaller rooms with this amazing accordion-type door. With the doors closed, Modernfold assures small room privacy. But if the entire area is required, merely fold the doors to the wall. Specify these fabric-covered, metal-framed closures . . . for living rooms, dining rooms, bedrooms, kitchens, closets. They are available in approximately 30 to 45 days after receipt of order at factory. Write for full details.

Dealers in all principal cities in the United States and many foreign countries

**NEW CASTLE PRODUCTS, NEW CASTLE, IND.**

# RILCO BUILDINGS

*Look Better - Are Stronger*

● Rilco glued laminated trusses, arches and tied rafters are widely used in airplane hangars, warehouses, stores, garages, factories and dairy barns.

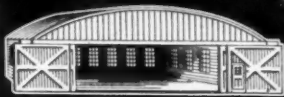
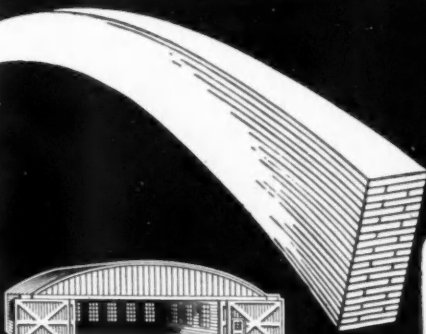
Wherever wide post-free spans and economical construction are desired, Rilco framing offers unusual value.

Rilco glued laminated framing is four times stronger than arches or rafters that are nailed. Rilco framing is engineered for great load bearing strength and wind resistance.

It's no wonder that more and more new commercial structures are being built the Rilco way. Rilco framing makes buildings that are modern and attractive in appearance—strong—easy to erect. There's a Rilco Rafter for *every type of building.*

**RILCO LAMINATED PRODUCTS, Inc.**  
A WEYERHAEUSER INSTITUTION

1667 FIRST NATIONAL BANK BUILDING • ST. PAUL 1, MINNESOTA



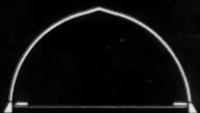
BOWSTRING TRUSS



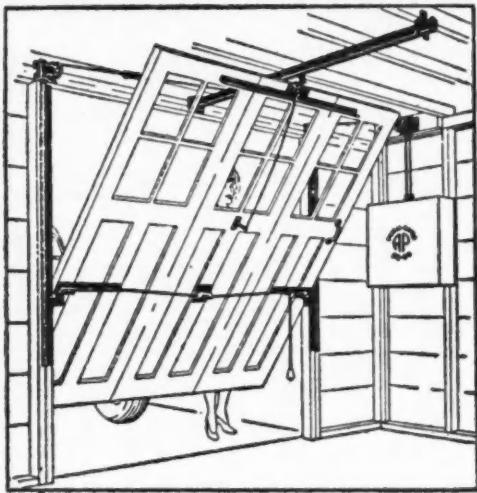
TIED RAFTER Type 70



UTILITY RAFTER Type 54



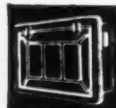
# ALLITH



## 50-50 PUSH-OVER GARAGE DOOR HARDWARE

This fine Hardware set is the answer to your customers' needs for an easily installed perfected overhead door action.

**ALLITH-PROUTY, INC.**  
DANVILLE, ILLINOIS



## Majestic

### FORMED STEEL DAMPERS

Rugged and durable — for greater fireplace efficiency

Simplify fireplace building and modernizing with Majestic Formed Steel Dampers. They maintain proper ratio of throat area to fireplace opening; assure correct height of throat and other dimensions. Tight-closing valve operates easily with Majestic patented poker control. Withstand years of exposure to rust, smoke, soot, and heat, without impairment. Install these Majestic Dampers for safe draft control and lasting, smoke-free performance. Write for details.



**The Majestic Company**  
834 Erie Street, Huntington, Indiana  
Nationally Known and Advertised for 40 Years

**Majestic**  
Building Necessities

(Continued from page 172)

ground of executive ability. Mr. Ruddick began his business career in 1935 with the Wright Lumber Co. of New York City. Starting as a lumber handler, tallyman and millhand, he became secretary and a director of the company before leaving to join the Air Production Board in Washington, D.C., as an industrial analyst. In August 1945, Mr. Ruddick became regional sales promotional manager with TWA-Transworld Airlines, with offices in Chicago. In this organization he was responsible for cooperative advertising, promotions and displays for eleven midwest district offices.

\* \* \*

### Outlook Good for Clay Pipe Production

WHILE 1946 production of clay pipe for sanitary sewers and for drainage reached the highest point since 1942, the industry estimates that this year's production will exceed 1946 by 15 to 25 per cent, the members of the National Clay Pipe Manufacturers, Inc., were informed.

New directors and officers elected at the meeting were: President: G. L. Avery, president of Lehigh Sewer Pipe & Tile Co., of Fort Dodge, Iowa; directors, each representing various production sections: W. E. Robinson, Akron, and E. K. Sheffield, Logan, Ohio; G. Lawrence Avery, Sioux City, Iowa; Hans Wilhelmsen, Kansas City, Mo.; C. B. Beasley, Birmingham, Ala.; John Palmer, Clearfield, Ky.; Roy Lacy, Los Angeles, and George Mays, Niles, Calif.

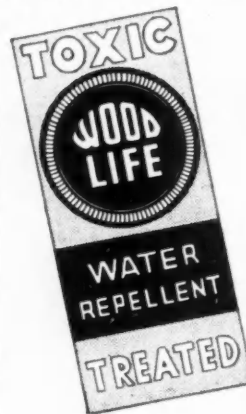
\* \* \*

### Prefabricators' Directory

A DIRECTORY of prefabricating lumber companies has been issued by the Timber Engineering Company for the benefit of specifying buyers.

The listing gives the names and addresses of over seventy-six firms together with the type of structure they fabricate. This covers all types and spans of roof trusses and structural framing, bridges, towers, power line poles and cross arms, glued laminated construction and housing.

A copy may be obtained by writing to the Timber Engineering Co., 1319 18th St. N. W., Washington 6, D. C.



## PROTECTS Sub-Flooring



### Eliminates Many Costly Complaints

Freedom from warping (the result of swelling and shrinking—"come and go") means freedom from squeaky floors. It is the enduring water repellency of WOODLIFE that does it. Also the owner has no worries about termites, rot, carpenter ants, etc. WOODLIFE—The Original Toxic Water Repellent adds immeasurably to life, serviceability and wood beauty. Ask your dealer.

## Protection Products Mfg. Co.

Mfrs. of CHEMICAL PRESERVATIVES Since 1921  
Research Laboratory and Plant KALAMAZOO, MICH.



**FREE**

**All You Should Know About  
HOW TO MAKE GOOD LAWNS**

*Scott's*  
**GRASS SEED AND  
TURF BUILDER  
MAKE AMERICA'S  
FINEST LAWNS**

Builders and contractors, send today for this FREE volume of lawn building information. It will help you make lawns that add extra value to your residential or industrial projects. Since fall is the best seeding time for new lawns, be sure to ask for estimates on using Scotts Seed and Turf Builder. Beautiful lawns in every community attest to the superiority of Scott lawn products.

**O M Scott & SONS COMPANY**  
17 Fourth St., Marysville, Ohio

TRADE MARK  
**ECLIPSE**  
**TILTING  
DRUM  
CONCRETE  
MIXER**



*A Full Half Bagger*  
**AN Improved LOW-PRICED MIXER**

A handy, profitable 3½ cu. ft. machine that will handle all classes of work done by the average contractor. The Improved Eclipse 3½ Mixer embodies all the latest refinements in design and is guaranteed as to materials and workmanship. Engine runs in oil and is controlled by throttling governor to insure constant speed and steady power. The engine is completely enclosed in a steel housing. Main bearings are bronze, readily accessible. Sturdily built and easy to move.

Quick uniform mixing — easy to load — visible mixing action — handles coarse or fine aggregate — moves anywhere.

**WRITE OR WIRE FOR DETAILS**

MANUFACTURED BY  
**GEO. C. CHRISTOPHER & SON IRON WORKS**  
FOR FORTY YEARS THE WORLD'S BEST IN CONCRETE MACHINES  
P. O. BOX 610 WICHITA, KANSAS

... and *Certified\**  
**INSL-COTTON**  
*is*  
**BUG-PROOF,**  
*too!*



**INSL-COTTON** is as clean and odorless as it is efficient. All foreign matter that might attract insects is removed in processing and the cotton is borated and treated to make it distasteful to rats, mice, insects—to all vermin. And this processing also reduces the possibility of mildewing and adds greatly to the long life of the cotton.

With a "K" value of 0.24, Insl-Cotton is the most efficient type home insulation available. It is manufactured under government supervision, and is certified to be completely flame-proof and fire-resistant. It's as lightweight as a cotton blanket—easy to handle and easy to install, it contains no irritants to affect skin or eyes—and it's tops in deadening sound.

It isn't surprising that Insl-Cotton is preferred by architects, contractors, builders, workmen and consumers—because it's the perfect home insulation!

DEALERS . . . DISTRIBUTORS—Some territories still open for competitively priced Insl-Cotton. Write today for details.



**INSL-COTTON DIVISION**  
**TAYLOR Bedding Mfg. Co.**  
*The Originators of Flame-Proof,  
Fire-Retarding Cotton Insulation* TAYLOR, TEXAS

\* *Certified*

No other insulation except flame-proof, fire-retarding cotton insulation made under Federal supervision can make this claim. The Government tests and certifies Insl-Cotton Insulation.

**MAIL THIS ORDER COUPON TODAY**

INSL-COTTON DIVISION  
Taylor Bedding Mfg. Co., Taylor, Texas  
Gentlemen:  
Please send specifications and full information on INSL-COTTON.

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

Check Here:  Distributorship  Architect  Contractor

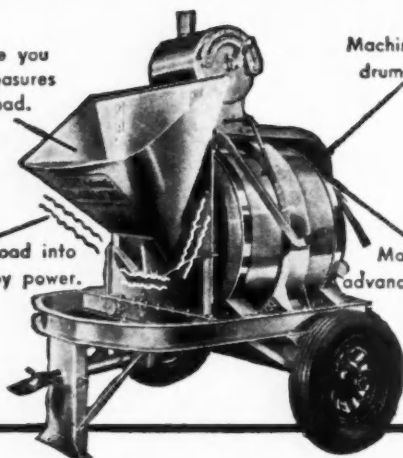
**Mix up to 50 yards a day with  
JAEGER 3 1/2S "AUTO LOADER"**

Loads while you  
mix and measures  
as you load.

Machined steel  
drum tracks.

SHAKES load into  
the drum by power.

Many other  
advanced features.



**Automatic Shaker-Batcher  
loads QUICK-AS-A-FLASH**

Loads and measures while you mix, then  
shakes material into drum by power.  
Fast as a power loader. Mixes more  
batches a day. Ask today for our latest  
Catalog M-5.



3 1/2S Tilter; Non-Tilts  
up to 565 size

**THE JAEGER MACHINE CO.** Main Office and Factory  
Columbus, Ohio

REGIONAL OFFICES: 8 E. 48th St. New York 17, N. Y. 226 N. LaSalle St. Chicago 1, Ill. 235-38 Martin Bldg. Birmingham 1, Ala.

**PUMPS · COMPRESSORS · HOISTS · LOADERS · PAVING EQPT.**

**Education—Opportunities for Young Men  
Entering the Building Field—**

(Continued from page 91)

related training required by law, and relieving the employer of his responsibility in this connection. The legislative paths concerning the wage ceilings which virtually stopped this type of veteran training program a year ago have been followed. The indications are that these ceilings will be raised by the present Congress so that job training will again become a real factor in industrial training. A series of job outlines on the various jobs which are standard in retail lumber and building material establishments in preparation for the anticipated increase in demand for job training have been prepared.

Thus it will be seen that the job of training tomorrow's dealer has taken on five aspects:

- 1) Four year college courses.
- 2) 30-day survey and brush up courses.
- 3) Home study and correspondence courses.
- 4) Group study courses.
- 5) On-the-job training programs.

Collectively these programs blanket the field of needed primary education. They are available to every type of student and on every educational level. All the programs are based on the notion that in order properly to sell a given piece of merchandise the seller must know the product. Knowledge of its uses is stressed in order that the sales personnel of yards will be able intelligently to serve the customer to the end of satisfactory relations—with the consuming public.

The big problem ahead in the industry's educational need is for a real understanding of the basic need which

(Continued to page 178)

**You can build it**

*if you can figure it*

**LEARN ESTIMATING IN SPARE TIME**

Figure big or little jobs quickly and accurately the Tamblyn way for **DEPENDABLE** profits! Analyze current building costs. Learn the simple, easy Tamblyn System of Estimating — in your **SPARE TIME!** Used by successful contractors for more than 20 years. Try it for 10 days at our expense!

*The Tamblyn System*

**MAIL NOW**

Tamblyn System, Johnson Bldg., AB7, Denver 2, Colo.

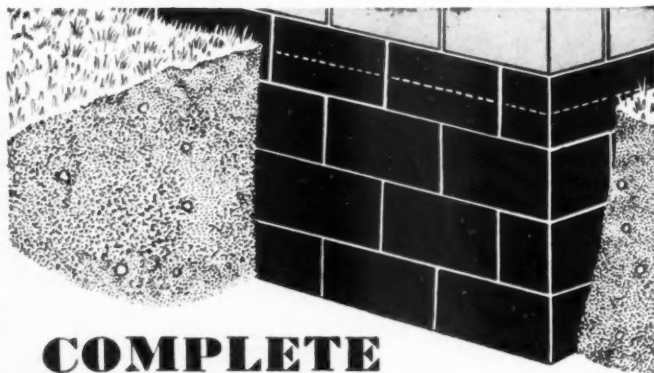
Send me Tamblyn System on 10 day trial. I will pay \$5 per month until \$50 is paid if I keep it. If not, I will return it.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**SEND NO MONEY! TRY IT BEFORE YOU BUY!**



**COMPLETE  
PROTECTION**

**FOR BELOW GRADE MASONRY**

Cabot's Foundation Coating makes foundation walls completely watertight. Fills and seals all pores. Assures dry basements . . . protects masonry from the weakening effects of water seepage . . . repels termites. Cabot's Foundation Coating is inexpensive and easy to apply.

**FREE SAMPLE** and complete information. Write Today! Samuel Cabot, Inc., 2057 Oliver Building, Boston 9, Mass.

**CABOT'S**

**— FOUNDATION COATING**



# Blo-Fan

CEILING VENTILATION



A CLINCHER FOR YOUR SALES



This is the sign you want to see on every house you build. Blo-Fans pay their way by getting the sign up quicker. Ask any housewife if she wants an electric ceiling ventilator in her kitchen, and you'll find why Blo-Fan ventilated homes sell faster at higher prices.

Blo-Fan is installed in the ceiling—where a fan belongs—to pull out greasy air and cooking odors before they strike the walls or ceiling.

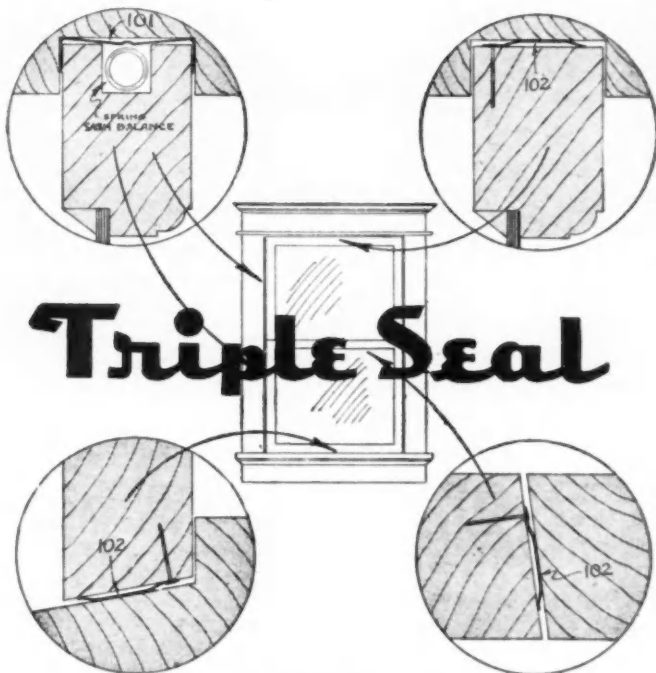
Clinch your sales by including Blo-Fan ventilation.

There's a Blo-Fan Distributor near you—write for his name and address.

## Blo-Fan

- combination fan and blower
- more than a fan
- more than a blower

PRYME & COMPANY, INC • LOS ANGELES 54, CALIFORNIA • • • NEW YORK • CHICAGO



# Triple Seal

## COMBINATION SASH BALANCES BRONZE WEATHERSTRIPS

Unit PACKAGED, any size opening \$3.25

See your lumber dealer or order direct from us.

THE WEATHERPROOF PRODUCTS CORP.  
321 WESTPORT ROAD • KANSAS CITY 2, MO. • WESTPORT 1210

The Heatilator<sup>\*</sup> makes any fireplace EASIER to BUILD!



Saves Time... Materials...Labor

Any style fireplace is easier to build, when you build it around a Heatilator. There's no damper or smoke dome to install, no throat or firebox to form. All these are built-in parts of the Heatilator.

The Heatilator is a steel form around which the masonry is easily laid. It assures the proper construction of any style fireplace, and gives complete customer satisfaction by eliminating the faults that commonly cause smoking. Circulates heat to far corners, even into adjoining rooms. Proved for 20 years, in thousands of homes and summer camps all over America! Write for installation data to Heatilator, Inc., 417 E. Brighton Ave., Syracuse 5, N. Y.

\*Heatilator is the registered trade mark of Heatilator Inc.

# HEATILATOR Fireplace

## BUY YOUR METAL WEATHER STRIPS from these 2 LARGE STOCKS

An important New Service for Weather Strip Contractors

Finest Quality Materials  
Newest Designs  
Quick Service



Give your customers the finest, most efficient metal weather strips made. Large mid-west and Pacific Coast stocks now maintained by carload shipments from leading fabricator.

All shapes for windows and doors, cut to length to your order. Also aluminum and brass thresholds. Write, phone, or mail coupon for complete details and prices.

# CHAMCO

CHAMPION OF THEM ALL

CHAMCO PRODUCTS, INC.

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Phone MAdison 8591

706 Folger Ave., Berkeley 2, Calif.  
Phone Olympic 7301

MAIL COUPON for further information

Chamco Products, Inc. (address nearest office)  
Please give me further information on new weather strip service.

Name \_\_\_\_\_  
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Touch of Magic

**SELLS KITCHENS  
SELLS HOMES**

Builders say an easy, low-cost installation of a modern Vent-A-Hood Kitchen Ventilator works magic in selling kitchens to women—and SELLS HOMES FASTER.

Designed for beauty with glistening white baked enamel finish, all chrome trim, splash panel to protect walls and utility light. Engineered for efficiency with patented centrifugal exhaust unit and grease-trap to remove food odors and greasy vapors. Venting is direct to flue or through simple metal ducts. Investigate Vent-A-Hood for homes you're building or planning.



Write for descriptive literature, quotations.

**VENT-A-HOOD**

THE MODERN KITCHEN VENTILATOR

The Vent-A-Hood Co., Plantation Drive-Hines Boulevard, Dallas, Texas



**Down Hill  
ALL THE WAY!**

Well  
Balanced  
FOR  
EASY WHEELING!

Sterling barrows wheel so easily, they make it seem like going down hill all the way. Lightweight . . . well-balanced . . . equipped with modern, anti-friction bearings. Sterlings relieve the operator of fully 80% of the load. Delivery of Sterlings will be as prompt as conditions permit.



STERLING WHEELBARROW CO., Milwaukee 14, Wis.



Look for this Mark of  
STERLING Quality

**Sterling**  
WHEELBARROWS

DRAIN  
TILE

BRICK

BLOCK

ROOF  
TILE

**MANUFACTURING  
OPPORTUNITIES**

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(Continued from page 109)

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\* \* \*

(Continued from page 176)

precedes the practical requirements of experience.

A management course is seen as an industry need and above all of these needs is that of an educational program for the consumer. There remains much to be done in education in the light construction industry. However, a start has been made and enthusiasm aroused. The industry is now pulling together on an effective five-point program.



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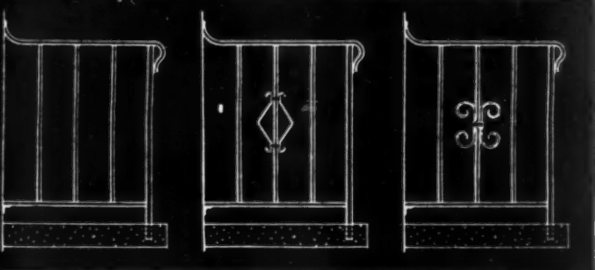
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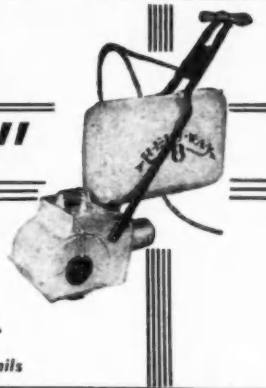


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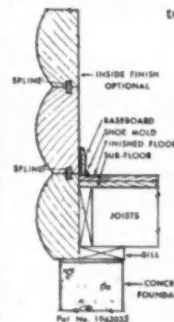
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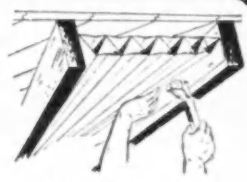
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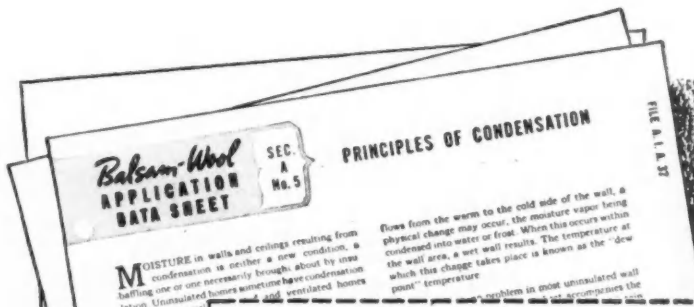
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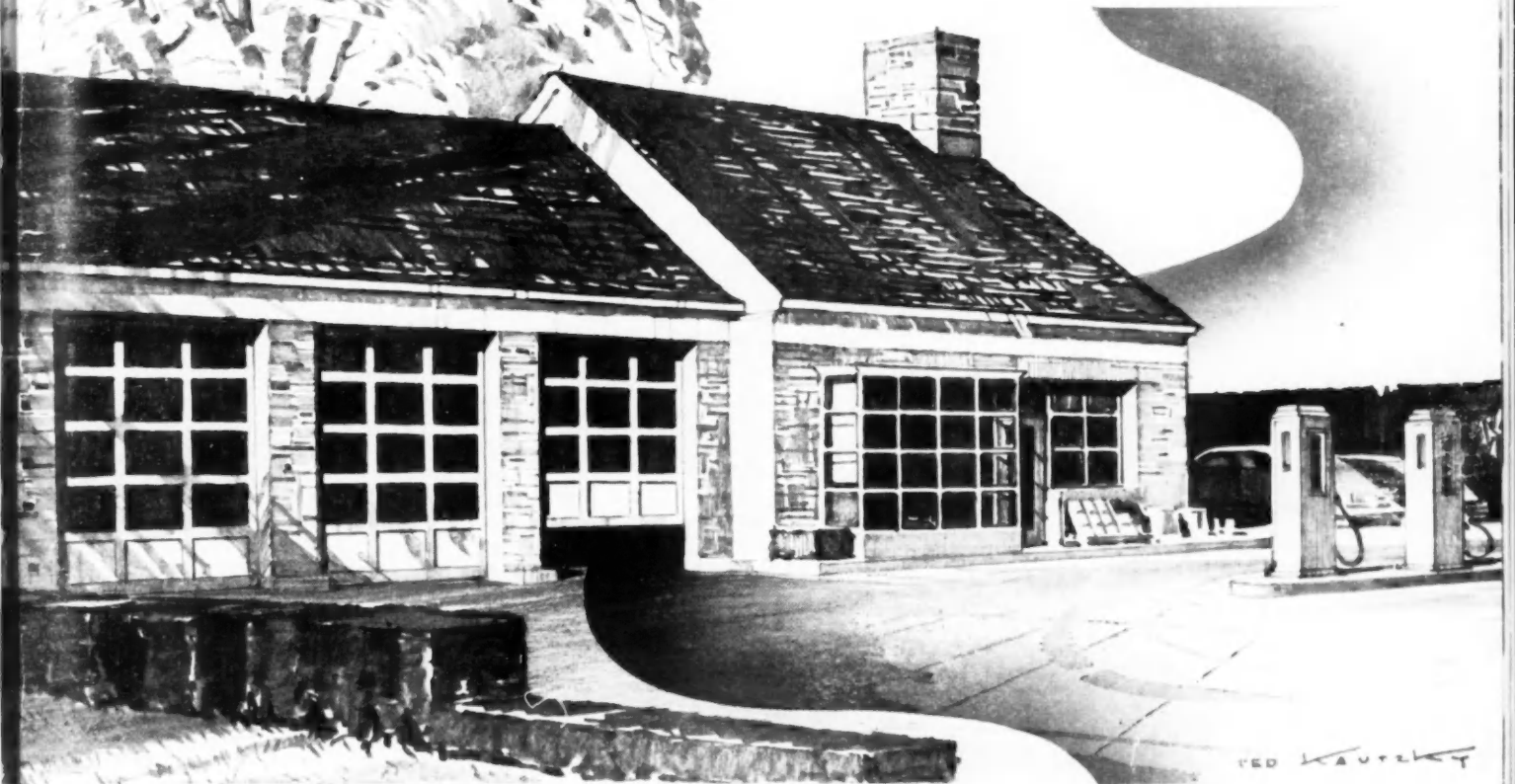
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