

(A Simmons-Boardman Publication)

# AMERICAN BUILDER

and Building Age

NAME REGISTERED U. S. PATENT OFFICE AND CANADIAN REGISTRAR OF TRADE MARK

## NOVEMBER, 1939

61st Year

Vol. 61, No. 11



AMERICAN BUILDER and BUILDING AGE, with which are incorporated National Builder, Permanent Builder and the Builder's Journal, is published on the first day of each month by the

**SIMMONS-BOARDMAN PUBLISHING CORPORATION**  
105 West Adams Street  
Chicago, Ill.

**NEW YORK**  
30 Church Street

**WASHINGTON, D. C.**  
National Press Building

**SEATTLE**  
1038 Henry Building

**SAN FRANCISCO**  
485 California St.

**LOS ANGELES**  
530 West 6th St.

Samuel O. Dunn, *Chairman of Board*; Henry Lee, *President*; Bernard L. Johnson, Robert H. Morris and Delbert W. Smith, *Vice-Presidents*; J. S. Crane, *Eastern Manager*; Roy V. Wright, *Secretary*; Elmer T. Howson, *Assistant Secretary*; John T. De Mott, *Treasurer*.  
Subscription price in the United States and Possessions and Canada, 1 year, \$2.00, 2 years, \$3.00, 3 years, \$4.00; foreign countries, 1 year, \$4.00, 2 years, \$7.00, 3 years, \$10.00. Single copies 25 cents each. Address H. E. McCandless, Circulation Manager, 30 Church Street, New York, N.Y.  
Member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulation (A. B. C.) **PRINTED IN U.S.A.**

<b>Publisher's Page—Liberty - - or Stateism?—by Samuel O. Dunn.....</b>	<b>31</b>
<b>Editorial—"Labor" and the Anti-Trust Probe.....</b>	<b>33</b>
<b>Government Explains Anti-Trust Drive—by Corwin D. Edwards.....</b>	<b>34</b>
Nationwide Attack Gets Under Way to Correct Alleged Monopoly Practices in Building.	
<b>\$4,000 to \$5,000 Houses Sell Best in Charlotte, N.C.....</b>	<b>36</b>
North Carolina Builder Finds Best Market Is in Lower Priced Group. Crossland Erects 10 Units at a Time	
<b>Schmidt Company Boosts Sales with Proper Planning for Narrow Lots.....</b>	<b>38</b>
<b>McCarthy Sells Fully Insulated Homes.....</b>	<b>40</b>
Friends and Neighbors Are Trenton Builder's Best Salesmen—But He Sells Them First on Quality Construction, Complete Insulation, Low Upkeep Costs	
<b>Two Small Modern Home Designs from the Northwest.....</b>	<b>42</b>
<b>5-Room Cottage with Economical 42' x 25' Plan.....</b>	<b>44</b>
<b>Home in New England Tradition—Modern Plan.....</b>	<b>45</b>
<b>Low Cost Cape Cod Home—Plywood Interiors.....</b>	<b>46</b>
<b>Modern Duplex in Montana.....</b>	<b>47</b>
<b>Front Cover Home—A Compact Cape Cod with Attached Garage.....</b>	<b>48</b>
<b>Improved Unit Windows.....</b>	<b>49-62</b>
How They Contribute to More House for the Money; Windows Sell Homes; Picture Windows; Window Conditioning; Quick Installation; Preservative Treatment; "Seal of Approval"; Quality Hardware; Features of Various Brands	
<b>Steel Windows and Casements.....</b>	<b>63-70</b>
Their Growing Use in Home Building; Casement Windows in Early American Houses; Cutting the Builder's Costs; Sales Appeal of Steel Casements; Recent Improvements; Features of Various Brands	
<b>How to Estimate Accurately.....</b>	<b>71</b>
The Ninth Article in a Series by J. Douglas Wilson on Practical Estimating—Interior Finish Is Discussed This Month	
<b>New Products Department.....</b>	<b>74</b>
<b>News of the Month.....</b>	<b>80</b>
<b>Letters from Readers.....</b>	<b>84</b>
<b>New Information—Catalogs Offered.....</b>	<b>102</b>
<b>Index to Advertisers.....</b>	<b>107</b>

**JOSEPH B. MASON**  
Eastern Editor

**BERNARD L. JOHNSON**  
Editor

**JOE SANDERS**  
Marketing Editor

**R. E. SANGSTER**  
Managing Editor

**ROBERT H. MORRIS**  
Business Manager

**LYMAN M. FORBES**  
Research Editor

**DOLA PARR**  
Associate Editor

**L. E. ARENT**  
Art Editor

**ADVERTISING:** W. F. COLEMAN, L. B. CONAWAY, J. S. CRANE, J. C. JONES, E. J. REICH, GORDON SIMPSON, D. W. SMITH, C. J. WAGEMAN

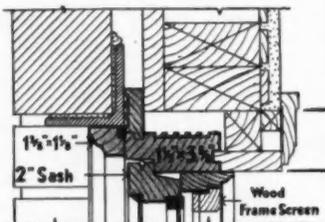
**FIELD STAFF:** L. O. ANDERSON, V. L. ANDERSON, C. L. CONLEY, C. R. W. EDGCUMBE, J. H. FREE, CHARLES R. HARTUNG, DICK WHITTINGTON

# ONLY THE RICH CAN AFFORD POOR WINDOWS—

## QUICK FACTS...ABOUT ANDERSEN CASEMENTS

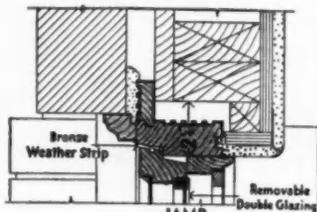


Section Through Jamb—Showing weatherstrip, removable double glazing on the inside of sash, and wood frame screen.



HEAD

Head Detail—Showing standard frame in typical brick veneer wall. Same basic detail is used for all types of construction.



JAMB

Jamb Detail—Note plaster reveal finish in place of wood trim. Either can be used with same frame detail.



SILL

Sill Detail—Weatherstrip is applied to sash at sill. Note special step sash construction that prevents sticking, binding.

DON'T FORGET YOU BUY WINDOWS ONLY ONCE FOR YOUR HOME—AND YOU'LL NEVER FINISH PAYING FOR POOR ONES—IN HEAT LOST, IN REPAIR BILLS, IN DISCOMFORT. YOU JUST CAN'T AFFORD POOR WINDOWS



## FOR TRUE LIFETIME ECONOMY...SPECIFY *Andersen* COMPLETE WINDOW UNITS

Good building practice dictates certain fundamentals based on sound common sense. Every good architect and builder knows that there should be no skimping in foundation or wall construction. After all, they're built to last. But, one of the most vulnerable parts of any wall is its windows. That is why it is so important to buy the best. Your client can replace a roof, modernize a bathroom, install a new furnace, but once the house is built, it is expensive to install new windows.

### Poor Windows—A Poor Investment

Besides, inefficient windows are a continual source of trouble and expense. Frames that leak air and water, sash that rattle and stick are a poor investment no matter what the price. Money spent in insulation and weathertight construction must be protected with good windows. An insulated wall with poor windows is little better than no insulation at all.

*That architects and builders realize this fundamental truth is shown in the definite trend to Andersen Complete Window Units.*

Andersen window frames (with their weathertight wide blind stop and famous locked sill joint) are not just "set in" the rough opening. They actually become part of the wall because they are nailed to and overlap the studding, assuring a weathertight joint.

Andersen sash, in both Casement and Narroline (double hung) are precision fitted, completely weatherstripped, and have "A" Quality glass bedded in putty. All Andersen Window Units are chemically protected against termites and decay according to highest industry standards.

Andersen Complete Window Units, for modern "tight" construction, are installed with a minimum of time and labor. Write today for free set of complete details. Address Dept. AB119.

*Andersen Corporation, Bayport, Minn.*

# PUBLISHER'S PAGE

## Liberty—or Stateism?

**"STATEISM"** is a word [that] is coming into use to designate the political and economic system that prevails in Germany, Italy and Russia. It is important Americans should learn (1) that the system in these countries is the same, and (2) what it is and how it works. For the greatest issue being fought over in almost every country, *including our own*, whether in peace or war, is, *stateism versus liberty*.

For years it was claimed that Communism in Russia and Naziism in Germany were utterly different and incompatible. But when the present war began Stalin and Hitler had no difficulty in combining to divide eastern Europe between them, because they represented the same system, stateism—which is simply the concentration in the *government*—i.e., the *state*—of all power over *all the people and all property*. In Russia the state owns and manages virtually all property; in Germany, even in peace, the state absolutely controls the use of all property that it does not own; and in neither has the citizen the slightest freedom of speech or action as respects any government policy.

**HOW** is this issue of stateism versus liberty being presented in the United States? By efforts to establish a so-called "planned economy." These efforts were made *before the war in Europe began* upon the ground that a "planned economy" here would benefit most of our people in *time of peace*; and they have been increased *since the war began* upon the ground that we should have more "planned economy" to *help prepare us for war*.

And what is "planned economy?" As being promoted in this country it includes both increased government control of the *management of privately-owned property* and increased government *ownership of property*. A. A. Berle, Jr., assistant secre-

tary of state, and one of the principal New Deal advocates of a "planned economy," said recently: "The government will have to enter into the direct financing of activities *now supposed to be private* \* \* \* Over a period of years *the government will come to own most of the productive plants of the United States.*" This policy already is being carried out in numerous fields—even in the *housing* field, for example, by the government's building large amounts of housing with the taxpayers' money, and renting it at less than cost.

**HOW** does that affect *liberty*? The more government takes control of the use of privately-owned property the more it restricts the *freedom* of private enterprise; the more it becomes the *owner* of property the more it restricts the *field* of private enterprise; and it is the experience of every country that the more government thus increases its power the more it restricts the citizen's *liberty of speech and action*.

If the people of the United States should be drawn into war, it would be upon the pretext that they must help the British and French defend *liberty* against *stateism*. But why first, for purposes of either peace or war, sacrifice liberty by *establishing* stateism here at home—and then go to war to protect liberty from stateism abroad?

The way for the American people most certainly to avoid becoming such *slaves of their governments* as the Germans, Russians and Italians are is to resist every effort of our government to increase its *control of industry or its ownership of property*.

Samuel O. Dunn



*"Here's How!"*

**'INCOR' BREWERY FLOOR PLACED IN COLD WEATHER;  
STRONGER, LONGER-WEARING, DUST-PROOF CONCRETE**

TEMPERATURES hovered around freezing, when Pilsen Brewing Company's Chicago rack-house floor was replaced last February. Saturday and Sunday, the old floor was torn out. Monday, Armstrong Cork Company placed a 3-in. layer of cork. Tuesday, 2½-in. of 'Incor' concrete (mixing water heated) was placed; followed by ¾-in. 'Incor' monolithic topping.

Floor was finished late Tuesday night. Temperatures inside the rack-house were about 40°, and warm water was used in curing the concrete. Early Friday morning the new floor was in use. Smith, Brubaker & Egan, Engineers and Architects; Kalman Floor Company, Contractor.

Typical of 3-way 'Incor' saving: (1) 'Incor' cures thoroughly

in one-fifth the usual time—a big help in assuring stronger, denser, non-dusting concrete; (2) 'Incor' cuts heating costs, protects against freezing; and (3) concrete is ready to use days sooner—no business tie-ups.

Figure these advantages on cold-weather work. You'll find it pays, and pays well, to use 'Incor'\*—the 24-hour Portland cement with a 12-year record for long-time, expense-free service. Write for copy of "Cold-Weather Concreting." Lone Star Cement Corporation, Room 2233, 342 Madison Avenue, New York.

\*Reg. U. S. Pat. Off.

Sales Offices: ALBANY, BIRMINGHAM, BOSTON, CHICAGO, DALLAS, HOUSTON, INDIANAPOLIS, JACKSON, MISS.; KANSAS CITY, NEW ORLEANS, NEW YORK, NORFOLK, PHILADELPHIA, ST. LOUIS, WASHINGTON, D. C.

**LONE STAR CEMENT CORPORATION**  
MAKERS OF LONE STAR CEMENT • • • 'INCOR' 24-HOUR CEMENT

# AMERICAN BUILDER

## AND BUILDING AGE

### "Labor" and the Anti-Trust Probe

IN reference to the current federal drive against cost-increasing monopolies in building, this publication stated in its August issue, "The Building Industry Wants the Truth" and went on to say that all would welcome the Department of Justice's anti-trust action against building industry restraints, if honestly and intelligently carried out *against all kinds of restraints*, including labor racketeering and politically controlled building codes.

Accordingly, it was with intense interest and satisfaction that the *American Builder* editors listened to the address of Corwin D. Edwards of the U. S. Department of Justice on Oct. 10 before the Fall meeting of the Chicago Building Congress. The full text of this statement is presented on the pages immediately following.

Mr. Edwards has certainly made a complete and fearless survey of the entire range of everything known or imagined in price fixing, collusion and racketeering in the building world. He did not side step when challenged by powerful dealer or manufacturer combines nor did he pull his punches on union labor rackets or contractor rings. His statement shows that he and his investigators know their stuff.

But the question now is, will the Justice Department be permitted to go ahead and do the thorough and fearless job that Mr. Edwards and his chief, Assistant Attorney General, Thurman Arnold, have outlined. United Press dispatches from Washington dated Oct. 24 quote Attorney General Murphy as saying that the Department's investigation of the building industry "is not directed against labor and is not going to be"—this following a conference of "more than an hour" with William Green, President, and John P. Coyne, head of the Building Trades Division, of the American Federation of Labor.

#### A Whitewash?

While this looks suspicious, indicating that labor politics is going to be permitted to intervene, still there is a hopeful side which this publication would like to consider before branding this a "whitewash." Corwin Edwards in his statement listed three sorts of restraints that "the leaders of certain building trades unions, in some cities, have engaged in." These restraints are widely known and just as widely deplored. They can not be waved aside, denied and dismissed. The building industry doesn't want any whitewash, but favors this Department of Justice house cleaning, if it can have confidence it will be a thorough one.

In regard to "Labor," Mr. Edwards said:

"In the case of labor, as in the case of dealers, contractors, and sub-contractors the situation differs from one city to another.

"But in some cities the leaders of certain building trades unions have engaged in three sorts of restraints. First, they have used their control of the union to set up rules that pervert organized labor groups into strong-arm squads which enforce restraints in the interest of sub-contractors and dealers in building materials. The withholding of labor from independent employers, in spite of their willingness to deal with the union and to observe union wages, hours, and working conditions, is the most conspicuous means employed. Second, certain racketeering business agents have enriched themselves by collecting private graft in the form of strike insurance; in extreme cases they have even let those who pay such graft ignore the union wages, hours, and working conditions which must be observed by other employers of union labor.

"Third, some business agents have enforced a series of union regulations designed, not to insure reasonable wages, hours, and working conditions, but to prevent the introduction of modern construction methods and thereby to require that an unnecessary number of hours of labor be used upon each building. Some of these regulations prohibit the use of new materials, particularly of those which have been fabricated in a shop rather than at the building site; some prohibit the use of new and more efficient tools; some require that the building itself shall be constructed to unnecessarily elaborate specifications; some conceal, under regulations as to the composition of the work force, a requirement that unnecessary labor be hired."

#### Or a Pledge to Be Good?

Now, since this triple indictment states clearly facts that are known to all building industry men, it does not seem reasonable that it could be successfully "laughed off" in Washington. Perhaps this highup Washington conference took another slant—and this is what this publication will hold to until the opposite is proved—perhaps the building industry labor leaders have agreed, in advance of further investigation and prosecution, to abate the nuisances complained of. *That* certainly would be a great victory, though an unsung one, for the anti-monopoly building drive!

Mr. Edwards said:

"Even the preliminary investigations by the Department of Justice have led, in certain cases, to the abandonment of certain collusive practices, the dissolution of certain bidding rings, and the lowering of certain prices. It is believed that the majority of the industry will take advantage of the opportunity offered by the Department's broad attack to set its own house in order."

Perhaps "labor" is putting itself above reproach in advance of further Department of Justice action. We hope so.

# Government Explains Anti-Trust Drive

**Nationwide Attack Gets Under Way to Correct Alleged Monopoly Practices in Building. Goal Is Set at Complete Restoration of Competition without Restraints; Warn of More Government Housing If Present Program of Action Fails**

**Prosecution Against Manufacturers, Distributors, Dealers, Contractors and Labor Outlined; Concentrated So Far in Eight of the Larger Cities**

By **CORWIN D. EDWARDS\***

U. S. Department of Justice

**O**N OCTOBER 3, the Department of Justice announced the first of a series of grand juries called to investigate complaints of violations of the anti-trust laws in the various industries and trades which construct buildings or supply building materials. Chicago was named as one of the eight cities in which grand juries are either now sitting or will shortly be called. The others mentioned are Cleveland, Detroit, St. Louis, Pittsburgh, San Francisco, Los Angeles, and Seattle. Additional grand jury investigations will be announced from time to time hereafter.

My purpose is to tell why this investigation has been started, the nature of the practices which are being investigated, and what we hope to accomplish.

## The Purpose of the Proceedings

The broad purpose which has led to this investigation is to bring the construction industry back to the high level of activity and employment which it attained during the 1920's. Today a part of the nation's construction is directly subsidized by such agencies as the United States Housing Authority and the Public Works Administration and another part is financed on unusually favorable terms through the Federal Housing Administration. Nevertheless, with all the building which is receiving public aid included, the construction industry has reached only about two-thirds of its former peak volume and residential construction is well below half of its former peak.

We all know that the public and industry must suffer from this idleness. The industry suffers from top to bottom. Manufacturers of building materials must do business on the basis of 30, 40, 50 or 60 per cent of their capacity to produce. Distributors must scramble for an equally limited market. Contractors and subcontractors must struggle for enough jobs to maintain their organization. Labor must try to earn enough in five or six months of employment to support a family throughout the year. Each of these groups attempts to meet its burden by dividing up the available work or by charging enough to make expenses, even on the limited amount of work available. But such attempts do not solve anybody's problem; they merely decide what proportion of

\*The text of this article is a statement on "Anti-trust Action and American Housing" as presented by Mr. Edwards before a recent meeting of the Chicago Building Congress.



Chicago Times photo

CORWIN D. EDWARDS

the total cost of idleness shall be borne by each group.

Other industries suffer, too, from stagnant construction. Between 1919 and 1935 the construction industry used about 15 per cent of all the products made in the United States and at its peak produced nearly 15 per cent of the total national income. Its peak employment was 2,400,000 persons, not counting the employment of the large industries whose products it consumed. To reduce the size of such a great industry by one-third is necessarily to hurt every industry which sells to it or to its employees. The unemployment of men and the idleness of business concerns in construction are a major obstacle to prosperity in the United States.

The standard of housing in the United States is miserably low because residential construction has not been meeting the needs of the American people. About 4,000,000 dwelling units—16 per cent of the total number in the United States—are regarded as unfit for human habitation. With all the public aid now available for housing, our rate of residential construction in 1938 was barely sufficient to care for the growth of population. It contributed scarcely at all to the replacement of these substandard houses. The nation's minimum need for new houses has been estimated by the Temporary National Economic Committee as about 525,000 housing units per year and by the National Resources Committee as 900,000. Yet we produced in 1938 only 345,000 units—at least 180,000 too few, according to the lower estimate of our needs, and less than half of what we need according to the higher estimate.

The whole problem has become more acute because of the war in Europe and the dangers which this war necessarily creates for the United States. Between 1914 and 1918 capital and labor were so diverted from the construction of dwellings that by the end of the war our housing shortage was one of our greatest problems. In 1914, however, we started without a handicap. If there should be a similar development in the next few years it would start

from a ten-year accumulated deficit of houses, which is already a major national problem. It is peculiarly important, therefore, to do what we can to make up this deficit in whatever time may be left before the economic stresses of the war in Europe distort our own economic system.

The construction industry's failure to produce the houses which the American people need is largely due to the fact that housing costs are too high. In 1936 only 15 per cent of the houses built were intended to be sold for as little as \$4,000. Yet the T.N.E.C. recently brought out the fact that 52 per cent of the city families in the United States cannot afford either to buy or to rent houses which cost more than \$4,000. The shortage of houses and the opportunity to expand the residential construction market lie in this low-price area. If the needs of half the American people are to be satisfied, the cost of houses must come down.

This is the problem with which we have to deal. Insofar as restraints of trade which affect building contribute to the maintenance of building costs, they enhance directly the industry's failure to meet the public's pressing need for houses and thereby to re-establish itself upon a prosperous basis.

### The Scope of Action

That cost-raising restraints abound in the building industry is notorious. Indeed the present investigation is in response to complaints about this industry which have come to the Department in large numbers from more varied groups and more persistently than in the case of

#### LATE DEVELOPMENTS ON VARIOUS FRONTS OF U.S. BUILDING MONOPOLY DRIVE

● Chicago, Cleveland, Detroit, St. Louis, Pittsburgh, San Francisco, Los Angeles and Seattle are the first eight cities scheduled for grand jury consideration of building restraints. Other cities to be included as investigation gets into full swing.

● Washington, D.C., was recently the scene of the first indictment returned in the Justice Department's national campaign against alleged restraints of trade in the building industry. One labor union and five labor union officers and representatives were named, and the Drivers, Chauffeurs and Helpers Union was charged with conspiracy to restrain trade in building materials used in the District of Columbia.

● The Department of Justice has stated that the widespread anti-trust proceedings are to cover all building restraints imposed by various groups, including labor, contractors, heavy industries, local officials and ordinances.

● Based on the contention that five members and the secretary of the Cleveland Plastering Contractors Association had increased their bids on school jobs to finance their association, these men were recently convicted of defrauding the United States Government by collusive bidding on school repair contracts financed by federal funds.

any other industry investigated in recent years. Among the complainants have been owners and prospective owners of houses, members of the rank and file of labor organizations, officials of labor organizations, sub-contractors, contractors, architects, real estate dealers, distributors of building materials, manufacturers of such materials, and public officials administering local, state, and federal housing programs. In one city, separate requests for investigation and action under the anti-trust laws came from the principal association of business men engaged in the building trades and from the central organization of building trades unions. In another city, the Chamber of Commerce requested the Division to investigate, making the charge that restraints upon building were worse than anywhere else in the United States and had brought new construction to a standstill. The annual convention of the American Institute of Architects recently adopted a resolution which formally endorses the Department's investigation. The general agreement that anti-trust action is needed to end restraints has been unparalleled in the experience of the Department with investigation of restraints of trade in other industries.

One or two isolated prosecutions would not be sufficient to deal with the situation described in these complaints. Experience with past cases has shown that to correct some isolated practice does not do much to the cost of building and leaves the industry still so shackled that even the group which has been prosecuted often relapses into its old ways of doing business. Only by a consolidated attack upon all the restraints can we affect housing costs, and only thus can we give individuals and groups a chance for vigorous competition.

Accordingly the Department's program of investigation and prosecution is planned to cover the entire building industry. It includes the manufacturers and distributors of various building materials and the local dealers, contractors, sub-contractors, and labor groups of cities throughout the United States. The various grand juries will sit as nearly at the same time as can be managed. The objective will be not prosecution for its own sake nor the selection of a few individuals or groups to be blamed for the troubles of the whole industry, but the simultaneous removal of restraints so that there may be a free field for building.

### What Preliminary Investigations Show

Preliminary investigations preparatory to the calling of grand juries have already been made on a wide scale. The practices found in the industries manufacturing and distributing building materials differ according to the circumstances of each particular industry. In general they take the form of efforts to fix prices and efforts to exclude new enterprises and new ways of doing business. Sometimes an attempt is made to avoid illegality by setting up a price-fixing scheme in the form of a system of patent license agreements or agency contracts. Sometimes an industry divides the available market or unites to make all sales through a joint selling organization. Sometimes a high level of fixed prices is attained by the general adoption of pricing formulae such as basing point systems. For present purposes the devices do not matter. They are alike in their attempt to keep building material prices high. Some of the most successful of these schemes resulted in prices which were decidedly higher in 1937 than they had been in 1929.

The efforts to shut out new ways of doing things have been of several kinds. Sometimes improved building materials have been kept off the market because they were cheaper. Sometimes low cost distributors have been denied the opportunity to buy goods, and manufacturers

(Continued to page 88)

## \$4,000 to \$5,000 Houses Sell Best in Charlotte, N. C.

**North Carolina Builder Finds Best Market Is in Lower Priced Group. Crosland Erects 10 Units at a Time.**

**C**HARLOTTE, N.C., is a busy industrial city which has enjoyed a considerable volume of construction in recent years. A large part of the residential building has been in higher priced homes, but the tendency is now towards houses in the \$4,000 to \$5,000 class which can be purchased by persons able to pay in the neighborhood of \$30 a month.

In this price range one of the most successful developments is the new Woodale Road development of John Crosland. Many factors contribute to the success of this development, but according to Mr. Crosland, the selecting of a house in the proper price range is the most important.

An earlier Crosland development, Club Colony, was priced in the \$6,000 to \$8,000 class. This was largely completed last year, and in his new development Crosland decided to specialize in the \$30-a-month bracket. The manner in which these houses have sold



**FIVE CHARMING HOMES  
NOW OPEN FOR INSPECTION  
ON WOODALE ROAD!**



Located Half Block From Corner of W. Boulevard & Mint St.

**CAN BE BOUGHT FOR AS  
LITTLE AS \$450 TO \$550 CASH!**

Balance Around \$31 Per Month  
Including Taxes and Insurance.

Drive by and see these homes. You will be amazed at the charm and original design of each . . . at such low prices. Excellent lot elevations and gorgeous shade trees everywhere. You can't afford to overlook this remarkable home offer. We are building 16 homes here!

**VISIT OUR BOOTH  
AT HOUSE & HOME EXPOSITION**

**The JOHN CROSLAND CO.**

BUILDERS-DEVELOPERS  
113 EAST 4th ST. PHONE 3-9344

FOUR typical small homes in John Crosland's Woodale Road development, Charlotte, N.C. Typical floor plan and elevations are shown opposite. Advertisement above features \$450 cash, \$31 per month.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 186 lin. ft.; Excavation per ft. deep, 55 cu. yds.; Outside Walls, 21.00 sqs.; First Floor, 11.90 sqs.; Ceiling, 11.90 sqs.; Roof Pitch, 7" rise per ft. run; Roof, 14.00 sqs.; Hips and Valleys, 14 lin. ft.; Cornice, C & F, 144 lin. ft.; Partitions, 164 lin. ft.; Inside Finish OS Walls, 130 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 1 opp.; Inside Doors and Casement Opps., 13 opps.; Windows and Casements, 12 opps.; Gable Sash and Louvers, 2 opps.; Chimney, 25 lin. ft.; Porch Floor, 1.55 sqs.; Porch Ceilings, 1.27 sqs.; Porch Beam, 47 lin. ft.; Porch and Balcony Post and Newels, 14; Porch Roof, 2.00 sqs.; Porch Cornice, 52 lin. ft.; Porch and Deck Rail, 12 lin. ft.

has more than justified his analysis of the market.

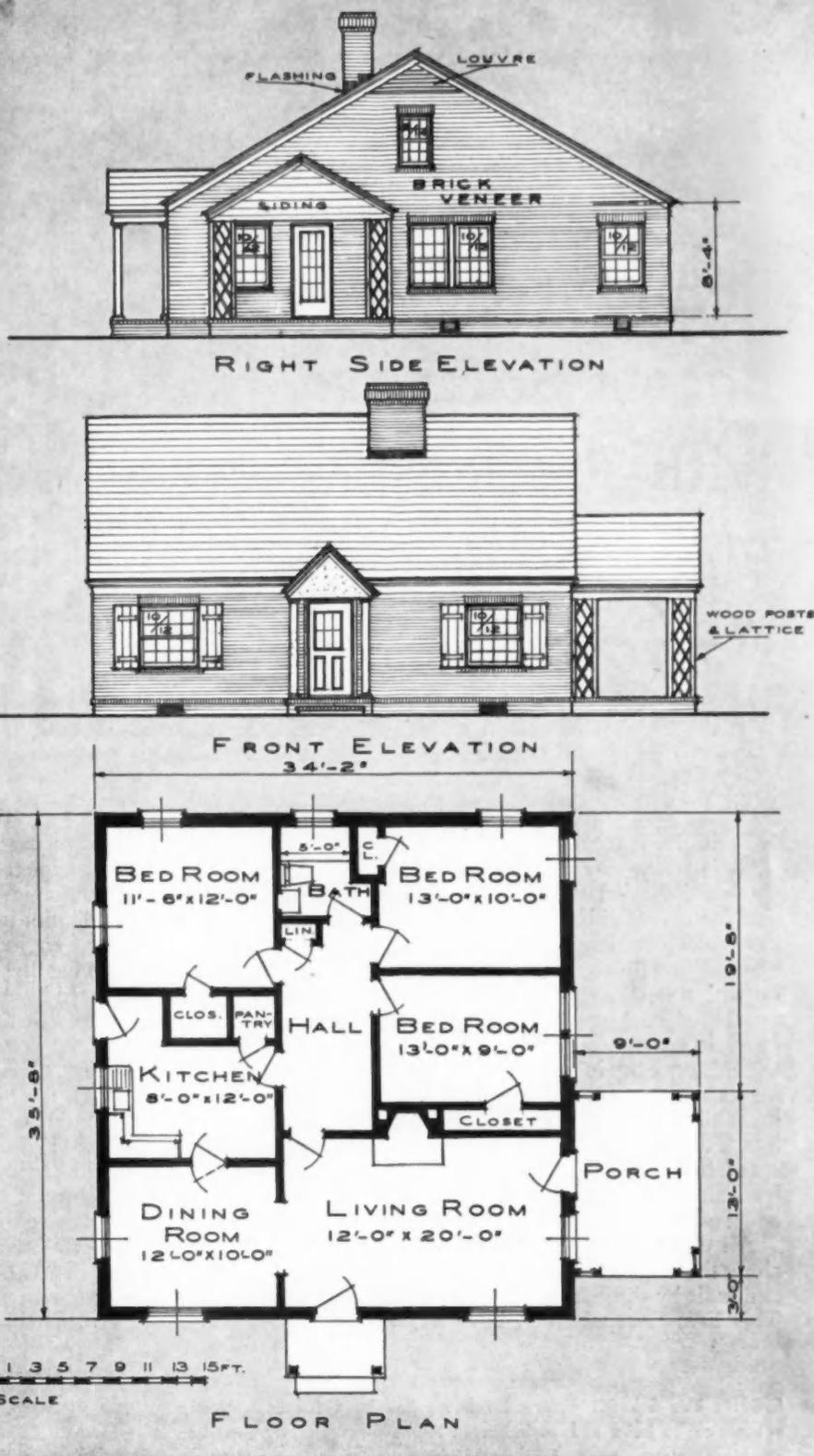
The Woodale Road development is on the outskirts of Charlotte, in a rolling, heavily wooded section. Crosland has retained as far as possible the natural beauty of the setting, and this is an important factor in its appeal to the public. The houses are set far back from the road on large wooded plots. The large trees and attractive setting would compare favorably with houses at double the price.

In his construction methods, and in the manner in which he organizes the work, however, Crosland follows a practical economical procedure that makes it possible to keep the selling price within reach of his goal—the \$30-a-month rent payer. He has organized his job efficiently on the basis of building ten houses at a time. He has gathered together a crew of skilled workers who turn out more than the average volume of work in return for the steady jobs and fair wages he pays.

In order to control the character of his development, Crosland refuses to sell vacant lots. He will sell a lot only with a house upon it. He plans his own houses, selects the equipment and handles the entire work entirely within his own organization.

Crosland has had a wide and somewhat varied experience in the building line, at one time having been actively engaged in the retail lumber and material business in Charlotte. He says that while the building of homes has its share of headaches it is by far the most interesting job of any. He believes that each element in the industry should specialize in its own work. "It is a terrible mistake," he said, "for the lumber dealer to go into the building business." He pointed out that each is a specialized work calling for the full effort of an individual.

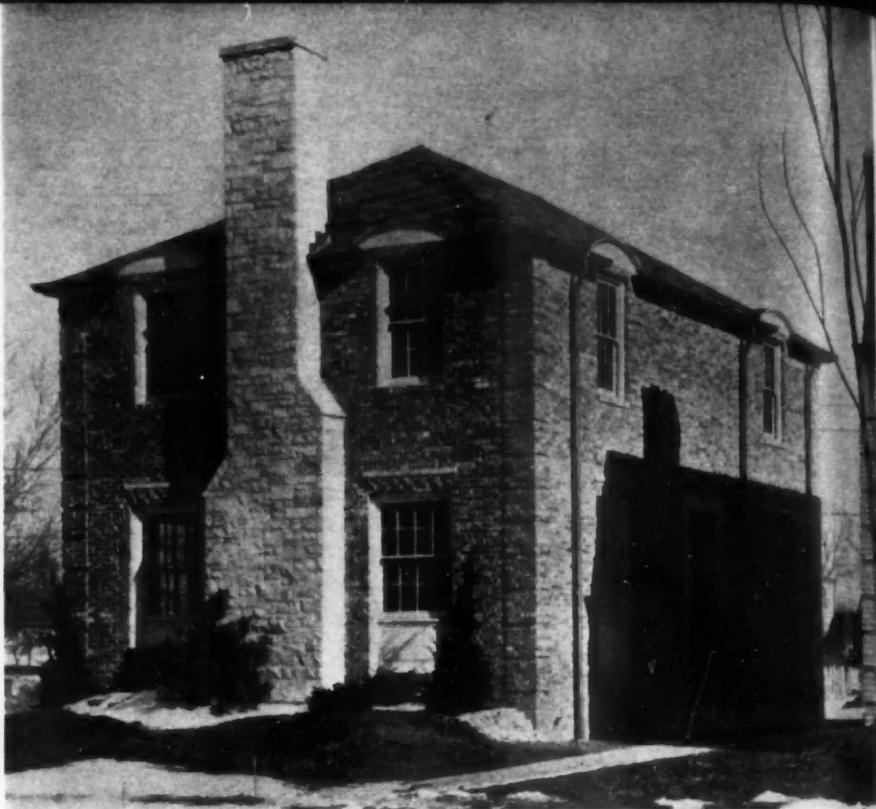
Having built more than 100 houses in the past two years, Crosland has proved the value of quality materials and construction methods. Included in the products he



DETAILED drawings show typical Crosland plan followed with variations.

features are: Huttig sash and doors, Standard plumbing fixtures, Round Oak winter air conditioning furnaces, Westinghouse circuit breakers, Johns-Manville asphalt shingles. He has developed a floor plan that is adaptable to use either with or without a basement furnace. In the lower priced houses a Duotherm oil burning heater is located in the central hall. Openings from the central hall to the individual rooms permit free circulation of warm air. This central hall arrangement is also adaptable for use with a pipeless warm air furnace located in the basement.

## Schmidt Co. Boosts Sales with Proper Planning for Narrow Lots



SIX generously proportioned rooms are laid out with a minimum of waste space in this 24 by 36 foot narrow lot house planned and built by Frank A. Schmidt Company, Chicago. The exterior is of common clinker brick with Lannon stone chimney and trim.

**R**ECENT trends have been away from the use of narrow city lots for home building, due to FHA stipulations on the use of wider frontage, the desire for more light and air and the more reasonable prices now asked for vacant as compared to those of ten years ago. Nevertheless there is still the problem of what to do with a large number of single narrow lots which were purchased some time back. Many of these are located in such a manner as to make redividing impossible, so there is once again a demand for good workable arrangements which combine compactness, low cost and, at the same time, allow plenty of light and air, even on narrow lots. To properly plan such a house requires particular talents which as yet have not widely been turned to this problem, although much has been done to improve duplexes and row houses as a solution to narrow lot utilization.

An exceptionally good example of what can be done along these lines is found in the houses now being planned and built by the Frank A. Schmidt Company of Chicago. This firm is reported to have the largest built-to-order

home business in that city. So far, about 75 houses have been completed in the first nine months of this year, and production is now geared up to two jobs a week. Most of the Schmidt houses are built on narrow lots; the Schmidt staff of engineers and architects has evolved a basic plan which has the features demanded in modern houses, as is indicated by the volume of business now being done. The efficiency of the Schmidt company is not limited to planning; the complete facilities of selling, planning and estimating, all under one roof, allow a deal to be completed through their office in two days.

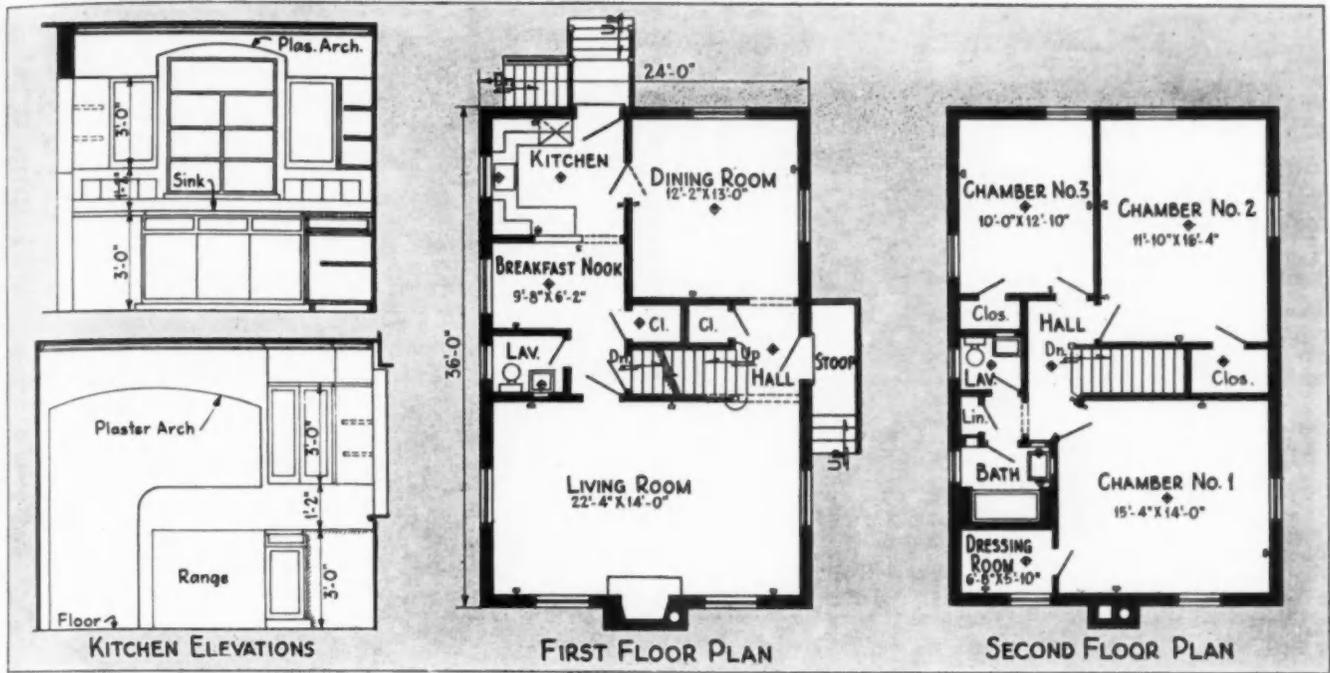
Schmidt employs a pricing system very similar to the basic idea of *TruCosting*. After preparing the plans, the unit quantities are taken off and having the current cost of each unit, a preliminary estimate of uncanny accuracy can be given immediately. Careful investigation of all prospects has completely eliminated any loan rejections from FHA, 80 per cent of Schmidt's buildings being financed with insured mortgages.

Two of the Schmidt narrow lot houses are shown on

**RIGHT:** This Schmidt narrow lot house has been found extremely economical to build and, as indicated in the plans directly opposite, combines many good features of interior room arrangement.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 122 lin. ft.; Trench Walls, 16 lin. ft.; Basement Floor, 573 sq. ft.; Excavation per ft. deep, 29 cu. yds.; Outside Walls, 19.85 sqs.; First Floor, 5.79 sqs.; Second Floor, with fin. flg., 5.45 sqs.; Ceiling, 5.79 sqs.; Roof Pitch, 4" rise per ft. run; Roof, 8.20 sqs.; Hips and Valleys, 80 lin. ft.; Cornice, C & F, 130 lin. ft.; Partitions, 140 lin. ft.; Inside Finish OS Walls, 200 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 ogs.; Inside Doors and Cased Ogs., 9 ogs.; Windows and Casements, 19 ogs.; Chimney, 31 lin. ft.; Main Stairs, 1; Porch Floor, .80 sqs.; Porch and Deck Rail, 30 lin. ft.





"TRUCOST" ESTIMATING FIGURES FOR ABOVE HOUSE:  
 Basement Walls, 136 lin. ft.; Trench Walls, 17 lin. ft.; Basement Floor, 775 sq. ft.; Excavation per ft. deep, 38 cu. yds.; Outside Walls, 21.20 sqs.; First Floor, 7.75 sqs.; Second Floor, with fin. fig., 7.75 sqs.; Ceiling, 7.75 sqs.; Roof Pitch, 6 1/2" rise per ft. run; Roof, 10.36 sqs.; Hips and Valleys,

76 lin. ft.; Cornice, 4", 120 lin. ft.; Partitions, 190 lin. ft.; Inside Finish OS Walls, 228 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 opgs.; Inside Doors and Cased Opgs., 15 opgs.; Windows and Casements, 23 opgs.; Chimney, 31 lin. ft.; Main Stairs, 1; Porch Floor, .44 sqs.; Porch and Deck Rail, 34 lin. ft.

these pages, the one above being 24 feet over all with six rooms, 1 1/2 baths and breakfast nook. This house on a 40-foot lot leaves 6 feet on one side and 10 feet on the other, so that if several of these are built in a row, there is 16 feet between houses. It might even be placed on as little as 30-foot frontage, although this is rather tight.

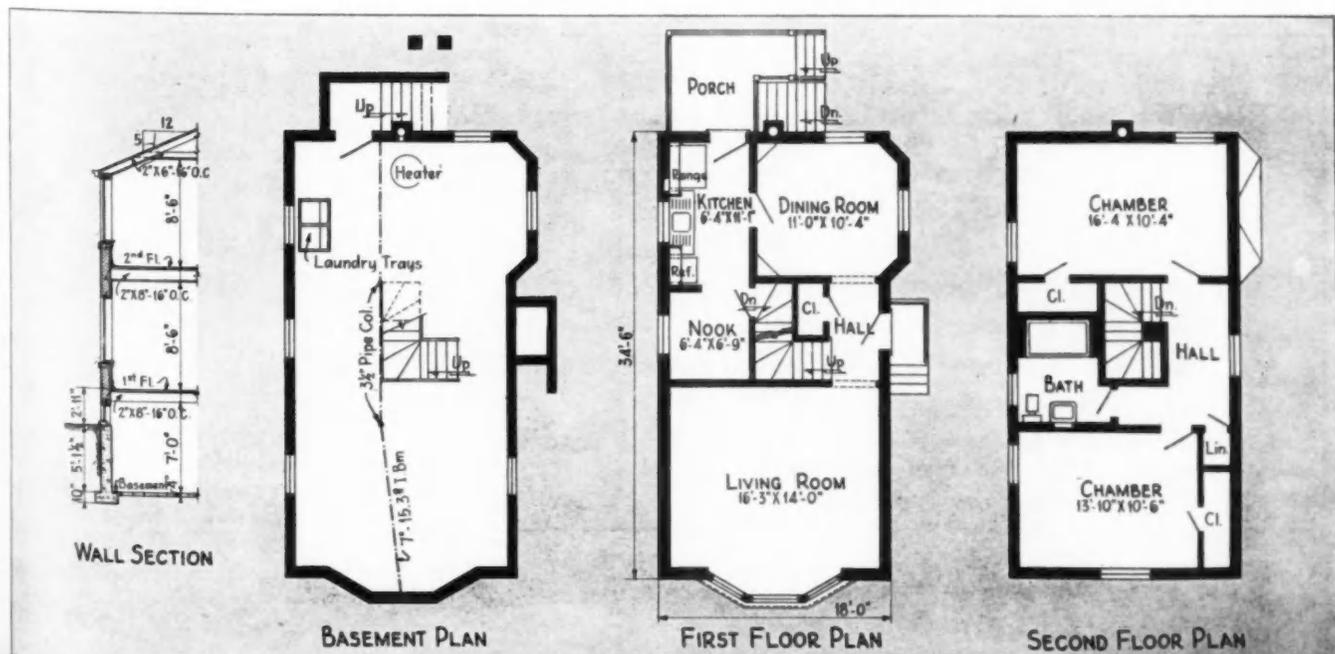
The house is very compact in plan, having no waste hall space and all principal rooms receiving light from either front or rear. The side entrance allows the living room to be placed across the front, with good circulation around the stair well. An efficient U-shaped kitchen is connected to the breakfast nook with a plaster arch which extends almost full width above the range. The three bedrooms on the second floor are of good size with ample closets and an unusual arrangement of bath facilities. Here a small hall divides the lavatory and toilet on one side from a second compartment having another lavatory and bathtub with a handy linen closet between.

The low cost five-room house below is exceedingly economical to build, and can be placed on as little as 25

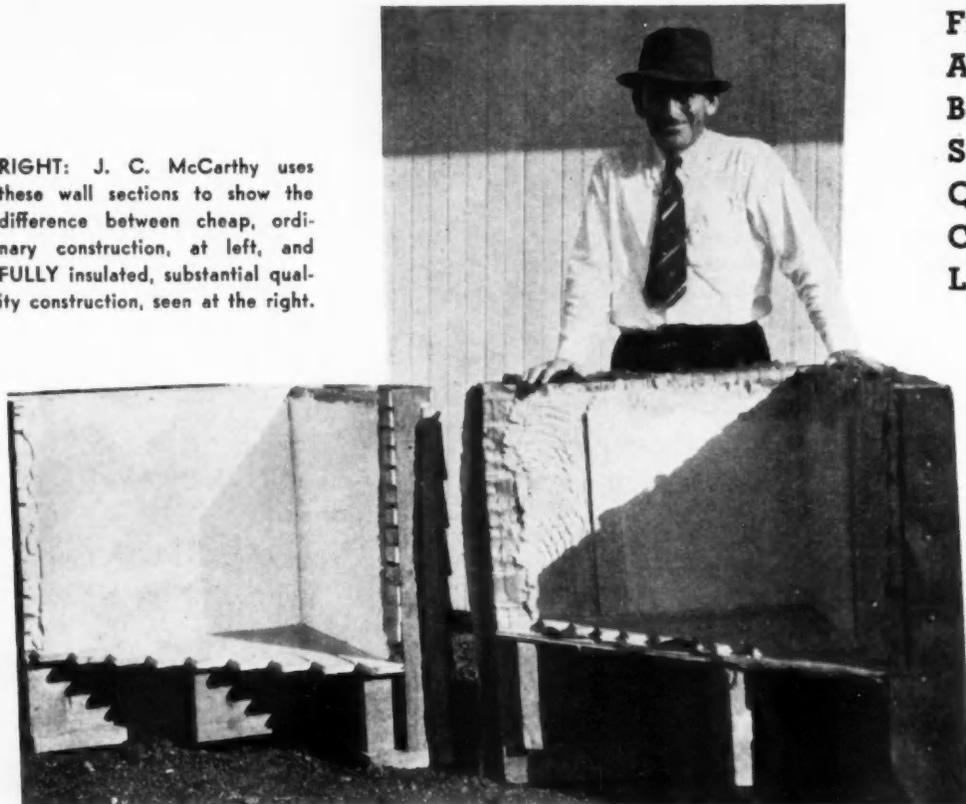
feet, allowing 7 feet between houses. Here again, there are no waste space, long halls or dark rooms. This plan has rated a 90 per cent FHA loan.

Highlight features, materials and equipment for the larger house are as follows:

Open staircase in living room; U-shaped kitchen; recreation room in basement; 12-inch concrete foundation; 10-inch solid brick walls furred on inside and finished with 3-coat plaster on Celotex lath, plaster on Rocklath in interior; Hines Precision kiln-dried 12 per cent moisture content framing; 4" USG rock wool above second floor ceiling; Wisconsin Lannon stone trim; 3-in-1 210 lb. Ruberoid asphalt shingles; copper-bronze painted Armco gutter downspouts; bronze window screens; Imperial wallpaper on all walls except 6' tile wainscot, and enamel finish in baths and kitchen; red oak floors except Armstrong linoleum in kitchen and tile in baths; Sun-beam gas-fired winter air conditioning; Standard Sanitary fixtures; Lightolier electric fixtures; Corbin hardware; Rittenhouse door chimes.



RIGHT: J. C. McCarthy uses these wall sections to show the difference between cheap, ordinary construction, at left, and FULLY insulated, substantial quality construction, seen at the right.



**Friends and Neighbors  
Are Trenton Builder's  
Best Salesmen—But He  
Sells Them First on  
Quality Construction,  
Complete Insulation,  
Low Upkeep Costs**

## McCarthy Sells FULLY Insulated Homes

**J.** C. McCARTHY, whom some of his friends call "the Will Rogers of Trenton," has built and sold more than 100 houses in his Glendale subdivision near Trenton, N. J., in the past three years. This fall his sales have been so good that he has all he can handle until next spring. In other words, business is booming.

When you ask McCarthy why this is so he says, "My friends and neighbors sell my houses. We live right here among our customers, and they are our best salesmen."

This is undoubtedly true, but back of the McCarthy smile and personality are quality construction methods and materials that keep the customers satisfied.

Highly important is the fact that McCarthy-built houses are completely insulated throughout with 4 inches of the latest type of mineral wool bats that are moisture-proof, fireproof, permanent. Most of the houses are gas heated, and according to McCarthy, a complete insulating job is of great importance—one of the most important factors in the sale of the house.

To demonstrate the difference in his wall construction from ordinary uninsulated or poorly insulated houses, McCarthy has built two wall sections which he puts on display in his model homes and which he uses in demonstrating the importance of a good and thorough insulation job to customers.

### **8 Requirements for Ideal Mineral Wool Insulation**

- 1. High resistance to passage of heat.**
- 2. Fireproof—absolutely stops fire.**
- 3. Permanent—must outlast the house.**
- 4. Light weight—stays in place.**
- 5. Impervious to moisture.**
- 6. Vermin proof—will stay that way.**
- 7. Low in cost.**
- 8. Easy to install—and at same time insures proper thickness and density.**



J. C. McCARTHY hands key to young bride about to start on honeymoon. Says he will have house ready when they return.

Because of the importance of adequate insulation in determining future heating and upkeep costs, many builders are adopting this practical method for demonstrating the difference between a thorough job and a halfhearted one. It is made necessary by the fact that so much cheap, shoddy and inadequate work has been done and passed off on the public under the guise of "insulated homes."

McCarthy further dramatizes the quality insulation job he does in his own residence, where a section of the wall has been left exposed. Practically every customer sooner or later ends up in the McCarthy home, which was one of the first built in the subdivision. Mrs. McCarthy takes the prospect through and points out types of equipment, wallpaper, period colors and other features in helping the owner make a selection.

Mrs. McCarthy is an important member of the firm, serving as secretary and treasurer of the company and taking an active part in handling much of the accounting and business end. As J. C. himself puts it, "I am the optimist and she's the pessimist." They have no outside salesmen, interview all prospects themselves and sell them on the basis of a friendly, practical understanding of what goes into the house. They invite a prospect who is at all dubious to bring along any relative who may be a builder or otherwise interested in the construction field to go to inspect any of the houses under construction. "People in this town don't go for looks alone," declares McCarthy, "they want to know what's inside, and they want it good."

Included in the quality products he uses are Weyerhaeuser 4-Square framing lumber and end-matched sheathing, Johns-Manville superfelt 4-in. mineral wool bats, Kohler plumbing fixtures, Bryant gas-fired winter air conditioning systems, Ruud hot water heaters, Robertson Art Tile, Keystone shower doors, Frantz Over-the-Top doors, Signal electric kitchen fans. Kitchen and bathroom walls are finished in Johns-Manville decorative asbestos Flexboard. Basement playrooms use the new J-M insulating board planks with glazud finish and lightning concealed joint. In his construction operations, McCarthy uses two Porter Cable K-88 electric hand saws, to reduce cutting costs.

McCarthy is a firm believer in word-of-mouth advertising, and the basis for that is the satisfactory performance and low upkeep costs of the houses he builds. By doing a complete and thorough insulation job—and selling the value of this job to the public—he achieves low heating costs. Frequently the customer's bills run considerably less than the advance estimates of the gas company. He gets a record of the actual heating bills paid by persons living in the development and shows them to prospective customers and further invites them to check the bills by talking to the home owners themselves.

A group of the home owners in Glendale are organized in the Glendale Civic Club, one purpose of which is to keep taxes down and secure further public improvements. McCarthy takes an active part in this  
*(Continued to page 86)*

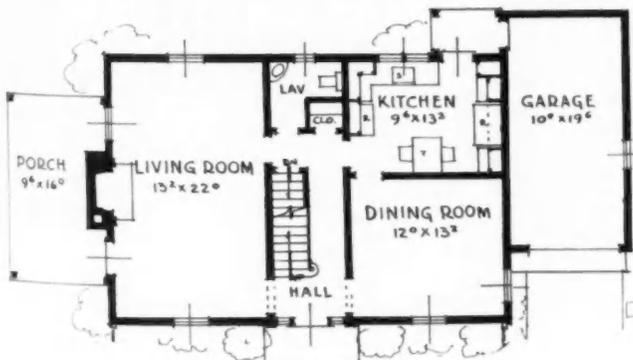


THIS thoroughly insulated McCarthy-built model home sold a few days after the opening, and is now being duplicated, with a few minor changes. The house is 23'6" x 46' overall, gas heated, and fully insulated with 4" superfelt bats.



"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 120 lin. ft.; Trench Walls, 102 lin. ft.; Basement Floor, 790 sq. ft.; Garage Floor, 220 sq. ft.; Excavation per ft. deep, 36 cu. yds.; Outside Walls, 25.60 sqs.; First Floor, 8.46 sqs.; Second Floor, with fin. flg., 8.46 sqs.; Attic Floor, without fin. flg., 4.20 sqs.; Ceiling, 10.46 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 14.00 sqs.; Hips and Valleys, 16 lin. ft.; Cornice, C & F, 158 lin. ft.; Cornice, 6", 62 lin. ft.; Partitions, 218 lin. ft.;

Inside Finish OS Walls, 230 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 2 opps.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opps., 20 opps.; Windows and Casements, 27 opps.; Gable Sash and Louvers, 3 opps.; Chimney, 37 lin. ft.; Main Stairs, 1; Porch Floor, 2.12 sqs.; Porch Ceilings, 1.55 sqs.; Porch Beam, 45 lin. ft.; Porch and Balcony Post and Newels, 7; Porch Roof, 2.17 sqs.; Porch Cornice, 49 lin. ft.; Porch and Deck Rail, 6 lin. ft.



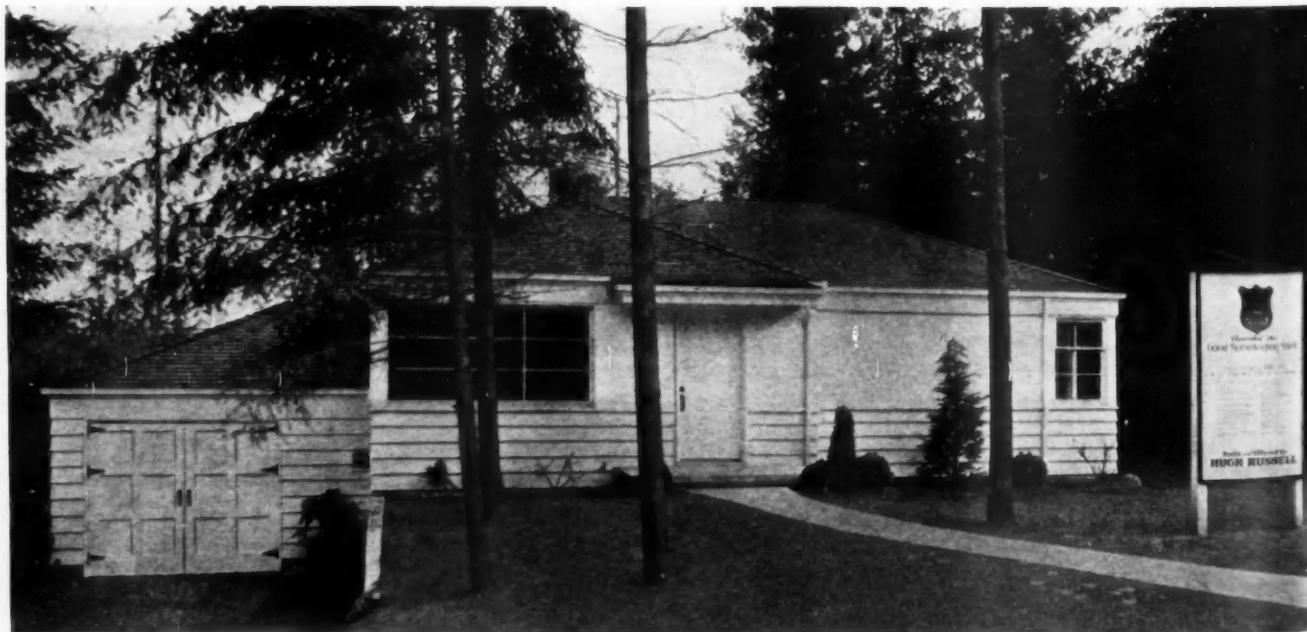
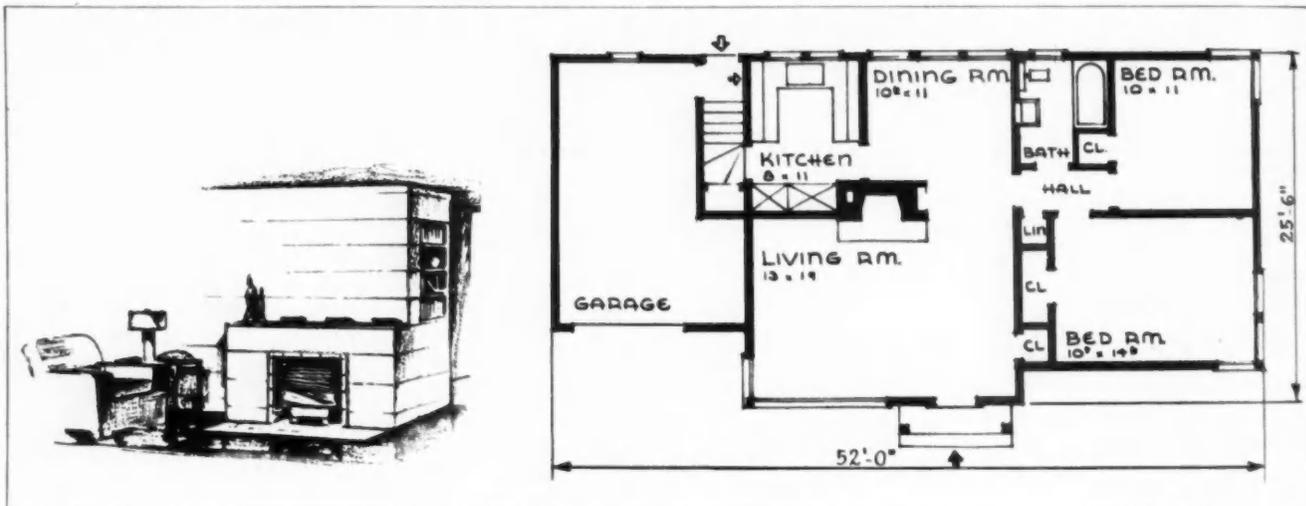
## Two Small Modern Homes from the Northwest

IN his Westover development, Seattle, Wash., Hugh Russell, nationally known home builder, has created a new type of model community consisting of five-room moderately priced homes placed on approximately half acre wooded lots. The clean-cut, modern exteriors fit well with the picturesque setting, and floor plans take advantage of the rolling countryside. Smith, Carroll & Johanson, architects who designed the houses, have incorporated many salable features in the interior arrangements.

The house shown below on this page is one of those planned with basement, the site dropping off to the rear, giving direct access to it through the garage with stairs leading up to the kitchen. Modern detail, as suggested in

the fireplace sketch, is carried out in large window areas, many of which are placed in the corners of rooms. Efficient kitchen arrangement, good circulation throughout the open plan without waste space, carefully planned wall areas for furniture placing and ample storage facilities are other features.

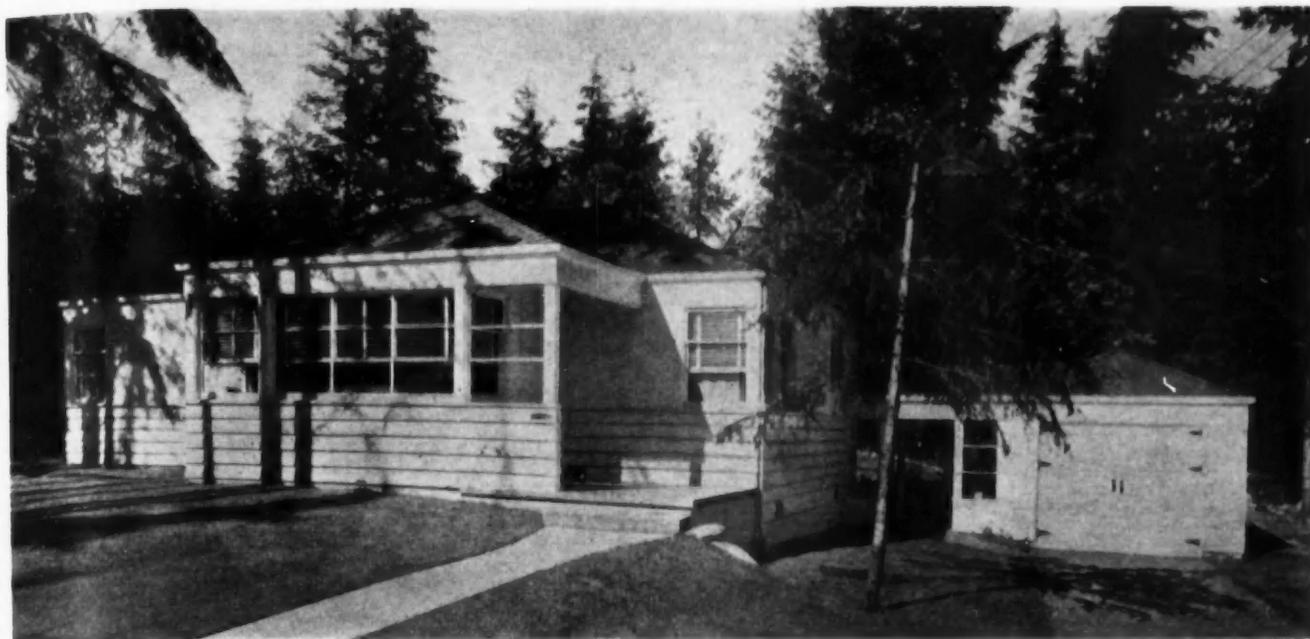
"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 175 lin. ft.; Garage Floor, 232 sq. ft.; Excavation per ft. deep, 36 cu. yds.; Outside Walls, 15.50 sqs.; First Floor, 9.35 sqs.; Ceiling, 11.67 sqs.; Roof Pitch, 6" rise per ft. run; Roof, 14.60 sqs.; Hips and Valleys, 156 lin. ft.; Cornice, C & F, 177 lin. ft.; Partitions, 148 lin. ft.; Inside Finish OS Walls, 124 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 14 opls.; Windows and Casements, 16 opls.; Chimney, 22 lin. ft.; Porch Floor, .32 sqs.; Porch Ceilings, .15 sqs.; Porch Beam, 12 lin. ft.; Porch and Balcony Post and Newels, 2; Porch Roof, .30 sqs.; Porch Cornice, 12 lin. ft.



areas,  
Effi-  
throughout  
ed wall  
facilities

Trench  
deep, 36  
ing, 11.67  
Valleys,  
; Inside  
og.; Rear  
Doors and  
mney, 22  
n, 12 lin.  
s.; Porch

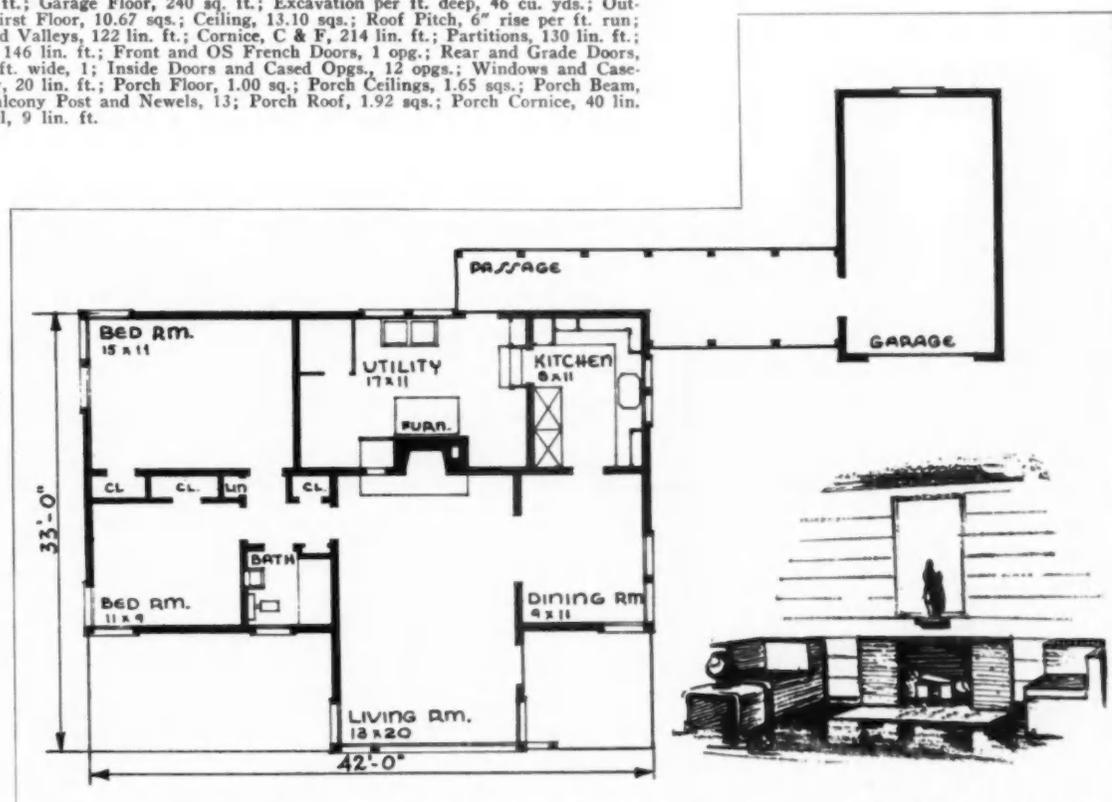
25' 6"



THIS house in Hugh Russell's Westover Addition of Seattle, Wash., is one of those planned with utility room instead of basement. Like the one on the opposite page, however, it takes advantage of the large rolling plot with the garage located to one side and connected to the house with a passageway. Room sizes are generous for this type of small house, and here again Smith, Carroll & Johanson have produced a very livable plan.

These Hugh Russell houses are built and equipped with the following items: Weyerhaeuser 4-Square lumber, Certigrade red cedar shingles and siding, Sloane-Blabon linoleum, Armco sheet metal, Standard Sanitary plumbing fixtures, Montag winter air conditioning systems, Hotpoint water heaters, Pratt & Lambert paints, Pittsburgh glazing, Square D circuit-breakers, Russell-Erwin hardware.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 226 lin. ft.; Basement Floor, 190 sq. ft.; Garage Floor, 240 sq. ft.; Excavation per ft. deep, 46 cu. yds.; Outside Walls, 20.80 sqs.; First Floor, 10.67 sqs.; Ceiling, 13.10 sqs.; Roof Pitch, 6" rise per ft. run; Roof, 15.40 sqs.; Hips and Valleys, 122 lin. ft.; Cornice, C & F, 214 lin. ft.; Partitions, 130 lin. ft.; Inside Finish OS Walls, 146 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 2 ogs.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 12 ogs.; Windows and Casements, 20 ogs.; Chimney, 20 lin. ft.; Porch Floor, 1.00 sq.; Porch Ceilings, 1.65 sqs.; Porch Beam, 34 lin. ft.; Porch and Balcony Post and Newels, 13; Porch Roof, 1.92 sqs.; Porch Cornice, 40 lin. ft.; Porch and Deck Rail, 9 lin. ft.

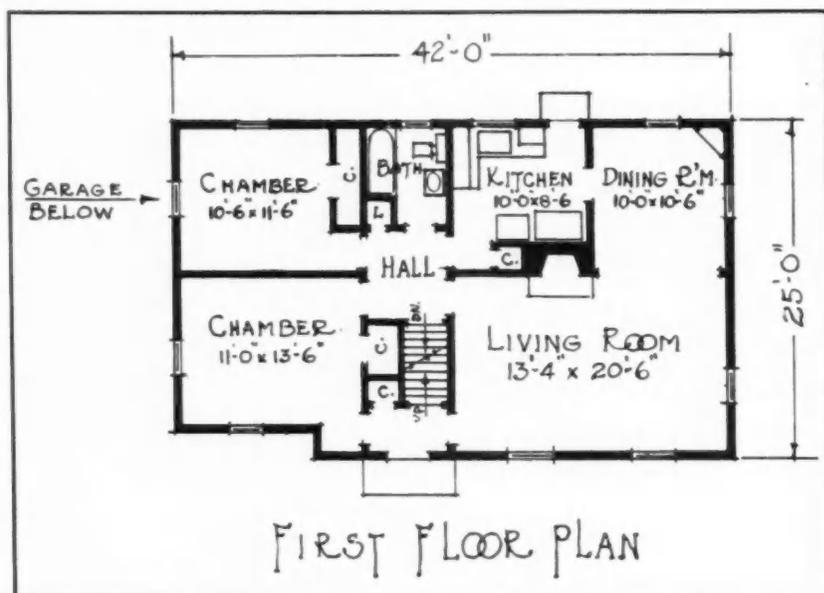




## 5-Room Cottage with Economical 42' x 25' Plan

A SIMPLE, rectangular plan makes this little Springfield, Mass., house economical to build. The living room, 13'4" x 20'6", is unusually spacious, and it appears even larger because of the wide opening into the 10' x 10'6" dining room. There are two good-sized bedrooms downstairs and space for additional rooms upstairs.

Materials for this house were supplied by the Hampden Lumber Co., Springfield, Mass., and it was designed by Architect Charles Rais, associated with the Hampden Lumber Co. The result is a house of good design but practical construction, which contributed to low cost.



"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 134 lin. ft.; Trench Walls, 22 lin. ft.; Basement Floor, 1,003 sq. ft.; Excavation per ft. deep, 44 cu. yds.; Outside Walls, 15.70 sqs.; First Floor, 10.30 sqs.; Second Floor, without fin. fig., 6.00 sqs.; Ceiling, 10.30 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 13.50 sqs.; Cornice, C & F, 163 lin. ft.; Partitions, 150 lin. ft.; Inside Finish OS Walls, 130 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opps., 16 opg.; Windows and Casements, 18 opg.; Gable Sash and Louvers, 2 opg.; Chimney, 24 lin. ft.; Porch Floor, .28 sqs.

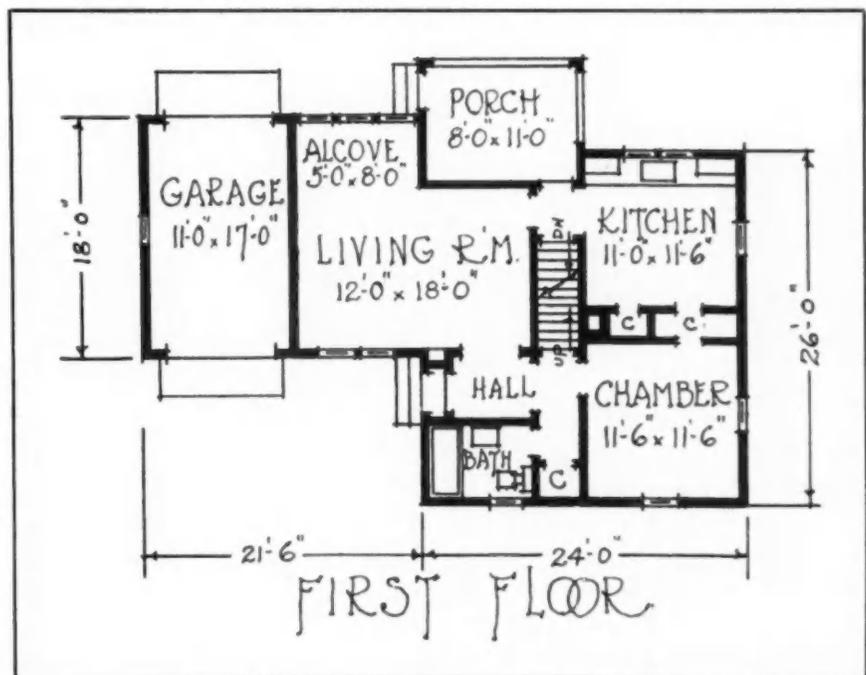


## In New England Tradition—Modern Plan

THE SPIRIT of old New England is evident in this charming Colonial built in Springfield, Mass., with materials supplied by the Hampden Lumber Co. It was designed by Charles A. Rais, architect, associated with the Hampden Co.

Of first interest is the large open living room with

alcove having a battery of windows overlooking the garden. There is only one bedroom and bath downstairs but ample space upstairs for several additional rooms. An interesting feature of the plan is the 2-way garage which permits the owner to drive straight through. Enclosed porch at rear is inviting feature.



"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 128 lin. ft.; Trench Walls, 40 lin. ft.; Basement Floor, 746 sq. ft.; Garage Floor, 216 sq. ft.; Excavation per ft. deep, 32 cu. yds.; Outside Walls, 16.80 sqs.; First Floor, 7.50 sqs.; Second Floor, without fin. fig., 3.12 sqs.; Ceiling, 9.66 sqs.; Roof Pitch, 9" rise per ft. run; Roof, 10.90 sqs.; Hips and Valleys, 40 lin. ft.; Cornice, C & F, 72 lin. ft.; Cornice, 6", 80 lin. ft.; Partitions, 122 lin. ft.; Inside Finish OS Walls, 124 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 2; Inside Doors and Casel Opgs., 12 opls.; Windows and Casements, 17 opls.; Gable Sash and Louvers, 2 opls.; Chimney, 26 lin. ft.; Porch Floor, 1.00 sq.; Porch Ceilings, .84 sqs.; Porch Beam, 20 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, 1.00 sq.; Porch Cornice, 30 lin. ft.; Porch and Deck Rail, 17 lin. ft.

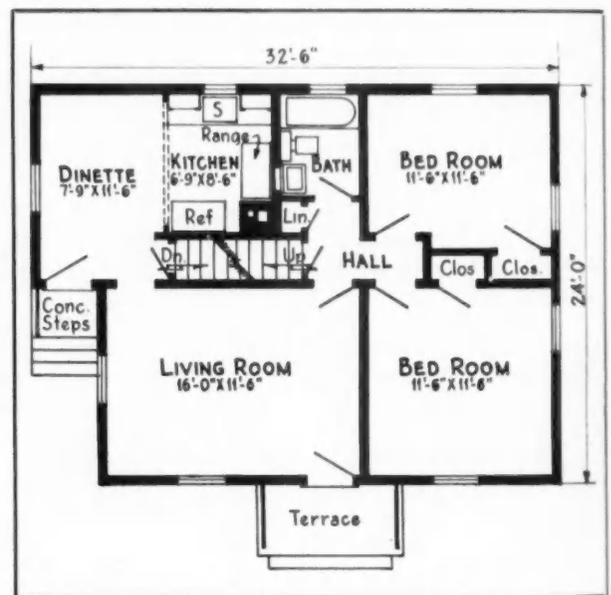


"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 113 lin. ft.; Trench Walls, 27 lin. ft.; Basement Floor, 707 sq. ft.; Excavation per ft. deep, 32 cu. yds.; Outside Walls, 15.20 sqs.; First Floor, 7.45 sqs.; Second Floor, with fin. flg., 0 sqs.; Second Floor, without fin. flg., 3.50 sqs.; Ceiling, 7.45 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 11.60 sqs.; Hips and Valleys, 12 lin. ft.; Cornice, C & F, 180 lin. ft.; Partitions, 106 lin. ft.; Inside Finish OS Walls, 109 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Casements, 10 opgs.; Windows and Casements, 15 opgs.; Gable Sash and Louvers, 6 opgs.; Chimney, 31 lin. ft.; Porch Floor, .78 sqs.; Porch and Balcony Post and Newels, 4; Porch and Deck Rail, 8 lin. ft.

## Low Cost Cape Cod—Plywood Interiors

THIS house is one of a group of nine recently completed in Louisville, Ky., for sale at a very moderate price considering the high class construction and equipment features. One of these features is the use of "Mengel-Bord," a new ¼-inch gum plywood throughout for interior wall finish, with consequent saving of time and labor. Even the walls of the bathroom were covered with this new plywood board, and are enameled except for a 9-inch strip of Lino-wall trim around the tub. The living room is paneled with red gum Mengel-Bord; the ceilings and walls of other rooms are done in unselected gum board and painted; two such rooms are shown below.

In plan, this compact little five-room house is only 32½ by 24 feet, including the projection of the dinette. Second floor space for another room or two is provided, is convenient to the hall connecting with the bath; in the dinette-kitchen service entrance and access to living room and basement are well placed. B. J. McCarry, New York, was architect.



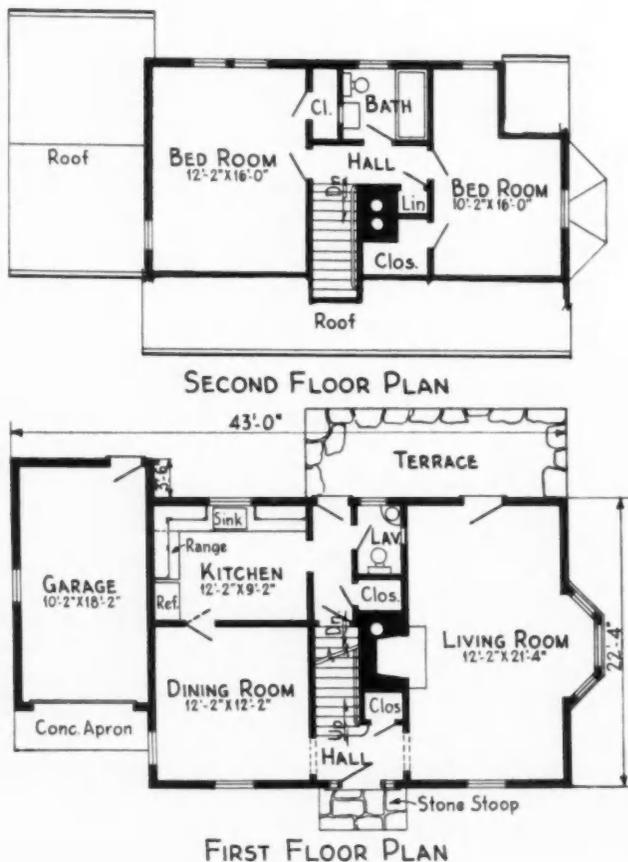




## Front Cover Home— A Compact Cape Cod with Attached Garage

WEATHERED, hand-split shingles give this little cottage a settled, conservative appearance; designed by Architect Arthur H. Esbig of Westbury, Long Island. With a cubage of only 22,000 cu. ft., the house provides five good rooms, bath and lavatory. It is built in Munsey Park.

Equipment includes a Bryant gas heater, Pittsburgh boiler, Stevens Root 1-pipe hot water system, Johns-Manville rock wool insulation, Armstrong linoleum, 1/2-inch Celotex plaster base, copper flashing and wood gutters lined with copper.



"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 112 lin. ft.; Trench Walls, 92 lin. ft.; Basement Floor, 672 sq. ft.; Garage Floor, 200 sq. ft.; Excavation per ft. deep, 33 cu. yds.; Outside Walls, 25.80 sqs.; First Floor, 7.35 sqs.; Second Floor, with fin. fg., 520 sqs.; Ceiling, 9.35 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 12.80 sqs.; Hips and Valleys, 10 lin. ft.; Cornice, C & F, 222 lin. ft.; Partitions, 205 lin. ft.; Inside Finish OS Walls, 200 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 2 opps.; Garage Door 8 ft. wide, 1; Inside Doors and Cascd Opps., 14 opps.; Windows and Casements, 23 opps.; Gable Sash and Louvers, 1 opg.; Chimney, 34 lin. ft.; Main Stairs, 1; Porch Floor, 1.62 sqs.



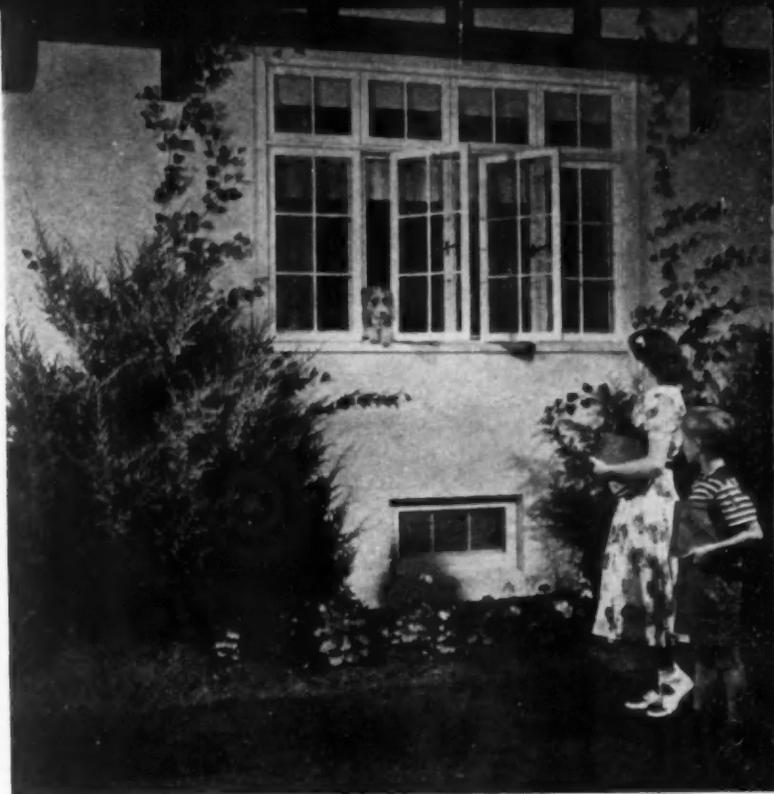
# IMPROVED UNIT WINDOWS

## How They Contribute to More House for the Money

**S**OME of the newest ideas in home building for cutting costs and increasing quality apply to *windows*—and that is fortunate since the public taste seems to be more and more toward glass, cheerful interiors and sunshine. We are all getting to be sun-worshippers—in the home and apartment, as well as on the bathing beach; and windows, windows and more windows are being called for.

Now a window is a complicated thing of many parts and of considerable cost, both for materials and for labor. Along with doors, it is the only movable part of a home. It has to be built to withstand hard use and at the same time to operate easily. It must let in the view and the light but keep out the cold, the noise and the dirt. It must admit fresh air on demand, but exclude all insects. It must be readily cleanable.

These are the essential service features of windows.



But, in addition there is also a very important architectural and decorative function. Windows are all-controlling to the outside appearance of a home; and, equally, the opportunities for happy inside decorative effects, including use of drapes, shades, Venetian blinds and the placing of furniture hinge directly on the size, character and placing of the windows.

All of this strongly emphasizes the importance of windows to the designers and builders of homes as well as to their owners and occupants. The added fact that windows are *permanent* features of the structure—not easily *renewable* like a heating plant or a wall covering—makes it doubly important to select them wisely and install them right in the first place. *Quality* in windows may cost a little more, but it's for the life of the building and will repay the owner many, many fold as time goes on.

As mentioned above, the window of today is complicated, composed of many parts—frame, sash, glass, putty, hardware, paint, weatherstripping, storm sash, screens—each an item of consequence and each involving labor cost to make, assemble and install. The old way was for the home building contractor to pick up these various items locally wherever he could, get them onto the job, and then proceed to make up, fit and place his windows. It was a long and costly process; and few realized quite how costly, because no accurate time and cost studies were made.

Today, however, the pressure on home builders to deliver "more house for the money" and the enterprise of many large industries to lower building costs have brought to the front the improved unit windows. These in many instances combine both window frame and sash all in one factory prefitted unit, ready to set into the rough opening without

THE typical window unit is delivered to the job completely assembled. Frame the opening in the wall the correct size, place the unit in the wall plumb, and nail securely; the complete installation is made.



additional labor on the job. These unit windows have been developed in wood, in steel and in aluminum; and all offer to the builder the substantial advantage of better design and construction at a lower finish-in-place cost.

### Windows Sell Homes

Analyzing the work of some of the country's most successful operative builders brings out the fact that they are practically designing their best selling house around its windows. In their most profitable homes the windows are something more than mere openings in the wall. They have a far greater role than that of letting in light and keeping out wind and rain and snow. They are utilized as one of the most effective of sales points in focusing attention of the prospect, whether he's a buyer or a renter.

In carrying out this window sales idea the builder should study the site on which the dwelling is to be constructed so as to plan the placement of windows in such a way that they can be made to utilize every possible advantage of the surroundings to make that home a more enjoyable place in which to live.

If the site is suburban:

1. Determine how a "picture window" or a corner window can be so designed for the living room, the dining room, the kitchen or the bedroom to frame some pleasing exterior scene.
2. Which way will the house face? It may mean considerable in what can be done with windows to utilize

**PICTURE WINDOWS** (above) decide many a home sale by framing a favorite view. Use of peach colored plate glass in the example illustrated adds beauty to the scene.

**CIRCULAR** dining room in Colorado; (below) with its feeling of spaciousness and cheer, is heightened purposely by generous use of plate glass full-length windows. The circular expanse commands a view of Pike's Peak. Note the full-length plate glass mirror at the extreme right, for utilitarian purposes, while adding light and spaciousness by catching and "bringing in" the outdoor scene.





A WALL OF WINDOWS (above) provides an atmosphere of hospitality and good cheer. An inviting sense of comfort and livability results from the distinctive arrangement of the furniture, made practical by the utilization of a "window wall."

KITCHENS of today (below) have "IT"—no longer can the kitchen be considered the drudge spot of the house. It is being lifted to a new plane of beauty and utility. Here, for instance, a picture window over the sink provides a bright and cheery workroom for the housewife.



sunlight for more cheerful and interesting interiors.

3. In which direction do the prevailing winds blow? It may mean much in the interest of summer coolness or winter warmth, especially if the specifications do not include an air conditioning unit.

#### Picture Windows

Now then, let's consider No. 1 again. Just what can be done about a view? Well, the architect or the builder, or both, should stand right on the site and study the surrounding landscapes. It might be a sweep of river, perhaps a winding creek, or a glimpse of land rolling away to the horizon. It might be in the immediate foreground, where a garden could be developed.

It might be a church spire; perhaps a glimpse of a beautifully shaded street; it might be just a tree.

Just a tree, you say? Well, a properly placed window framing a beautiful tree as a "living picture" for the wall so that its changing pattern from spring to fall and through the winter makes for a scene that is always stimulating may seem like a bit of silly sentiment. But just try it on that next dwelling. You might be agreeably surprised by the reaction of your prospect.

Ask yourself these questions:

What can a picture window or a corner window do for that living room? The site may make the answer negative. All right, how about the dining room? No? Well, now maybe a picture window or some corner windows will turn that master bedroom into a room of unusual possibilities. And a picture window over the sink or a



**STORM SASH** comfort (above) from accurately fitted unit windows. Today this health protection is not an afterthought but is provided in the window assembly as it comes from the manufacturer. **BELOW** is shown the modern inside storm window for wood casements. Manufacturers advise leaving them on the year round. They're installed in a jiffy. Complete with spring leaf weatherstrip, they swing with the sash.

corner window may be the means of lifting that kitchen to a new plane of beauty and cheer—the difference between a domestic workshop of drudgery and an inviting unit of the home where even dish-washing isn't simply a chore.

Many a housewife, shopping for a home, goes directly to the kitchen. A cleverly conceived window may open the way to clinching the sale.

Perhaps there are no inviting exterior views; perhaps it is a downtown apartment site where closely adjoining buildings or an objectionable view makes windows in that particular wall seem impractical.

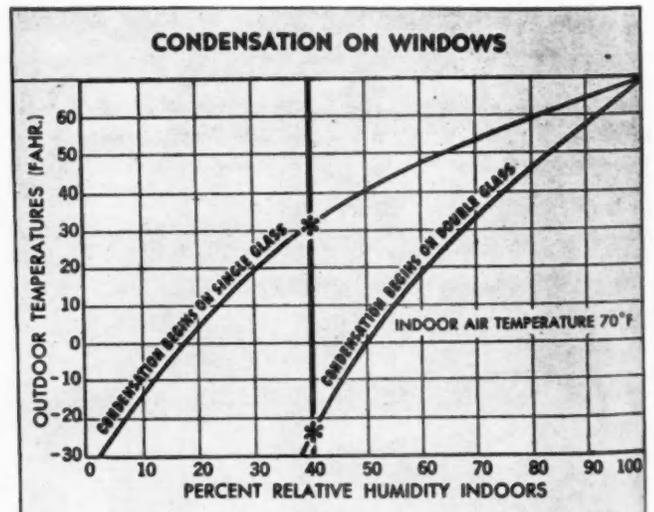
Those are not good reasons why windows should not be used, however. There are now a variety of pattern glasses, such as louvrex (so named because of the directional louvre-like lines) that exclude the exterior view but bring in light and provide interior decorative smartness. Similarly, there are other glasses, with satinol or sandblast finishes, for instance, that bring in light while completely obscuring vision and thus providing both privacy and light. Often, artificial illumination by day can be eliminated by the judicious placing of such window areas where vision is either unnecessary or undesirable.

Once the windows have been planned for the best possible utilization of exterior landscape possibilities, with resultant interior advantages, or in utilizing window areas to obtain light and decorative values while assuring privacy or to exclude objectionable exterior views, thought should be given to types of flat glass now available to gain any one or a combination of specific advantages.

Where there is a landscape to be "captured" for the wall, leaded windows, of course, should be discarded in favor of one large pane of polished plate glass, clear or in any one of several tinted plate glasses, such colors as blue, peach or gold adding a richness to any scene.

### Window Conditioning

The trend to larger window areas, often whole walls devoted to glazing, has been greatly accelerated by window conditioning, now that old-style storm sash have been modernized and profit double-pane sash have been



**THIS CHART** shows that "Window Conditioning"—Double-Glass Insulation—prevents condensation and fogging of windows when a healthful humidity of 40 per cent is maintained indoors until the outside temperature reaches nearly 26 degrees F. below zero. In such severe weather it is difficult to maintain 40 per cent relative humidity; therefore, condensation rarely ever appears on windows in the "Window Conditioned" home.



IMPROVED WINDOWS with "Aklo" plate glass that absorbs heat while transmitting ample light. This photograph shows a picture window in a California residence. The sun's heat rays are stopped while the shorter light rays pass through.

developed. The comfort, fuel-saving and health advantages are so obvious that many builders have come to look upon window conditioning as a definite sales factor.

Window conditioning is double-glass insulation. Like all other forms of building insulation, it pays for itself in fuel savings alone. And because window conditioning costs less than other desirable forms of insulation and saves more fuel for each dollar invested, it is the first step to take toward winter comfort.

It is an established scientific fact that, during the heat-

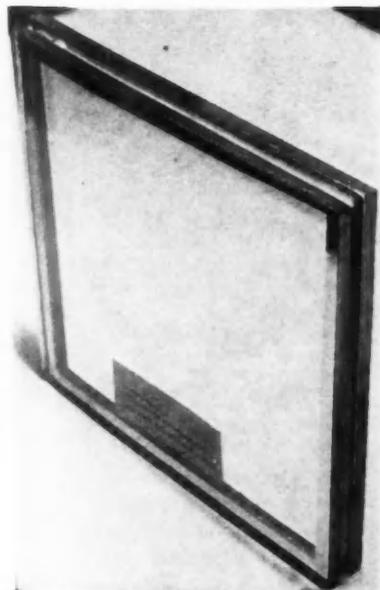
ing season, heat losses occur through uninsulated windows and doors as well as through uninsulated walls, roofs and floors.

Window conditioning will save approximately 23 per cent of the fuel used in the typical uninsulated suburban residence, according to the results of a study of four representative houses in Metropolitan New York, made by Alfred J. Offner of the American Society of Heating and Ventilating Engineers. These calculations were based on the use of outside storm sash and storm doors on all openings or the equivalent use of modern double-glazed (weatherstripped) casement windows instead of ordinary windows.

If these houses had been well insulated before they were window conditioned, Mr. Offner's figures show that of the remaining fuel cost for an insulated house, window conditioning would save from 30 to 36 per cent.

Climaxing this recognition of the value of window conditioning and following upon the heels of a movement toward larger window areas and window walls, comes a revolutionary window development from the laboratories of a glass manufacturer. It is destined to open the way to many new methods in window construction and in furthering the trend to open up solid wall areas for more light.

This development is in the form of a product known as Thermopane, a double-glazed unit which, by bonding two panes of glass with metal to form a tight seal for the entrapped dehydrated air, provides what may well be called invisible insulation. In principle it is the same as storm sash or modern forms of prefit double-glazed window units. The difference lies in the fact that the air between the panes is utilized 100 per cent for non-conduction by virtue of the metal seal. This unit, available for any type of sash, culminates years of laboratory research.



"THERMOPANE," a new double glass from the laboratory of the Libbey-Owens-Ford Glass Co., is a sound and heat insulator.

### Quick Installation of Unit Windows

Here is told pictorially the modern money-saving method of installing windows. Ten minutes per opening installation time is common for these factory-fitted unit windows.



UNITS are delivered complete—frames are assembled, hung with precision-built, factory fitted, glazed sash, complete with weatherstrip and operating equipment.



SET UNIT in wall. Units are set in wall simply by nailing wide blind stop to studs. This type of overlapping joining insures a weathertight wall joint.



THE JOB is done—here is the installation seen from the inside, now all ready for trim. Labor costs are saved—a better job results.

### Preservative Treatment of Wood Windows Officially Sponsored

The latest Association bulletin carries this statement: "Believing that wood products, notably window sash and frames, are deserving of the continued respect of architects, contractors, jobbers, dealers and home owners solely on the versatile and unapproached qualities inherent in wood; and convinced that the claims and implications by which competitive sources have created a greatly exaggerated and erroneous impression regarding deteri-

oration of wood products through decay, the National Door Manufacturers Association has determined to take a positive stand against such claims.

"If decay, even in rare instances, is a menace to wood sash and frames—eliminate entirely the possibility of fungus or insect encroachment"—these words explain the aim of the Association.

"Research has demonstrated beyond any reasonable doubt that the latest preservation methods, properly controlled, minimize the effect of fungus and insect attack upon wood.

"All manufacturers of wood products are eligible to use the Association Seal of Approval as long as the formulae and methods of treatment they use meet the exacting standards of the association.

"Periodic inspections are rigidly enforced and all technological questions are promptly referred to the Committee on Toxic Preservation, comprised of the leading authorities in that field."

### RECOMMENDED SPECIFICATIONS

Architects, builders, and owners who desire assurance of dependability in preservative treated millwork products are urged to incorporate the following in their specifications: "—\*shall be preservative treated in accordance with the Preservative Minimum Standards of the National Door Manufacturers Association and shall bear the N. D. M. A. Seal of Approval."

(\*Windows, sash and storm sash when pre-fitted, exterior frames, exterior doors, blinds, shutters or screens.)



MODERN WINDOWS take a chemical bath: The enemies of wood are known; so the quality window manufacturers use a chemical bath to protect sash and frames against termites and decay.

ABOVE is shown the official Stamp of Approval. Builders are cautioned to look for this seal on all complete wood windows. It shows that the chemical bath used has been approved by National Door Manufacturers Association as to the chemicals used and length of immersion in bath.

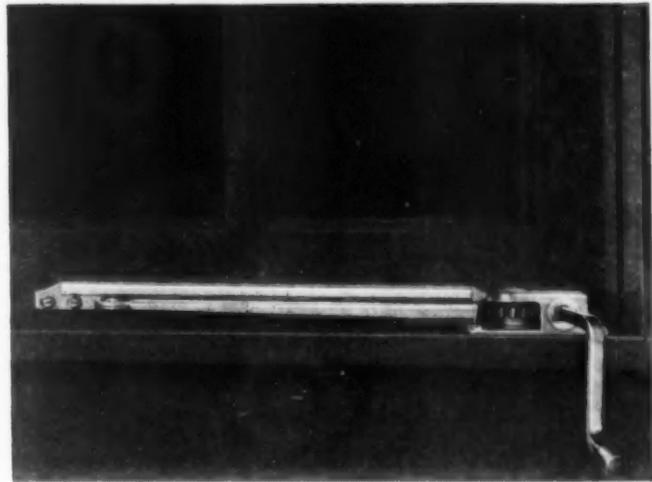
**"Seal of Approval" Widely Used**

An imposing list of woodwork manufacturers has adopted the recommendations of the Preservative Standards Advisory Committee of the National Door Manufacturer's Association, and has been licensed by the Association to brand products so treated with the N.D.M.A. Seal of Approval. Preservative solutions and treating processes of these licensees are checked by the Association to warrant constant adherence to the Minimum Standards. To maintain the integrity of the Seal, its application to windows and sash is limited to those which are prefitted before preservative treatment. Thus, the Seal is a warrantee to the consumer that the product upon which it appears has been effectively treated and that the treatment has not been weakened by trimming or fitting at the building site.

The following firms are now licensed to apply the N.D.M.A. seal of approval to preservative treated products as listed:

- |  |  |
|--|--|
| ADAMS-ROGERS COMPANY<br>Indianapolis, Indiana<br>A-B-D-E           | HURD MILLWORK CORPORATION<br>Medford, Wisconsin<br>A-B-C-D-E   |
| ANDERSEN CORPORATION<br>Bayport, Minnesota<br>A-B-D-E              | HUTTIG MANUFACTURING COMPANY<br>Muscatine, Iowa<br>A-B-C-D-E   |
| ANSON & GILKEY COMPANY<br>Merrill, Wisconsin<br>A-B-C-D-E          | HUTTIG SASH & DOOR COMPANY<br>St. Louis, Missouri<br>Jacksonville, Florida<br>Louisville, Kentucky<br>Charlotte, North Carolina<br>Columbus, Ohio<br>Knoxville, Tennessee<br>Dallas, Texas<br>Roanoke, Virginia<br>A-B-C-D-E |
| ATLANTIC MILL & LUMBER COMPANY<br>Baltimore, Maryland<br>A-B-C-D-E | MEMPHIS SASH & DOOR COMPANY<br>Memphis, Tennessee<br>A-B-C-D-E   |
| AUGUSTA LUMBER COMPANY<br>Augusta, Georgia<br>A-B-C-D-E            | MISSOULA WHITE PINE SASH COMPANY<br>Missoula, Montana<br>A-B-D-E   |
| BIRMINGHAM SASH & DOOR COMPANY<br>Birmingham, Alabama<br>A-B-C-D-E | NORTHERN SASH & DOOR COMPANY<br>Hawkins, Wisconsin<br>A-D-E  |
| WM. CAMERON & COMPANY, INC.<br>Waco, Texas<br>A-B-C-D-E            | ROACH AND MUSSER COMPANY<br>Muscatine, Iowa<br>A-B-C-D-E   |
| CARR, ADAMS & COLLIER COMPANY<br>Dubuque, Iowa<br>A-B-C-D-E        | ROCK ISLAND SASH & DOOR WORKS<br>Rock Island, Illinois<br>A-B-C-D-E  |
| COWSER & COMPANY<br>Dallas, Texas<br>A-B-C-D-E                     | THE T. H. ROGERS LUMBER COMPANY<br>McAlester, Oklahoma<br>A-B-C-D-E  |
| CURTIS COMPANIES, INC.<br>Clinton, Iowa<br>A-B-C-D-E               | SERLEY SASH & DOOR COMPANY<br>Minneapolis, Minnesota<br>A-B-C-D-E  |
| FARLEY & LOETSCHER MFG. COMPANY<br>Dubuque, Iowa<br>A-B-D-E        | SPOKANE PINE PRODUCTS COMPANY<br>Spokane, Washington<br>B-   |
| HYDE-MURPHY COMPANY<br>Ridgway, Pennsylvania<br>A-D-E              | WESTERN PINE MFG. COMPANY, Ltd.<br>Spokane, Washington<br>A-B-C-D-E  |
| JORDAN MILLWORK COMPANY<br>Sioux Falls, South Dakota<br>A-B-D-E    | WHITE PINE SASH COMPANY<br>Spokane, Washington<br>A-B-C-D-E  |
| KINZUA PINE MILLS COMPANY<br>Kinzua, Oregon<br>B-                  | WHITMER-JACKSON COMPANY<br>Buffalo, New York<br>A-B-C-D-E  |
| LONG-BELL LUMBER COMPANY<br>Kansas City, Missouri<br>A-D-E         |  |
| THE R. McMILLEN COMPANY<br>Oshkosh, Wisconsin<br>A-B-C-D-E         |  |
| GOSHEN SASH & DOOR COMPANY<br>Goshen, Indiana<br>A-B-C-D-E         |  |

**KEY TO PRODUCTS** on which Seal of Approval will be used. A—Prefit Windows, B—Frames, C—Doors, D—Screens, E—Blinds and Shutters.



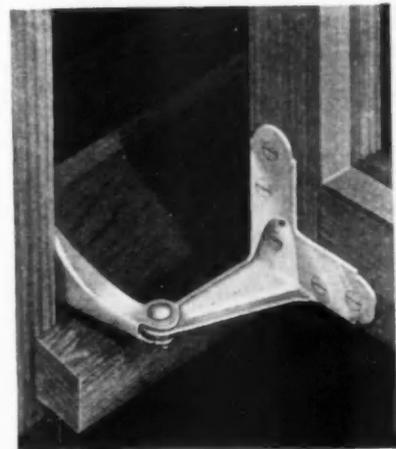
**Quality Hardware Means Quality Casements**

The Casement Hardware Company has for many years pioneered the cause of quality operators and other hardware items for casement windows, both wood and metal. Of the Series 26 "Win-Dor" operator as illustrated above over 300,000 are in use today. It is said to be the strongest standard size operator made. It fits all outswung casements 15" wide or wider; it may be used on either right or left hand sash without any change whatever; it may be installed with either close or extension hinges and it is applicable for casement control above the stool or concealed below it.

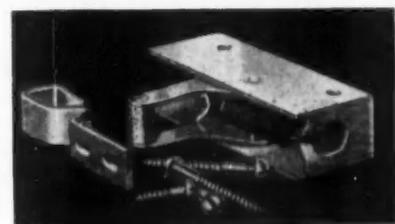
Also are illustrated the Casement Hardware Company's strong extension or "cleaning hinge" and its top-closer. The extension hinge (Series 75) is of the loose-pin type with bronze bushings and heavily plated in rust resisting cadmium finish. It extends the casements away from the frame 4" (when the sash is open) for cleaning the outside of the glass from the inside of the room as easily as the inside surface is cleaned. The automatic top-closer is installed in the top inside of the corner of casement window frames opposite the hinge side; it pulls the sash in snugly and tightly.

ABOVE: The "Win-Dor", strong worm and gear type casement window operator.

RIGHT: "Win-Dor" corner bracing cleaning hinge.



"WIN-DOR" automatic Top-Closer for casements and light doors.

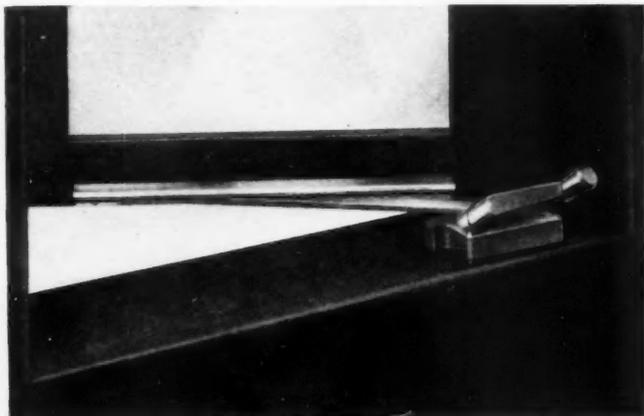


### Getty Internal Gear Operator

Casement windows, today, imply to everyone in the business a complete unit, including flat, fixed screens and complete operating hardware. It has taken a number of years to develop the present day, modern casement to its high degree of perfection.

Realizing the importance to casement window quality of the operating and locking mechanism, H. S. Getty & Co., Inc., set out to develop and perfect an entirely new casement operator known as their No. 4703 type. This device was produced using an *internal gear* and a worm tilted at an angle which permitted the crank to be permanently attached to the worm.

This type of operator became known to the trade as the

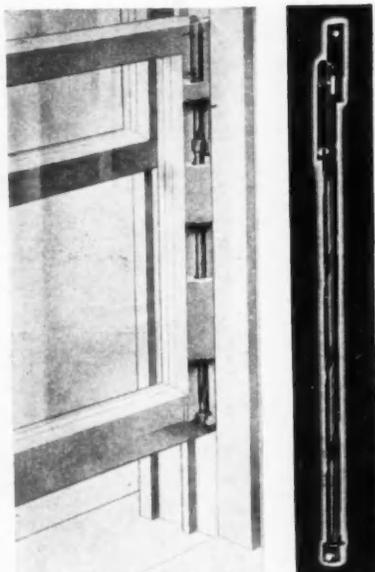


THE GETTY angle drive type casement operator.

"angle-drive" type and was popular from the first because the mechanism was "tucked away" in the cover of the sill and did not project out into the room area and did not take up any room on the window sill.

### New Spring Type Sash Balance

A new spring sash balance has been developed by the Grand Rapids Hardware Company, known as the "Grand Rapids Invisible." More than three years were spent in its development. This new balance is invisible in that the entire unit fits into a grooved side stile and moves with the sash. The only exposed part is approximately 1" of the brass bearing arm when the window is closed. The mechanism is an oil tempered spring, completely enclosed in a spiraled tube operating with a brass bearing arm on the worm gear principle. There is only one moving part. Because the spring is enclosed in the steel tube there is no possibility of its ever flexing out of position.



NEW "Invisible" spring type Sash Balance perfected by Grand Rapids Hardware Co.

The new balance is made in 23 sizes to meet all requirements up to glass size 48" high by 54" wide. Ten of these sizes are said to cover 85 per cent of the usual residential requirements.

Another recent addition to the Grand Rapids line is the No. 155 Overhead Pulley for narrow trim. This has proved exceptionally popular for residential construction. It is used in combination with flat weights, and the manner of its installation assures least possible air leakage plus permanent rigidity.

### Pullman Sash Balances

The new Pullman Unit sash balance developed by the Pullman Manufacturing Company is rapidly replacing weights and cords in double hung windows. Builders favor them because of their new adjustable feature which will permit changing tension of the inside coiled spring, guaranteeing easy and perfect operation at all times without removal from window by means of an ordinary screw driver—impossible with any other known type of adjustment. It is the most radical and important improvement in spring sash balances in 40 years.

These balances permit the builder wider scope of design, narrower trim, elimination of weight pockets and costly box frames.

Narrow mullions are made possible by the overhead type of balance. There is no leakage of cold air. They are quiet and smooth in operation—no rattling weights or squeaking pulleys; a self contained unit—a weight, cord and pulley all rolled into one. Quick installation—10 to 15 minutes per window. Guaranteed for the life of the building against imperfect workmanship or material.

### Caldwell Sash Balances

For over forty years Caldwell Sash Balances, product of the Caldwell



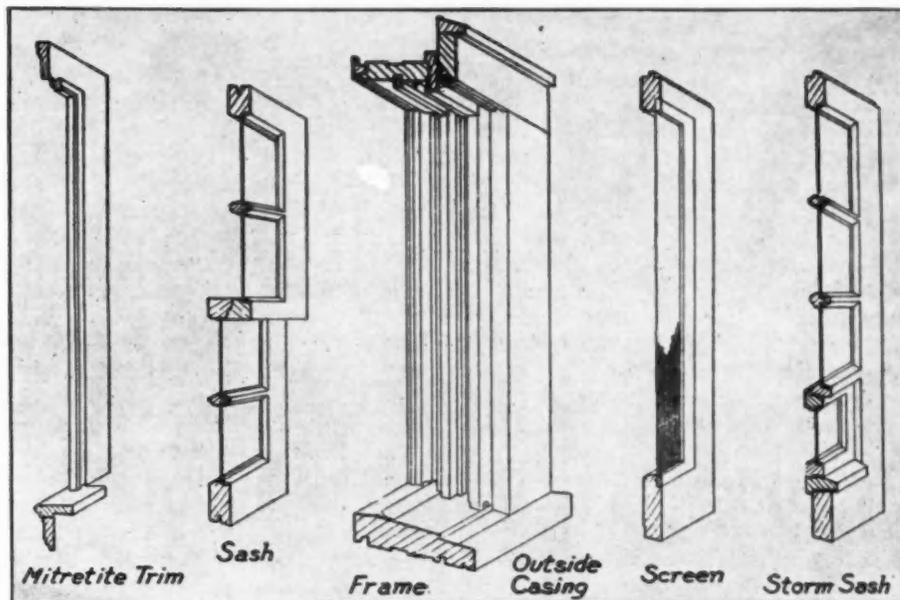
POPULAR type Sash Balance both with unit window shops and for carpenter assembly on the job.

Manufacturing Co., have stood the test of time and service. Millions of them have been installed in all types of building construction, for use with every style of double hung window. They eliminate box frames, sash weights, cord, chain and pulleys, increase the amount of glass and light, as well as speed up installation.



NEAT, inconspicuous appearance favors sash balance use.

FRAME, sash, trim, also storm sash and screen, have been harmonized into a single window unit by Curtis with "Silentite." Each part is prefit at the factory and is carton packed.



### Curtis "Silentite" Windows

In 1932, Curtis Companies Incorporated introduced the first modern, prefit, fully weatherstripped complete window unit. They called it "Silentite"—the "Insulated" window. The complete unit consists of frame, sash, "Mitertite" trim, screen and storm sash—each priced separately. Seven years of use under all conditions and in all climates have demonstrated the following characteristics of this double hung window unit: A strong wood window unit to suit any architectural style and provide modern beauty with narrow trim and mullions. Large saving in installation costs because of accurate prefitting at the factory. Sizes of all parts of the complete unit are controlled to insure lasting satisfaction and performance. Specifications, purchase and installation are simplified because one basic frame fits all types of wall construction. Free, easy operation the year 'round is a result of perfect fit and a co-ordination of the sash with a new type of "Metalane" weatherstripping; which means weather-tightness and great reduction of heat leakage. Air infiltration is prevented between window and frame and frame and wall, thereby making heating plants more efficient, more economical, and aiding air conditioning. All frame parts and windows are thoroughly treated in a laboratory-tested, decay-resisting toxic dip. Tempered non-corrosive steel springs replace weights. Full metal-to-metal contact between sash and frame assures permanent, easy operation with accurate compensation for expansion and contraction of wood.

Prefit storm sash and screens are available for all "Silentite" window units. Installation costs are lowered and permanent fit is assured. They are quickly hung from the inside, have simple hardware. The "Protectorvent" storm sash allows better control of ventilation, plus the advantage of being able to introduce fresh air at either top or bottom without moving storm sash itself.

The Curtis "Silentite" wood casement employs some new ideas in design and construction. It is a complete prefit casement unit which may include operating hardware, screens, and insulating glass (each item priced separately), and also is equipped with efficient "Metalane" weatherstripping. It is a self-locking tamperproof sash that operates only from inside, and that without disturbing screen or insulating glass. Its sash adjuster is easy to operate and is placed at medium height. This casement is easily cleaned from the inside.

This new casement sash operates entirely differently from other casements. There are no hinges. The sash "floats" open to a 45-degree angle which permits full entrance of air. Sash adjuster provides great opening pressure. There is no hardware protruding either inside or outside—the sash adjuster is removable. A worm acts directly upon the operating chain to eliminate any rattling or swinging. The adjustable brake locks the sash in any position. The chain is guided to a concealed position within the frame.

Curtis heartily recommends the inclusion of insulating glass with the "Silentite" casement window. This glass takes the place of the storm sash used with double hung windows and cuts heat loss through the casement window by more than half. Special and improved screens have been developed for use with this casement unit. Screens and insulating glass are priced separately.



CURTIS "Silentite" double hung windows with prefit "Protectorvent" storm sash in place. Note narrow mullions which give streamlined effect. "Silentite" fits any wall construction—is made in all commonly used sizes. Sash available in several styles.

**Andersen Casement Windows**

Among the pioneers in complete unit windows of the casement type is the Andersen Corporation. It has developed and brought into wide use a complete unit including frame, sash, hardware, screen, double glass, weatherstripped, factory fitted and treated. The Andersen casement is an improved wood casement window that successfully combines the advantages of weathertight wood construction with the beauty of modern, narrow line design. It harmonizes pleasingly with all types of architecture and gives added charm and value to any building in which it is used.

The leakproof frame is made of clear pine, chemically preserved. Narrow mullion posts, transom bar and exterior moulding provide modern lines and permit large glass area. Standard design is suitable for all types of wall construction and any kind of interior and exterior wall finish.

Inside wood stops, mullion casings, and transom bar

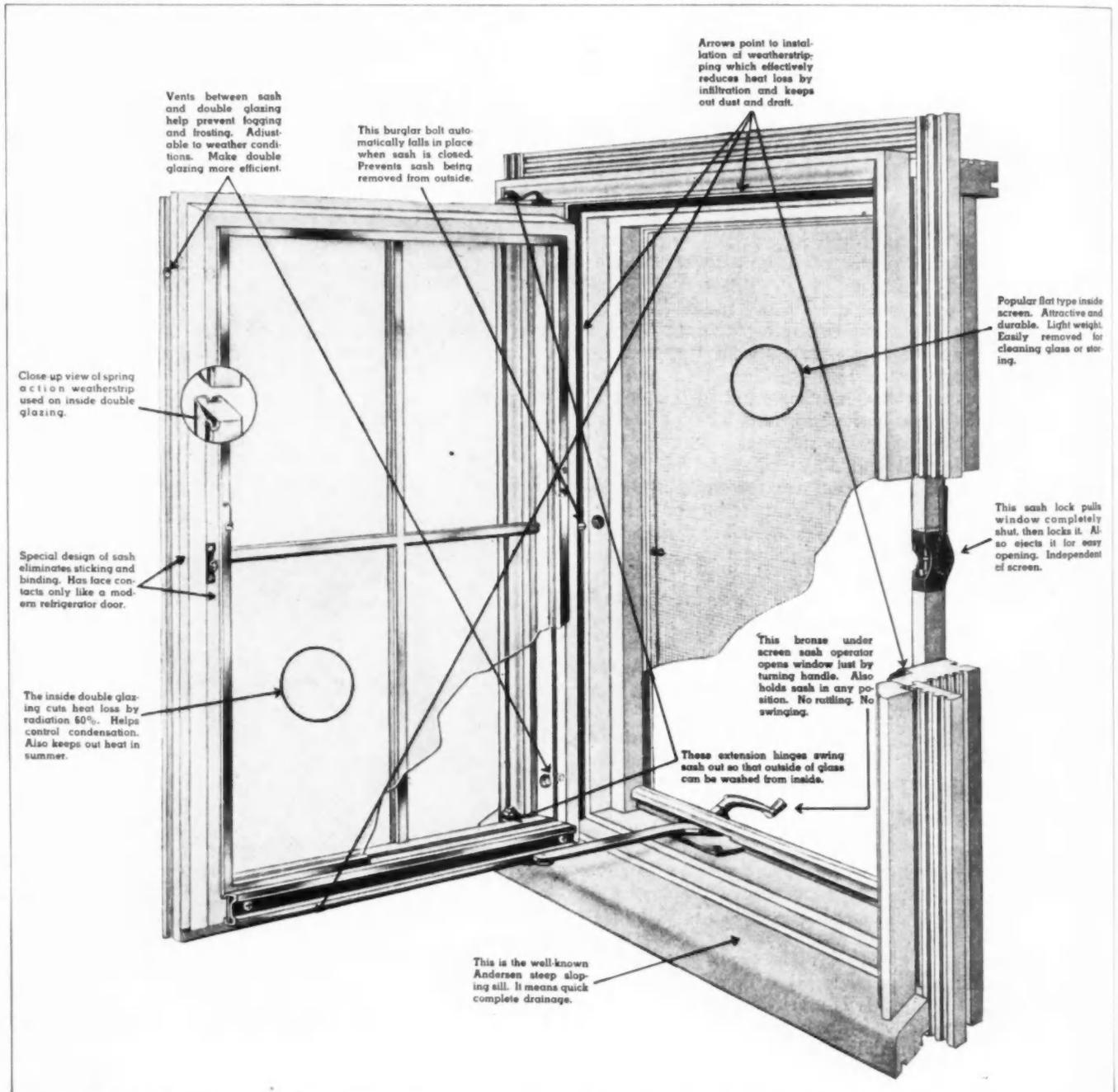
casings of pine or hardwoods are included in the unit.

The improved sash are designed to prevent sticking or binding and provide two point contact, and are factory fitted and glazed with either DSA or SSA labeled glass. Dividing or muntin bars are either solid aluminum (Style A), which are easy to clean and require no finishing, or attractively designed wood (Style W). Sash with horizontal muntin bars only or with special leaded glass panels can be furnished on order.

Andersen weatherstrips insure a tight seal under most severe weather conditions. This improved weatherstrip is an outstanding development in casement construction.

Infiltration tests made at the University of Wisconsin show an air leakage of only 2.5 cubic feet per hour per foot of sash perimeter with a wind velocity of 10 miles per hour. The American Society of Heating and Ventilating Engineers in a recent bulletin reports an infiltration of 15.5 cubic feet for the average weatherstripped double hung window under the same conditions.

Complete hardware is furnished, including extension



THE ANDERSEN wood casement unit cut away and diagramed to show its special features of design and construction.

hinges of cadmium plated steel with brass bearings, under screen sash operators, a choice of two designs, the worm gear type with solid bronze housing and handle, and the bar type, in steel, bronze finish over cadmium plating. The locking latch has a solid bronze handle; closes sash tightly; locks it securely, independent of screen. Automatic ejection of sash insures easy opening.

An inside screen is supplied, fitted and ready to slip in place with spring bolt fasteners attached. It has a solid aluminum frame with 16 mesh aluminum wire cloth, or wood frame (pine) with 16 mesh bronze wire.

Removable double glazing fits on the inside of the sash. It has an aluminum frame and spring metal seal, and is glazed with DSA labeled glass. It is easily and quickly slipped in place or removed from the inside, and may be left in place the year 'round.

**R. & M. "Embassy" Unit Windows**

"As you build today look toward tomorrow" is the sound advice in regard to windows that the Roach & Musser Co. is giving to builders in recommending consideration of its "Embassy" line of unit windows, both double hung and casement types. These double hung, factory-fitted window units have won an impressive preference among architects, contractors and building owners throughout the nation in a surprisingly short time. In addition to their smart appearance, they embody a combination of design and utility features which makes them valuable for all types of construction. Study and compare their details point by point as illustrated in the accompanying sketches.

The "Embassy" casement units have been developed in response to an increasing demand for modern casements embodying beauty, all-weather tightness, ease of operation, double glazing, screens and permanently sturdy construction, combined with slender-line design and oval, clean-easy division bars.

Both the double hung and the casement units are made of Ponderosa pine—toxic-treated. They come complete with frame, sash, hardware, screen, weatherstrip and double glazing insert. Slender-line design is used throughout with trim oval-shaped muntins.



"EMBASSY" casements two lights or more wide are easily cleaned from the inside of the building. Note that the hinges are fastened to stiles and rails to give the sash strength and prevent the possibility of sag.



"EMBASSY" Double Hung Details

**HEAD** jamb is completely metal lined. Metal lock strip enters groove in top of upper sash for complete all-weather seal. Metal never to be painted.

**SIDE** jambs are completely metal clad from inside stop to blind stop, grooved to receive metal covered parting stop. Sash move against metal and are slide-sealed to parting stop with special interlocking metal strips. Metal never to be painted.

**WHERE** check rails are cut away to clear the parting stop, the "Embassy" parting stop is provided with a metal dust pad to exclude dust and prevent draft.

**CHECK** rails are weather and dust sealed by means of improved type interlocking metal strips. Metal never to be painted.

**SILLS** are metal lined to full thickness of lower sash and provided with a lock strip which enters groove in bottom of lower sash to form all-weather seal. Metal never to be painted.

### "N.S.W." Means Non-Stick Windows

The N.S.W. Company offers a complete double-hung window unit. It consists of "plank" frame, glazed sash hung on overhead spring balances, the whole completely weatherstripped. Frames are primed and sash waterproofed ready for final painting and application of lifts and locks by the builder. This window is factory fabricated and fitted.

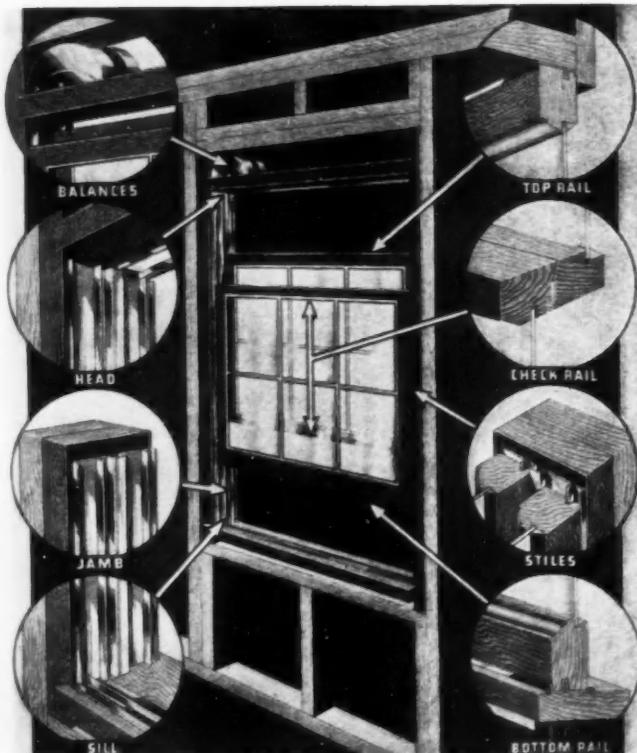
Primed frames are mill assembled. Weatherstripping is shop-installed; sash are machine grooved and fitted with predetermined clearances, dip impregnated with colorless waterproofing, glazed and hung on properly adjusted balances.

As desired, frames may be delivered and built in, after which factory fitted weatherstripping and sash can be installed and adjusted by the manufacturer; or the complete factory assembled glazed unit can be delivered ready to install.

Heavy, accurately formed, factory-fitted, non-corrosive zinc sash runs include parting beads, weatherstripping ribs and returns at blind and inside stops. At no point does sash contact wood.

Plank frames and completely housed spring balances eliminate entirely the so-called "elsewhere air leakage." Factory-installed weatherstripping and sash, mill-fitted and grooved permanently, reduce air infiltration to a surprising minimum.

Complete, factory-installed metal sash runs coupled with sash machined to accurate clearances assure non-stick operation. While weathertight, sash run so smoothly that only a single spring balance is required per sash. The sash are held firmly in the frictionless metal jamb sash runs and glide noiselessly in operation. There is no excess play to cause sash to rattle. The spring balances are noiseless when operating.



THE "N. S. W." non-stick window above shows the regular 2 x 4 in. window frame set in standard wood stud construction. This same frame unit with the addition of grounds is readily adapted to all other types of wall construction for both 1 3/8 in. and 1 3/4 in. thick sash.



### "Unipak" Wood Casements

The Farley & Loetscher Mfg. Co. has developed a factory fabricated casement unit which demonstrates a big saving in erecting and installing cost on the job. There are two steps in utilizing these windows the "Unipak" way. *First* set the *outer frame*. The outer frame only, consisting of the minimum parts necessary to frame the opening and having no direct relationship with the operation of the casement, is installed as the walls are erected. It has no finished jambs, mullion posts or transom bars. These are formed by inner units when installed later.

*Second* insert the *inner units*. Completely assembled and fitted—stationary units or prefitted sash with their surrounding frames, hinged and weatherstripped at factory, are installed, preferably after the plastering is dry, by merely driving a few screws.

This is the exclusive "Unipak" split-frame installation method that solves a vital construction problem, simply and without extra cost.

"Unipak" discards the old and customary method of installing the complete window frame with its finished jambs, mullion posts and transom bars and subjecting them to all the inherent abuses of the early construction period and plastering time.

### The R.O.W. "Spring Cushion" Windows

An entirely new principle in window construction is introduced by The R.O.W. Sales Co. Its R.O.W. window is so arranged that either or both sash are easily removed for cleaning or for 100 per cent summer ventilation. Zinc-alloy sash guides set into grooved jamb strips are held tightly against the sash by small steel coil springs. This provides a double-hung window that is easy and positive in operation. There are no cords, straps, pulleys, weights or balances; this new R.O.W. development is an achievement in simplified construction. Its very principle of operation, that of the floating zinc-alloy metal-covered sash guides, assures positive protection against infiltration, yet effects firm but easy operation.

Small steel springs, properly spaced and recessed into a heavy jamb, press the sash guides and weatherstripping against the edges of the sash creating uniform pressure for holding both top and bottom sash in any position.

"Pella Casements"

Rolscreen Company has developed the "Pella Casement"—a noteworthy service to the building industry. These casements are designed to blend into and emphasize the character of any style architecture. They will convey the impression of dignity and stateliness required for Colonial architecture, coziness for Cape Cod, breadth for Modern or Spanish and sturdiness for half-timbered English.

They are 100 percent factory fitted and completely assembled for practical and simple installation. After uncrating, they are simply set into rough wall openings, caulked and locked in place by means of inside interlocking fins. Weather-tight installation is complete in 20 minutes.

The "Pella Casements" have a wood lined steel frame. The rigid metal frames are of sixteen gauge rustproof, galvanealed (zinc impregnated) steel. They are full jamb width—5 5/8" wide; and they are made to fit all types of wall construction.

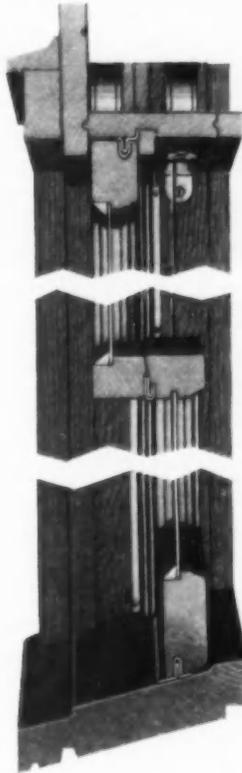
The wood used for lining "Pella Casements" is genuine white pine (*pinus lambertinus*); available, however, in other woods if desired. The choice of this wood for lining is the result of the Rolscreen Company's belief that the wood itself is the key to resistance of deterioration. In addition, the wood is specially treated to assure extra long wearing qualities.

The complete unit includes storm sash as part of the window for better insulation. Dual glazing consists of a removable, single panel of Libbey-Owens DSA glass set in a cadmium plated steel frame that is lined with live rubber. This panel is mounted on the wood sash with hinged clips and is easily removable. It is practically invisible. The vertical air space thickness is .87 inches for maximum insulation. Spring bronze weatherstripping is provided on all Pella units. It is a special compression type that paint can't clog. At the same time, tension can easily be adjusted.

The Rock Island "Uni-Glide" Windows

The Rock Island Sash and Door Works "Uni-Glide" is a completely assembled weatherstripped window unit. The windows are made in any of the popular designs and sizes and are adaptable to any type construction.

The weatherstrip is highly efficient due to the fact that



THE FRAME of the Rock Island "Uni-Glide" window unit is made so it can be used in any thickness wall by removing extension strip on the jamb. This enables the carpenter to reduce the jamb for use with various thickness wall coverings, or adding extension jamb for wall thicker than standard.

it stops air infiltration by maintaining a uniform metal to metal contact under all variable climatic conditions. It is self adjusting regardless of the degree of swelling or shrinking of the wood parts.

The windows operate freely for there can be no sticking.

The twin cable balance counterbalances the window perfectly as it pulls its portion of weight exactly at the same time on both sides of the window. This eliminates binding, sagging or pulling to one side.

The frames and windows are made of clear pine, rot-proofed and waterproofed with an approved solution. The toxic and repellent are colorless and will not interfere with any of the various types of finishes. This window unit is completely assembled, perfectly balanced, permanently sealed, chemically treated and waterproofed.



GRACEFUL and modern appearance of "Pella Casements" in a recent residential job in Washington, D.C.

SCHEDULE OF ROUGH OPENINGS AND MASONRY OPENINGS

STANDARD SIZES OF UNI-GLIDE WINDOW UNITS							
Glass Size	Sash Opg.	WIDTH (2 1/2" Mullion)			Masonry or Brick Opg.		
		Rough Single	Studding Mullion	Opg. Triple	Single	Mullion	Triple
12" glass	1-4	1-7 1/2	3-2	4-0 1/2	1-8	3-2 1/2	4-9
14" glass	1-6	1-9 1/2	3-6	5-2 1/2	1-10	3-6 1/2	5-3
16" glass	1-8	1-11 1/2	3-10	5-9 1/2	2-0	3-10 1/2	5-9
18" glass	1-10	2-1 1/2	4-2	6-2 1/2	2-2	4-2 1/2	6-3
20" glass	2-0	2-3 1/2	4-6	6-8 1/2	2-4	4-6 1/2	6-9
22" glass	2-2	2-5 1/2	4-10	7-2 1/2	2-6	4-10 1/2	7-3
24" glass	2-4	2-7 1/2	5-2	7-8 1/2	2-8	5-2 1/2	7-9
26" glass	2-6	2-9 1/2	5-6	8-2 1/2	2-10	5-6 1/2	8-3
28" glass	2-8	2-11 1/2	5-10	8-8 1/2	3-0	5-10 1/2	8-9
30" glass	2-10	3-1 1/2	6-2	9-2 1/2	3-2	6-2 1/2	9-3
32" glass	3-0	3-3 1/2	6-6	9-8 1/2	3-4	6-6 1/2	9-9
34" glass	3-2	3-5 1/2	6-10	10-2 1/2	3-6	6-10 1/2	10-3
36" glass	3-4	3-7 1/2	7-2	10-8 1/2	3-8	7-2 1/2	10-9
38" glass	3-6	3-9 1/2	7-6	11-2 1/2	3-10	7-6 1/2	11-3
40" glass	3-8	3-11 1/2	7-10	11-8 1/2	4-0	7-10 1/2	11-9

Glass Size	Sash Opg.	HEIGHT		Glass Size	Sash Opg.	Masonry or Brick Opg.	
		Rough Studding Opening	Masonry or Brick Opening			Rough Studding Opening	Masonry or Brick Opening
12"-2 ft	2-6	3-0	2-10 3/4	28"-2 ft	5-2	5-8	5-6 3/4
14"-2 ft	2-10	3-4	3-2 3/4	30"-2 ft	5-6	6-0	5-10 3/4
16"-2 ft	3-2	3-8	3-6 3/4	32"-2 ft	5-10	6-4	6-2 3/4
18"-2 ft	3-6	4-0	3-10 3/4	34"-2 ft	6-2	6-8	6-6 3/4
20"-2 ft	3-10	4-4	4-2 3/4	36"-2 ft	6-6	7-0	6-10 3/4
22"-2 ft	4-2	4-8	4-6 3/4	38"-2 ft	6-10	7-4	7-2 3/4
24"-2 ft	4-6	5-0	4-10 3/4	40"-2 ft	7-2	7-8	7-6 3/4
26"-2 ft	4-10	5-4	5-2 3/4				

**WEATHERING NOTE:** If sheathing is applied before setting the frames, be sure to allow for wide blind stop. Set sheathing back 1-3/8" from rough opening (or center of double stud) at sides. 3/4" back at header and flush with plate at bottom. These dimensions allow 1/4" play between blind stop and sheathing all around.

**SUGGESTION TO CARPENTER.** If you do not wish to set sheathing back from rough opening, single stud first, allowing for additional stud to be set after sheathing building. This applies to sides only.

CAUTION—DO NOT NAIL AT LOCATION OF BALANCES IN FRAMES.

### Kawneer "Sealair" Aluminum Windows

Most important window fact of recent years, according to The Kawneer Company, is that windows of aluminum or bronze construction—hitherto restricted to use in large residences and monumental buildings—are now available at relatively low cost and in standard sizes for all types of homes or buildings.

Known as "Sealair" all-aluminum (or bronze) windows, these complete factory-fitted units, both double-hung and casements, are of great importance to owners and builders because they cannot swell, shrink, or warp, are not subject to rotting or rusting, never require painting. Thus the qualities of these splendid non-ferrous metals, combined with simple, sturdy, effective "Sealair" construction, bring window advantages not before available.

An extremely low infiltration figure is produced by effective "Sealair" weathering, which means new comfort, cleanliness and fuel savings for the owner. In double-hung types, sash interlock with frame at head and sill, and with each other at meeting rail—with double contacts, felt to metal and metal to metal. At the sides a resilient, spring weathering and guide member is built into the sash—accurately fitted to the true, smooth metal surfaces, entirely concealed in and protected by the sash. This patented weathering member slides with the sash, leaves the one-piece jambs and sill clear—assures effective and lasting protection, free from complications of painting, rusting, swelling or shrinking.

In addition to fuel savings, other substantial maintenance savings are produced by elimination of painting and other upkeep economies—so that any slight difference in first cost is more than made up in a ten-year period.

Dependably easy action at all times is another result



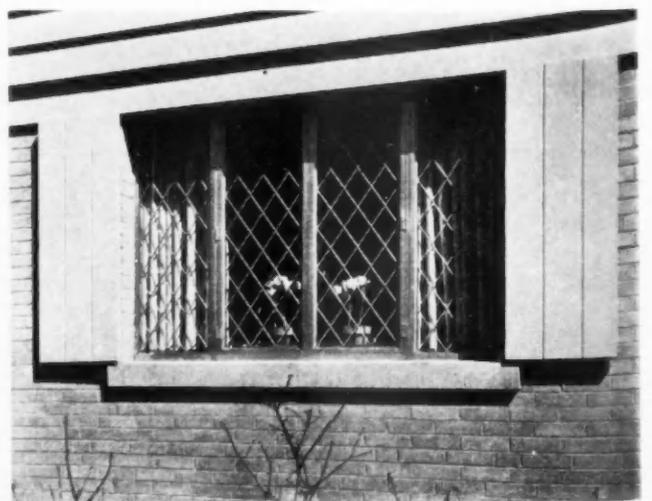
LOOKING OUT through a Kawneer all-aluminum window of the large pane, double hung type.

of "Sealair" construction and the nature of non-ferrous metals used. And the rich appearance of the splendid, natural satin finish means that they inevitably become one of, if not the most attractive features of any new home or building.

The steadily growing use of "Sealair" windows in homes, apartments, schools, hospitals, hotels, as well as in commercial, public, and monumental buildings is significant proof that they are now a generally accepted type, with advantages which assure continued growth in the future.



"SEALAIR" all-aluminum windows installed in Home No. 19 at the New York World's Fair 1939.



NEW "Sealair" casements used in Joern's "Life" house, La Grange, Ill., opened early in 1939.

# STEEL WINDOWS AND CASEMENTS

## Their Growing Use in Home Building

FOR domestic architecture, iron casements were first used in England in the 14th century. They were hung on pivot hinges direct to stone rebates. Until well into the Tudor period, they were glazed with horn, glass being too costly. Leaded glazing was in small, geometric forms, usually squares or diamonds. In the windows of the important houses it became the fashion to include heraldic emblems in the windows, containing the armorial bearings of the family.

Many examples of iron casements which have been in continuous use in old houses for upward of 400 years may be found in modern England. Notable houses of the 15th and 16th century include Charlecote, Westwood, Hardwick, Haddon, Kirby, and many others. Old cottages and farmhouses, too numerous to mention, stand almost intact in the counties of Kent and Sussex.

Today, in England, the casement-type window is used almost exclusively. In describing the reasons for this strong preference over "sash windows," an English writer states: "The casement yields all its area to the

double purpose of light and ventilation, and is controlled without effort." The choice of metal over wood construction is based on the observation that "the carpenter must ease wood windows from time to time."



DETAIL of a 16th century iron casement window in St. Andrew's Church, Hornchurch, Essex, in England. Note excellent condition even after almost 400 years of use.



RECENT photograph of iron casement windows which have been in constant service for about 350 years, in Emmanuel College, University of Cambridge, England.

### Use of Casement-Type Windows In Early American Houses

The windows used in the first houses of the early Colonies were wood casements. Many old houses containing wood casements have been studied in minute detail by architects. These include the Hooper-Hathaway house (1682), Salem, Mass.; the Abraham Browne house (1663), Watertown, Mass.; and the Paul Revere house (1676), Boston. Concerning them, a nationally-known authority, Frank Chouteau Brown, A.I.A., writes:

"Wood casement windows . . . were used in houses built as late as 1720 or 1725, in the large coastal towns or cities, and probably for another ten or twenty years in the more remote inland communities; while the newer Georgian double hung sash were gradually coming into use in different localities beginning about 1705 or 1710 and continuing over later years."

Thus, based on prior usage, casements, not double hung windows, are traditionally correct for houses designed after Early American styles. Casements were in universal use through the 17th century, while double hung windows did not appear until the 18th century.

The interest which many architects are taking in research study to authenticate the early Colonial craft styles and methods of construction is well illustrated by a sheet of measured drawings by Frank Chouteau Brown of the Col. Paul Wentworth house at Salmon Falls, N.H., built in 1701. These show that this house originally had small casements combined with mullion casements. Later, so it is revealed, double hung windows were added.



### Cutting the Builder's Costs With Steel Casements

In comparing the *installed* cost of a double hung wood window, *assembled on the job*, with that of a prefabricated steel casement, inexperienced builders fail to realize that a wood window of the "hand made" type requires no less than 25 pieces of material. These are: 1 frame, 2 sash, 3 pieces back band, 3 pieces trim, 3 stops, 1 stool, 1 apron, 4 pieces cord, 4 weights, 1 lock, 1 keeper, 1 lift.

The labor operations for installation include: erect frame, hang two sash, fit trim, fit stool and apron, glass and glazing, paint frame and sash, paint trim, paint stool and apron, attach hardware, refit sash. At the bottom of the depression, in 1933, when rates were low, these operations added a minimum of 60 per cent to the cost of the materials, and averaged much higher.

On the other hand, the lower *installed* cost of steel casements is due to two factors:

1. The first cost is low—often less than \$50 to \$60 for all the casements in a 4 or 5 room house. Steel casements are made in huge quantities by the larger manufacturers, by skilled workmen, using advanced tools and equipment, operating under ideal conditions. Important economies result, reducing the price to the builder.

2. The cost of installation is a small fraction of that of the "hand made" wood window. The steel casement reaches the job *complete*—fitted, hinged, hung, assembled—even Bonderized (for rust prevention) and primed. Time, labor and materials are saved.

LEVITT & SONS, the well-known builders of good salable residences at Manhasset, N. Y., have found that steel casements have a strong appeal to the home buying public. One of their popular models is illustrated above.

RESIDENCE (below) at Flint, Mich., which sells for \$3580.00. It was built by The United Builders Inc. and is equipped with "Fenestra" Steel Simplex HM Casement windows. Operative builders are able to control their window costs when such complete units are specified.





"FENESTRA" steel casement units dress up this house (above) for Levitt & Sons, Builders, Manhasset, N. Y. They report buyers are well sold on this type of window.

TRUSCON Series 138 Double Hung Steel Windows for Residential Construction are well illustrated in the photo below. Narrow mullions and meeting rails interrupt the view to a minimum degree.



### The Sales Appeal of Steel Casements

Among the principal advantages claimed for steel casement windows are the following:

1. Better appearance—slender steel frames and muntins, and attractive hardware.
2. More daylight—larger glass areas result from elimination of bulky construction.
3. Better ventilation—swing leaves open out, deflecting inward breezes blowing parallel to the wall. Many casements provide 100 percent opening, as compared to 50 percent opening, maximum, for double hung windows.
4. Easier opening—steel casements always open easily, even in wet weather, even when freshly painted.
5. Safer cleaning—glass is washed on both sides from inside a room. No sitting backward on the sill.
6. Superior weather-tightness—double contact of swing leaf against frame, with leaf drawn tight by powerful, cam-action lock. Precision-fitted at factory, steel casements stay fitted.
7. Better screens—bronze mesh in Bonderized steel frames, enameled, baked. Quickly, easily, safely attached on inside of casements. No marking or numbering.
8. Increased fire resistance; steel casements glazed with wire-glass retard spreading of fires through windows.
9. Lower upkeep cost—steel casements with Bonderized finish (for prevention of rust), are primed and baked at the factory. Field painting is added after installation.

**Some Recent Improvements  
In the Design and Manufacture  
of Steel Casements**

Casement windows made of iron, such as those in Cambridge University, in England, have been in constant use for 400 years or more. The durability of this type of construction is measured in centuries.

It remained, however, for "Yankee ingenuity" to develop and perfect the English-type metal casement for the American market. There were two incentives, chiefly:

The first was that the more rigorous American climate demanded tighter windows. American design of steel casements provides *double contact* of ventilator against frame, with a column of insulating captive air between contacting surfaces, extending the full perimeter of the ventilator. Precision manufacturing and fitting, combined with ingenious locks which clamp the ventilators tight shut, afford a degree of weather-tightness equalled to weatherstripped windows.

The second incentive for improvement derived from the higher standard of American living—the demand for near-perfection. Recent American developments are numerous and important. They include:

Inside metal screens which provide complete protection against insects. Windows are opened, closed, locked, without touching the screens. Screens are attached or removed, safely, in a jiffy. Marking or numbering is



STEEL windows ("Fenestra") on moving hooks are dipped in a series of preservative baths in the Bonderizing treatment.

not necessary—screens are perfectly interchangeable.

Inside metal-framed storm sash, often called "Insulating Windows" or "Winter Windows," provide a degree of tightness incomparably greater than is found with outside storm sash. The heat loss through windows is substantially reduced, and condensation on the glass is minimized.

Bonderized finish—for prevention of rust. This includes, in a series of continuous operations, the etching of the steel surfaces of the casement, in chemicals, to change them to non-metallic surfaces, next dipping sash into vats of special paint primer, which is then baked on. Field paint is added by the builder, to afford the color scheme desired. Thereafter, repainting is necessary only at long intervals. Maintenance savings are substantial.

**"Fenestra" Steel Casements**

"Fenestra" residence steel casements as built by Detroit Steel Products Company have several construction features of special interest. These include hot rolled steel weathering sections; hot rolled (not cold pressed) steel butts with bronze (not steel) pins and bushings; durable roto-adjusters attached to brackets welded (not screwed) to casement frames; locking handles of the cam (not latch) type, which draw vents tight shut; handle brackets hot rolled (not cold pressed), welded fast (not screwed) to frames; strong muntin joints interlocked with but 20 percent loss of metal (not 50 percent loss, as with mitered joints); rigid, clean butt-welded corners (no excess flash, no lumps); the complete window Bonderized, primed, baked, for prevention of rust; strong, economical, convenient screens, removed or attached in a jiffy without tools—bronze wire mesh in tubular steel frames Bonderized, enameled, baked.

A TYPICAL "Fenestra" Steel Casement Window with Inside Screen. Unit is a type 4426, which is 3' 1 1/2" wide by 4' 3 3/4" high. Note that one screen covers both ventilators. Casement operators work through the sill member.

**Truscon Residential Double-Hung Steel Windows**

The new Truscon series 138 residential double-hung steel window incorporates many special features. Of major importance, the sash members are of tubular construction. This adds greatly to the strength, durability and finished appearance of the window. Weights and cords are absent from this window. Operation is controlled by spring balances equipped with tapes of "Enduro" stainless steel.

Each window is completely factory weatherstripped with spring bronze. Careful and efficient workmanship in this phase of final assembly contributes largely to greater comfort in homes where these windows are installed. Due to the type of weatherstripping used, loose, leaky and rattling windows are avoided. Window maintenance is lessened accordingly.

Screening is easily and attractively accomplished through the inclusion of a rebate on the exterior of the window frame, which permits flush installation of screens and "Tempryte" insulating windows. One-half of the window may be screened, or the screen may cover the entire window.

Truscon residential double-hung windows are rust-resistant due to the Bonderizing process through which they pass at the factory. This process, used widely by automobile and home appliance manufacturers, was installed by Truscon Steel Company to produce an even finer paint finish on window and other products and offer greater resistance to the formation and progress of rust. Tests have demonstrated that following Bonderizing as practiced by Truscon, the baked-on priming coat of paint lasts from three to five times longer.

So that the fine finish on these windows might not become damaged in shipment or storage, Truscon packages them in heavy box-board cartons. Users are assured that windows delivered to the job are in good condition and ready for immediate installation. Should delay occur, the carton protects the contents from the elements or, if stored inside the building, from mortar, plaster or other substances dropped during course of construction. Of special interest is the fact that the Truscon residential double-hung window (Series 138)



RESTFUL CHARM of "Truscon" steel casements is well demonstrated by this library scene.

is shipped completely assembled ready for immediate installation in the opening.

Four window types in 24 sizes cover all requirements from clear pane upper and lower sash to many standard arrangements of vertical or horizontal muntin bars. Thus this new Truscon window lends itself to any type of architectural design.

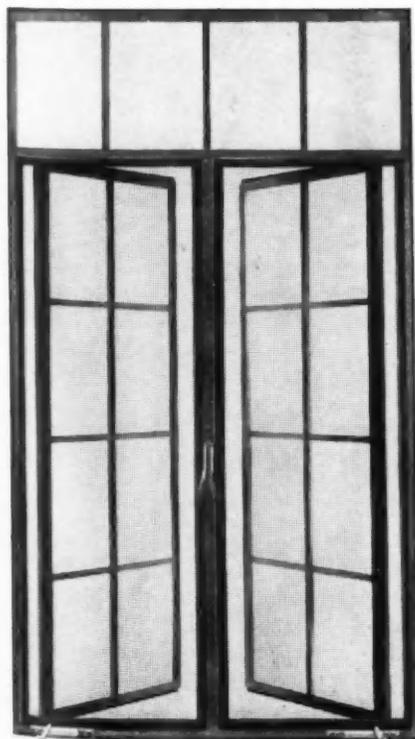
**Truscon Residence Steel Casements**

Five hundred and thirty-four standard types of Truscon Steel Series 5 residence casements permit widest range of design freedom and unlimited scope of window arrangements. Authentic departures from traditionally commonplace window designs are but one result. In combination with Series 138 residential double hung steel windows, distinctive window arrangements are possible without fear of excessive costs.

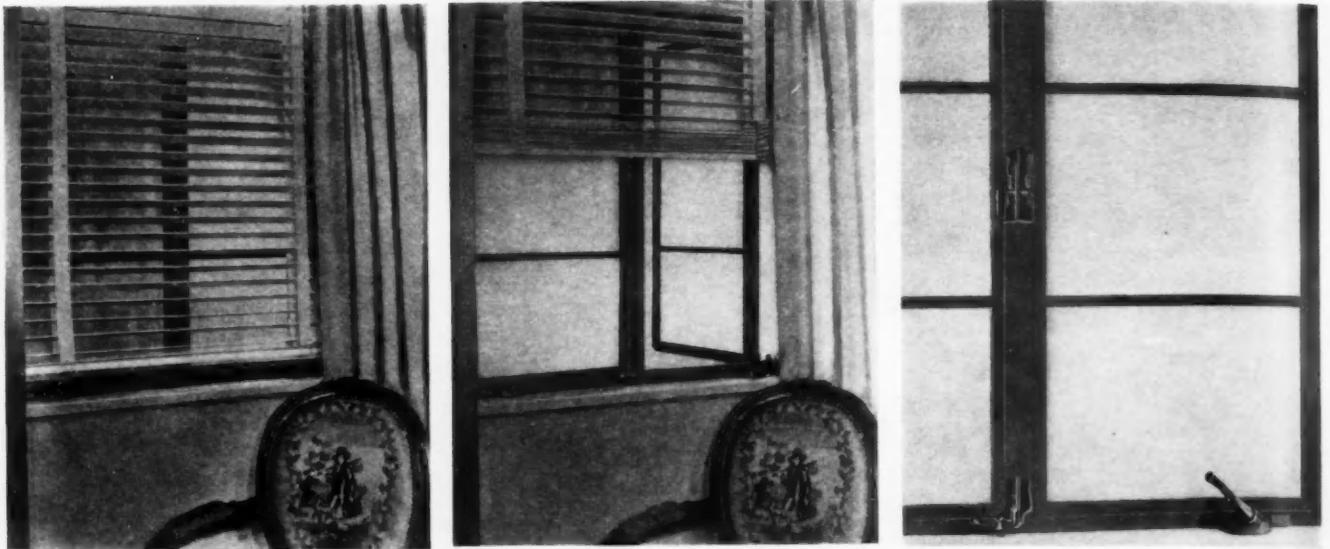
Truscon residence steel casements offer many outstanding advantages. Among the more important are:

Truscon steel casements due to flexibility in design and wide variety of standard types offer interesting opportunities for residential design. Wide swinging vents, many separate glass panels, and the slender and graceful lines of these windows offer practically no barrier to light.

Modern room styling has changed many previously favored decorative practices. Bulky, unsightly framing around windows has now been replaced by the neat, inconspicuous and economical treatment made possible by steel casements. Net result of this is more usable wall space—greater flexibility of wall treatment and



"TRUSCON" double casement with fly screen. Ventilating panels operate through sill.



NEW "Win-Dor" concealed "Bolt-Fast" sill lock as used by Ceco on its new "Streamline" steel casements. Sill operation replaces the manual locking handles in center of mullion or frame. This permits full width screens for more than one vent.

increased opportunity for most modern interior decoration.

Screens are always attached to the inside of Truscon steel casements. This is both a convenience and a safety factor, especially in homes of two or more stories. Truscon screens for casements are of two types—fixed screens and wicket screens. The former is for Roto Type casements with under-screen operators. Wicket screens were developed for casements equipped with standard locking handles. The wicket allows ample room for the hand and arm to operate the ventilator. Both screen types have re-wireable steel frame and come equipped with bronze screen cloth.

Truscon casements are stocked in 29 warehouses from coast to coast. Delivery service is but a matter of a few hours or overnight. 61 district and branch sales offices offer the services of trained steel window experts for the convenience of architects, builders, contractors, dealers or owners.

**"Ceco Streamline" Residence Casements  
With Casement Hardware Co. "Win-Dor Bolt-Fast"  
Concealed Lock**

Ceco steel casement windows and metal frame screens are complete units, ready to set in place. You save the cost of trimming, fitting, weatherstripping and readjusting, and expensive upkeep. Ceco casements and screens always operate easily and stay weather-tight. They are modern in design, permanent, and the cost is surprisingly low.

Ceco Steel Products Corp. has recently adopted a new simple, convenient concealed locking device used with Roto (underscreen operators) Casements, which eliminates the use of locking handles at the meeting rail.

The ventilators are locked in position by an ingenious concealed locking bar, as illustrated, which engages with keepers.

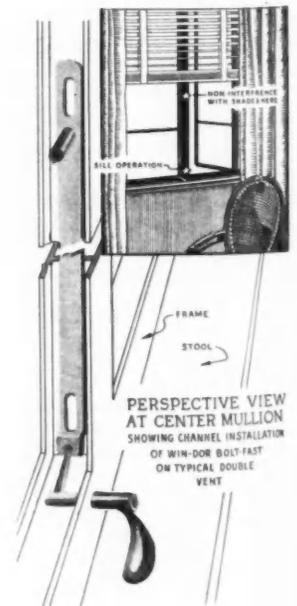
The advantages of this arrangement are that the Venetian blinds no longer present a problem in connection with their use on steel casements, as there are no handles to interfere with the operation of the blind. Also on double vented casements where vents are adjacent to each other, only one screen with uninterrupted screen cloth is required where formerly two screens were furnished. Hence, considerable saving in material cost is

effected with subsequent saving in storage, handling, etc. Then in case of winter windows or storm sash, fewer panels are required because of freedom from interference of handles. Therefore, again savings on material and subsequent costs are effected.

This new hardware (Casement Hardware Co.'s "Series 400 Bolt-Fast") is a flat sliding bolt lock operating in the frame channel from the sill. Action is positive and installation is simple.

This type of lock replaces the typical locking handles for vents. The convenience of this hardware is obvious where stool lines are high and window installations are above normal reach, such as over sinks.

Ceco residence casements are now bonderized. This process of chemically treating the steel after complete fabrication so that greater paint adherence is possible together with a baked-on coat of paint assures a surface that lasts three to five times longer than what is secured when using plain steel painted. Bonderizing is provided at no extra cost to the ultimate user.



DETAIL of operating bar in "Win-Dor Bolt-Fast" lock.

Amer  
Meske  
With  
Me  
in giv  
fact t  
that is  
tiful  
of the  
unit v  
ready  
vide n  
they p

DIGNI  
"Guild  
swing  
the ro  
the ro  
to the  
and e  
owner  
Me  
lation  
the sc  
small  
on the  
sash o  
of Me  
"Stan  
Cri  
"Stan  
prove  
of in  
and th  
mizin

**Mesker "Guildhall" Casements  
With Solid Bronze Hardware**

Mesker Brothers "Guildhall" Casements do their part in giving more house for the money. Outstanding is the fact that they are equipped throughout with hardware that is made of solid bronze. This insures a bright, beautiful, lustrous hardware finish throughout the entire life of the window. Mesker "Guildhall" casements are truly unit windows. They come to the job fully assembled, ready to set into the wall. The thin steel members provide much daylight. When equipped with sill ventilators they provide excellent no-draft ventilation and their out-



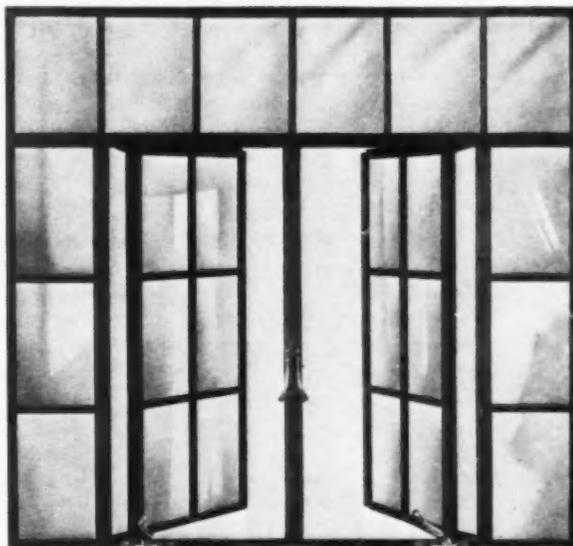
DIGNIFIED clean cut architectural lines characterize the Mesker "Guildhall" steel casements.

swinging ventilators help to deflect summer breezes into the room. They are easily washed from the inside of the room. Insect screens are attached inconspicuously to the inside of the window where they are easily reached and easily removed. With inside screens, many home owners leave their screens up the year round.

Mesker "Insulaire" storm sash provide effective insulation in the winter-time. They are attached in place of the screen and held firmly and securely to the inside by small clips. These Insulaire storm sash can be installed on the window in a jiffy. With both screens and storm sash on the inside, the clean outside architectural view of Mesker "Guildhall" casements is unimpaired.

**"Stanwin" Steel Casements**

Crittall-Federal, Inc., by a series of changes in their "Stanwin" casement, is now producing a greatly improved window for residential use. New steel sections of increased depth and weight provide greater rigidity, and their design permits better fitting at the factory, minimizing field adjustment.



POPULAR model of the Crittall-Federal, Inc. "Stanwin" steel casement with double ventilator.

Ventilators are hung on new angular design pivot hinges, welded solidly to the vent and frame members, further strengthening the window and eliminating sag. Muntin joints have been improved for strength and appearance.

Windows arranged for sliding wicket screens have strong, attractive bronze handles and friction hinges. Casements intended for use with stationary screens have a locking handle and a gear type "Roto" adjuster which features an internal gear rather than external, with four teeth constantly in mesh, eliminating breakage and assuring easier, smoother operation.

"Stanwin" casements are given two good shop coats of paint before shipment and are carefully packed in strong crates to insure their arrival at the job in good condition.

Steel frame screens with bronze cloth are generally furnished with the windows. Inside, auxiliary steel framed glass panels, acting as storm sash, are interchangeable with the screens.

Crittall-Federal also offer a standard all-welded "Basement" window. Patented construction provides two positions of opening, as well as complete removal of the vent from the frame by simply lifting it out. No fittings need be unfastened.

**Market Survey**

A window buying and using survey made among 5,000 typical contractor-builders doing an average business of \$51,000 in 1938 brought out the following:

Contractor-builders show a marked preference for advertised brands of both wood and metal windows.

Contractor-builders buy more windows from lumber and building material dealers than from any other source. These dealers solicit the window business of contractor-builders more actively than any other type of distributor.

Profit windows are preferred over windows fitted on the job in an approximate ratio of 7 to 4.

Replies indicate that 35 per cent of the windows installed by contractor-builders in new homes are weather-stripped.

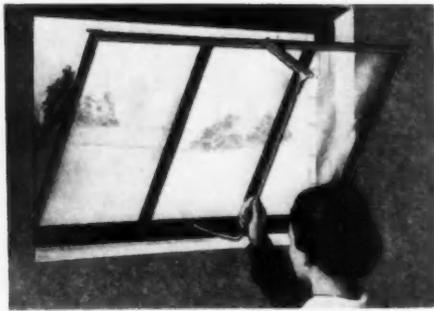
Contractor-builders use factory-made frames in preference to frames made on the job, on a ratio of nearly 6 to 1.

Seven out of each 10 contractor-builders report that they specify a preservative treatment for wood sash.

### Vento Steel Basement Windows

The use of steel basement windows represents sound economy. Vento steel basement windows are shipped completely assembled with frame and sash, hardware attached, heavily painted and ready to install. Through the use of heavy channel frame construction warping, sagging and sticking are eliminated.

The narrow frame and intermediate bars do not obstruct the light; they materially assist in making base-



VENTO Steel Basement sash and frame come as a complete unit.

ments more livable. They are ideal for use in recreation rooms giving a maximum amount of light and ventilation.

These basement windows are arranged for puttyless glazing introduced by Vento seventeen years ago. The original design has been consistently improved. The glass is held firmly against a water-tight cushion of impregnated cork. The glass panes are easily installed, and broken lights may readily be replaced by the owner if desired. A convenient locking handle is furnished on the "Premier" design.

They are a departure from the usual basement windows in that the ventilators can be adjusted to give indirect or direct ventilation as desired. In other words, Vento basement windows are so constructed as to give all the advantages of a top-hinged and bottom-hinged type combined in one unit. The ventilating section is easily removable when so desired.

Full opening ventilation is desirable under certain conditions but in meeting the normal weather requirements there is a distinct advantage in favor of indirect ventilation, particularly for basement windows which of necessity are close to the ground. Vento design permits ample ventilation without allowing dirt, snow or rain to enter.

A neat and trim appearing screen is made to fit all Vento basement windows and is easily installed. Storm windows are also obtainable, which are interchangeable with the screen.

### Kewanee Steel Windows

The Kewanee Manufacturing Company has developed a full line of casement, pivoted and projected windows as well as basement windows. The "Master" basement window is of high class, although the price is now the same as that of the "Standard" basement window. Construction being of box frame with complete double weathering contact and of vent projected type, the user is enabled to get any desired ventilation since vent stays put in any position. The window at the same time is substantial and attractive in appearance.

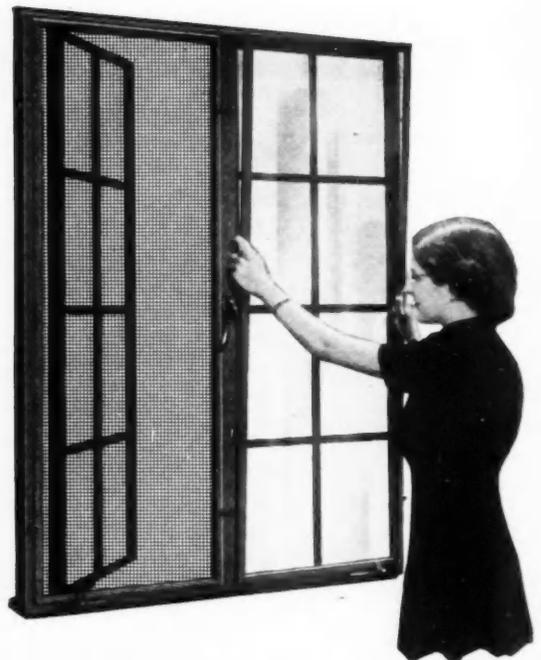
The casement windows are constructed accurately, giving uniform and even weathering contact and at the same time they are attractive in appearance. There are

two standard groups of Kewanee Manufacturing Co. steel residence casements, classified according to their muntin construction. Windows of full muntin construction are termed "Full Muntin" ("F.M.") casements and the standard group includes not only casements with side-hinged open-out vents but also windows with top-hinged open-out vents, windows with bottom-hinged open-in vents, fixed windows, and circle heads. Windows with the vertical muntins omitted are termed "Horizontal Muntin" ("H.M.") casements and the standard group includes only windows with side-hinged open-out vents. The standard hardware for Kewanee F.M. casements with side-hinged vents is termed "Roto" ("R") hardware and consists of underscreen rotary geared operators of die cast metal, bronze locking handle and non-friction cleaning hinges. The standard finish for this hardware is dull bronze, but hardware of other metals and finishes can be furnished on special order. The standard hardware for Kewanee H.M. casements is termed "Simplex" ("S") and consists of bronze locking handle and friction cleaning hinges. Standard finish for Simplex hardware is dull bronze but hardware of other metals and finishes can be furnished.

In building a home, some people overlook the small but sometimes the most important details. They want their windows to be the prettiest of any house on the street, and pride themselves on their taste. They want everything to look unusual and as neat and attractive as possible, but the average home builder does not give sufficient thought to the durability of the materials that are used in building a home.

In a year's time the owner or builder who has not given sufficient attention to the materials and service which they render is disappointed and dissatisfied. The windows which he thought would be attractive have developed trouble. The owner bewails the fact that all his pride in his home is ruined by the difficulties encountered with windows.

The next time that man builds, he is going to be wiser. He will insist on more quality in his windows.



THE KEWANEE steel casement is attractive in appearance and will open and close easily, as shown. A slight push on the locking handle opens the vent to any desired angle. Access through the screen is via wicket. Notice the full size muntins.

# How to Estimate Accurately

In the Series on Estimating, This Article Presents Interior Finish

By J. DOUGLAS WILSON

Head, Building Trades Dept., Wiggins Trade School, Los Angeles, Calif.

THE INTERIOR FINISH work of a residence is divided for estimating purposes into four divisions. Windows, doors, screens, and shutters form the first division. Inside trim is included in the second group. Interior built-in features, such as bookcases and kitchen sink cases, are grouped to make the third division. Lastly comes the finish T&G stock used for floors and occasionally partitions and walls.

## Window, Sash, Door, and Shutter Unit

**WINDOWS, SASH, and DOORS:** The term "window" means an upper and lower sash which slide vertically. These sash are usually counter-balanced by weights hung on sash cord or sash chain or by using a sash balance. The term "sash" always means one piece. A casement sash swings either in or out, or it may be stationary. There are several types of doors commonly used in house construction. These are generally classified as interior, exterior, screen, and cabinet doors.

**Size:** The width of a window, sash or door is given first, the length second and the thickness third. If two sash are to be hinged in one frame, they are called a pair. The size of the pair is the same as the size of the frame. To illustrate: An order for a pair of sash for a 2'-0" x 3'-0" frame would read: One pair (pr.) casement sash 2'-0" x 3'-0" x 1 3/8". The accepted standard thickness of sash is 1 3/8". The joint, where the two sash meet, is known as a rabbeted joint. In taking off windows or doors it is advisable to select all like sizes first.

**Note:** In the eastern part of the United States it is common practice to give only the glass size of a window. From this size the outside measurements of the sash or window must be computed. For a 2 light window with 1 3/8" check rail add 4" to width and 6" to length.

To illustrate:

A 2 light (lt.) window has a glass size of  $\frac{24}{30}$ . This means the

glass in each sash is 24" wide and 30" high. 24" plus 4" equals 28" or 2'-4", which is width. 30" x 2 (the double hung window is two sash high) equals 60". 60" plus 6" equals 66", or 5'-6" which is length. Therefore, the window frame size is 2'-4" x 5'-6".

**Kind of Lumber:** Lumber used

for sash will vary according to each locality. Sugar pine or cypress are often used. The specifications will give this information. They also state whether the door is to be veneered and if the same kind of veneer is to be used on both sides. Often a door is made with different woods on each side in order to secure certain architectural effects. **Number of Lights:** Lights of glass in a window or door will vary according to the way the plan is drawn and the type of architecture used. The elevation sheet will give this information.

**Weight of Glass:** Window glass is not purchased by thickness, although there are several different thicknesses made. Two kinds in common usage are known as single strength (16 oz.) or double strength (21 oz.). The term 16 oz. means that one square foot of glass will weigh 16 oz. Plate glass is also used for residential work; 1/4" to 3/8" thick is standard.

**Kind of Glass:** There are different kinds of glass that may be used, such as clear and obscure. The best glass is ordered free from waves or defects. If specifications do not state kind, clear glass is understood to be wanted.

**Grade of Glass:** There are several grades of glass that can be purchased, the symbol letters determining the quality. The first three grades are AA, A, and B. The best grade is AA and indicates that the glass is free from waves or defects.\*

**Shape of Lights:** This information is determined from the elevation sheet, as windows are cut up into many different designs.

**Kind of Sticking:** The term sticking, when applied to a window, refers to the shape of the moulded edge into which glass is fitted. Unless specified, the mill will make the sash to a standard design. If the plans show other than stock design this information must be given on the order.

**Kind of Wire:** This only applies to screen doors. This information is given in the specifications. There are three kinds of wire commonly used—black, galvanized, and copper. In damp climates copper is used due to its weather resisting qualities. The wire is ordered by mesh which means the number of holes per linear inch. The wire commonly used is 12, 14, or 16 mesh.

**Catalog Number:** Many large manufacturing plants furnish catalogs to serve as aids in the selection of the correct type and size of their product. If such an aid is

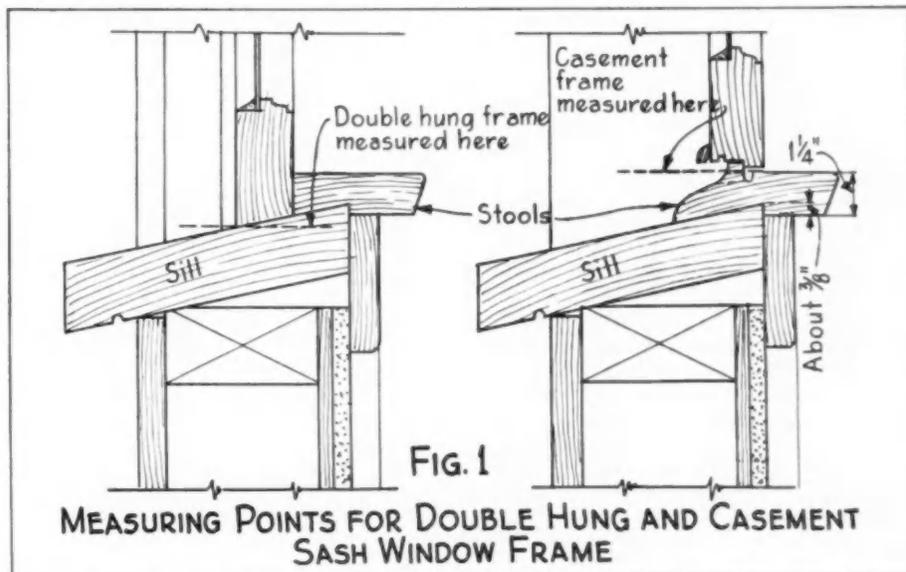


FIGURE 1 indicates measuring points for double hung and casement frames.

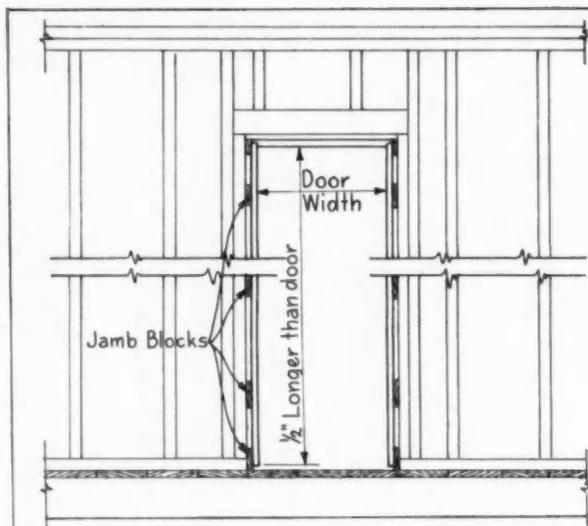
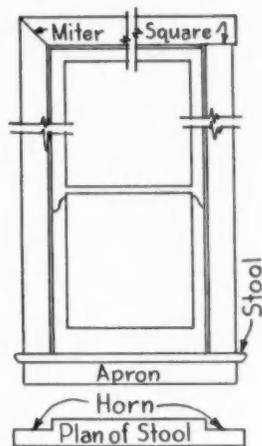


FIG. 2 A DOOR JAMB SET READY FOR USE

FIG. 3  
STOOL AND APRON

FIGURES 2 and 3 show, respectively, measuring points for estimating door trim and the parts of window trim to be listed.

available, it is advisable to include on the order the catalog number of the item.

**WINDOW SCREENS:** A few years ago it was common practice for the carpenter to make screens on the job. With the development of machinery, however, this job is usually done in a mill or special screen factory.

Only those windows that open require screens. Sometimes screens are not specified, although this practice pertains to public buildings rather than residences.

Considerable information is necessary when ordering screens, as outlined below:

**Quantity:** Only those screens that are the same in size and kind of wire can be grouped together. To determine the number of screens required, check the specifications to find which windows are to have screens and count those windows on the floor plan, or, if the symbol "Sc" is printed for each window that requires a screen (as is sometimes done on a plan), count these symbols.

**Name of Screen:** There are three standard kinds of window screens based on the kind of frame into which they hang:

(1) The full double hung window screen has a horizontal bar across it at the meeting point of the two parts of a double hung window.

(2) The sliding screen always moves vertically.

(3) If a casement screen is ordered, no bars are put in unless specified. All screens that hinge in are known as "inside screens." The lumber for an inside screen is selected to match the interior finish.

**Size:** The width of a screen is the same as the width of the sash or window.

The length of a screen is not the same as the sash or window, but longer. This is because of the pitch or slant of the sill. The screen for a casement sash is longer than for a double hung window on account of different measuring points. Figure 1 illustrates this. When taking off the screen, add 1" to the window length. For sliding screen, give half the increased window length. *The exact screen length is determined after the window frame is built.*

The thickness of a screen is determined by the detail of the window frame or the specifications. This thickness will vary, but the standard is recognized as being  $\frac{3}{4}$ " unless otherwise stated.

**Kind of Lumber:** Lumber will vary, and is based somewhat on local practices. Redwood or sugar pine are often used.

**Number of Lights:** The term "light," although usually applied to glass, is also used when ordering screens, and

means the openings in the screen frame. As these openings are made to match the window or sash, the same terminology applies.

Window screens usually have one light for a casement sash frame and two lights for a double hung window frame. A bar is placed across the screen parallel to the meeting bar on the double hung windows. Occasionally an architect will specify screens to match the windows.

**Shape of Lights:** The shape will usually conform to the window to which the screen belongs.

**SHUTTERS:** These are increasingly becoming a regular part of the exterior design of many homes. In numerous cases they are used for architectural effect only, and are not hinged but screwed flat to the wall.

**Quality:** The elevation sheets will show which windows require shutters and indicate their shape. Two shutters are required for each window.

**Size:** If the shutters are to be hinged to shut into the frame the width will be one-half the width of the window. The length will have to be determined from the window frame detail, as the slope of the sill affects the length of the shutter. For estimating purposes add 1" to the length of the frame. Shutters that are to fit into a frame should not be ordered until the frames are made.

If shutters are used for ornamental purposes only, the length should be measured on the elevation sheet as architectural practices vary as to the length of a shutter when used in this way. The width will be one-half the window width.

**Kind of Lumber:** The specifications will usually state this. White pine is often used.

**Shape of Shutter:** The shape of the shutter is determined by checking the elevation sheets. Occasionally architects will draw full size details showing the sizes of the different stiles and rail.

#### Inside Trim Unit

Inside trim is finish lumber, such as casings, stool, aprons, door jambs, baseboard, baseshoe, and picture moulding.

**DOOR JAMBS:** A door jamb is the frame into which a door is fitted and hung. It is made of finish lumber S4S, sanded one side and consists of two side pieces and one top piece, known as the head jamb. Figure 2 represents a door jamb set ready to have the trim nailed on. Each inside door requires one door jamb. A sliding door requires two jambs.

Two kinds of finish lumber are sometimes required  
(Continued to page 96)

# OUTSTANDING *Style*

... but you get a lot more than style for your money in these 1½-ton Internationals



**T**HIS picture of the 1½-ton Model D-30 doesn't half do justice to the truck. It gives you a good idea of the modern streamlined beauty of International Trucks, but it doesn't tell you a thing about the amazing economy of the trucks on your job. Drivers and owners can tell you about that.

It takes more than just style to deliver International performance. A new line is not just a matter of the calendar with International Harvester. Constant improvements in engineering and construction *make and keep* International Trucks the standard for the industry.

The constant aim of this company is to give you *hauling value — to make economical performance your lasting source of satisfaction.* HAULING VALUE—plus distinctive beauty of design that is recognized and admired wherever loads are hauled.

In the popular Model D-30, as in every International Truck from the sturdy ½-ton pick-ups to the powerful six-wheelers, you get *International* performance. And that's the finest thing that can be said of anything on wheels. International Trucks are rugged, *all-truck* trucks, all the way through. They're made for tough jobs and rough handling, and they're built to take it.

And throughout your years of International ownership, the network of Harvester's Company-owned truck-service organization is ready to service your truck at all times.

Talk over your hauling problems with any International dealer or Company-owned branch. Arrange for a demonstration.

INTERNATIONAL HARVESTER COMPANY  
(INCORPORATED)  
180 N. Michigan Ave. Chicago, Illinois

# INTERNATIONAL TRUCKS

# Contractor's Equipment and New Products

## All-Purpose Woodworking Tool

THE DeWalt Products Corp., Lancaster, Pa., is now offering the DeWalt Moto Miter Box, an "all purpose" woodworking tool. This machine is practically a woodworking shop in itself, performing 29 different operations. It is especially designed for light cutting, making it an ideal tool for home workshops, carpenter shops, pattern shops, cabinet work, etc.

The direct drive motor runs from an ordinary light socket. The arbor can be placed in any position for all sawing operations; the arm swings 360 degrees horizontally for miters; the yoke swivels 360 degrees horizontally for instant change-over from cutoff to rip positions; the motor rotates 360 degrees vertically for all angle cuts. The roller bearing carriage inside the arm effects easy and fast work.



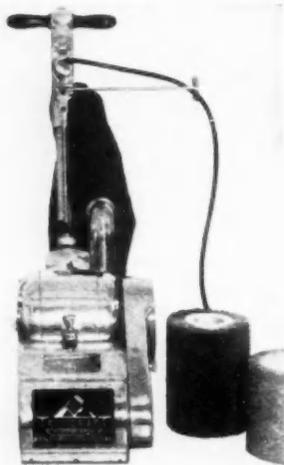
MULTI-PURPOSE saw with quick change-over.

## Tri-Craft Floorworker

A NEW multi-purpose floor machine, called the Tri-Craft Floorworker, which has been recently announced by the Porter-Cable Machine Company, Syracuse, N.Y., is designed for use on many types of floors: wood, marble, terrazzo, linoleum, tile, etc.; for sanding new floors and removing old finishes; steel wooling seals and other finishes; cleaning and polishing.

It is a drum type machine; therefore it works with the grain or in straight lines. This makes it an easy task for even the inexperienced operator to finish a floor evenly and beautifully with no fear of leaving swirls and cross-grain scratches.

Various drums are available with this new machine—sanding, steel wooling, tampico drum brush, and lambs wool. Changing drums, removing the sanding drum, and mounting the steel wool drum, for instance, takes less than a minute. Various finenesses of steel wool are available, the wool being wound around cardboard sleeves; these slip on the drum of the machine.

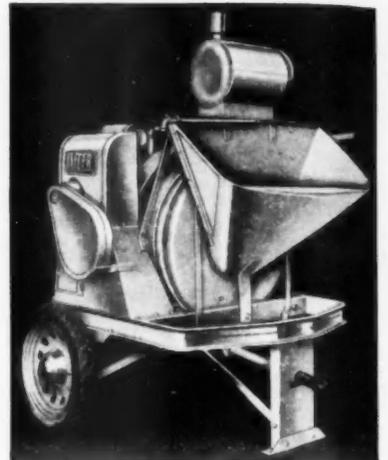


NEW Floorworker has various drums for performing on many types of floors.

## 3 1/2 S "Utility" Trailer-Mixer

OUTSTANDING features of the 1940 Model 3 1/2 S "Utility" concrete mixer, announced by The Jaeger Machine Co., Columbus, Ohio, are: a measuring batch hopper that operates as fast as, and saves the cost of, a power loader, a 3/4-H.P.

AN 8-gallon tank supplies accurately measured water to this new 3 1/2 S mixer.



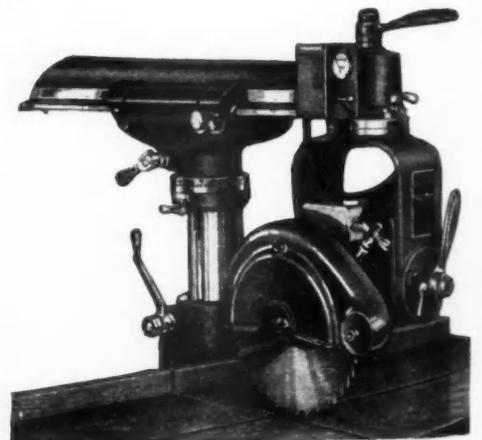
Wisconsin air-cooled engine with plenty of reserve power; handier and lighter end discharge trailer design.

According to the firm's engineers, this machine, by combining faster discharge with the ability to load while mixing, will produce 30 to 40 per cent more concrete per hour, and easily mixes 30 to 40 cubic yards a day. While one batch is mixing, the next is being loaded into the gated hopper, ready to enter the drum as soon as previous batch is discharged. Its high back catches all material, and intake side is as much as 12 inches lower than others for faster, easier shoveling from stock piles. The hopper can also be loaded by barrow from a platform, and has the same capacity as the drum, for easy measuring. This modern half-bagger's drum, because it is equipped with bigger buckets, wider and deeper spoon, and larger opening, discharges faster and cleaner, directly into barrow or form.

## New Radial Saw

A RADIAL saw, which was designed to enable the contractor to cut costs on the job or in the shop, and which performs a dozen operations necessary in building, has been introduced by the Walker-Turner Company of Plainfield, N. J. A two-wheel trailer is available for moving the radial about the yard or from job to job.

Among the features of this saw are the following: geared-head motor which provides a 2-inch depth of cut with 1 H.P., 3-inch with 2 H.P., and 4-inch with 3 H.P. motor; unusually small diameter blades; a voltmeter, supplied as regular equipment, to indicate at all times whether or not sufficient line voltage is being supplied to the motor; a magnetic circuit breaker switch which permits the motor to work at full load capacity yet cuts off the power on a sustained overload; a compensating gear that eliminates every possibility of stripping teeth, yet requires no resetting. This machine saws, cutting miters and compound miters in ripping and crosscut positions. It cuts, grooves, rabbets and tenons. With the proper tools, which are available, it routs and shapes.



RADIAL saw cuts, grooves, rabbets, tenons, routs and shapes.

# What Do Leading Builders Think of J-M SUPER-FELT?

Read this statement by William J. Levitt, President of Levitt and Sons, one of Long Island's largest and best known builders



MR. WILLIAM J. LEVITT, President, Levitt and Sons, Manhasset and New York, N. Y. During the past five years, Mr. Levitt has built and sold more than 1000 houses in his famous "Strathmore" developments. He uses J-M Super-Felt in every house as standard insulation. Prior to the introduction of J-M Super-Felt in 1938, Mr. Levitt used J-M Ful-Thik Batts.



Suburban Communities

LEVITT AND SONS

MANHASSET — NEW YORK

MANHASSET 1100

Johns-Manville Corp.  
22 East 40th Street  
New York City

Gentlemen:

We have been insulating all of our houses with the Johns-Manville Ful-Thik Super-Felt as standard equipment for the past five years. There have been a variety of reasons but three among these stand out as predominant.

First, we believe that Ful-Thik Super-Felt gives our people the maximum degree of year 'round comfort and fuel economy. Actual tests that we have run have shown savings in fuel consumption ranging from 15 to almost 40%.

Second, the name 'Johns-Manville' on the product gives us an incalculable amount of advertising and good will. The American public likes a recognized trade mark and has little confidence in an unknown and unadvertised product. Our people know the name Johns-Manville and recognize it as a symbol of quality.

Third, the construction and assembling of Super-Felt into neat packages makes it so easy to handle that installation can be accomplished quickly. Time and money in the building business are big items of cost, and wherever we can save we make our product that much more attractive to the public.

Sincerely,

*William J. Levitt*  
WILLIAM J. LEVITT

pd



J-M SUPER-FELT is amazingly tough and strong. Twist it. Bend it. The wool stays put . . . the waterproof paper backing doesn't readily tear away. Home owners get uniform thickness and density and are assured of maximum insulating value. And, because Super-Felt batts are rigid and easy to handle, you save time and cut costs on every job.

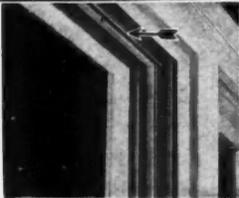
You should have full details on this product that has the approval of leading builders everywhere. Just write Johns-Manville, 22 East 40th Street, New York, N. Y.



## JOHNS-MANVILLE BUILDING MATERIALS

Asbestos and Asphalt Shingles  
Insulating Board • Super-Felt Rock  
Wool Home Insulation • Steeltex  
Flexboard • Asbestos Wainscoting  
Hard Board • Roll Roofings, etc.

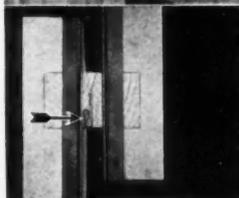
**KNOW WHY** *America's Window Beautiful*  
**The EMBASSY** **FACTORY-FITTED WINDOW-UNIT**  
**OPERATES EASIER - OFFERS GREATER PROTECTION - IS MORE ATTRACTIVE**



Head jamb completely metal lined. Metal lock strip enters groove in top of upper sash for snug seal. Finest spring balances guaranteed for life of building eliminate need for sash weights and cord.



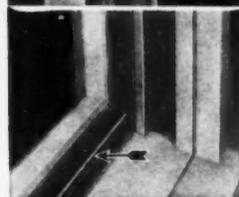
Side jambs completely metal clad from inside stop to blind stop. Upper sash is slide-sealed to metal covered parting stop with special interlocking metal strips. A complete weather and dust seal.



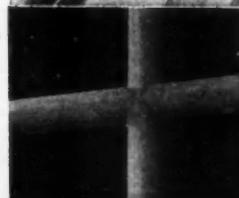
The check rails also are tightly sealed by means of improved type interlocking metal strips. All weather-stripping is non-rusting zinc—all specially designed for EMBASSY units.



In the same manner as the upper sash, the lower sash is slide-sealed to the parting stop with special interlocking metal strips. Sash slide smoothly and easily insuring effortless operation.



Sill is metal lined to full thickness of lower sash. Provided with lock strip which enters groove in bottom of lower sash. Sill is extra wide and set at a pitch of 3 in. to 1 ft. to insure adequate drainage.



The exclusive EMBASSY division bars are oval shaped—unusually neat in appearance. Also provide smooth rounded surfaces—easy to keep clean, there being no recesses where dirt may collect.



DOUBLE HUNG

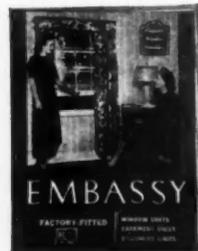


CASEMENT



BASEMENT

PRICED FOR SMALL AS WELL AS LARGE HOMES



WESTERN PONDEROSA PINE  
 TOXIC-TREATED  
 LICENSE NO. 120 TOXIC-PRESERVATION  
**APPROVED**  
 NATL. DOOR MFRS. ASSN.  
 Send for Complete Catalog  
**ROACH & MUSSER CO.**  
 6211 Grand View Ave., Muscatine, Iowa

**Half-Surface Butt Hinge**

THE Stanley Works, New Britain, Conn., has developed a new "Half H" butt hinge of Colonial design fitted to modern application, and recommended for residential and apartment house interior doors 1 3/8 inches in thickness; it can also be furnished for doors 1 3/4 inches thick. This half-surface butt hinge is of wrought steel, and can be used on either flush doors or can be furnished for doors set 1/8 inch beyond the jamb. It is made in two types—non-template for wood doors with wood jambs, and template for wood doors with pressed steel jambs.

The loose pin with nail head tip permits reversing the hinge for either right or left-hand doors. The door leaf is furnished with pyramid head screws that look like hand-hammered nails.

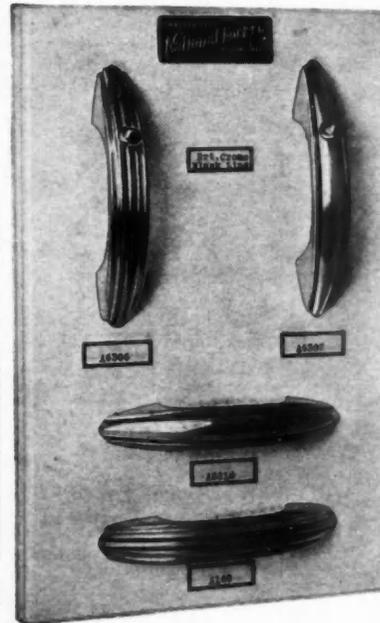
An important feature of this hinge is that doors can be hung in approximately one-third the time required when full mortise butts are used. With one leaf exposed, no gauging is required, and only the jamb leaf is mortised.

COLONIAL design "Half H" butt hinge.



**Chrome Plated Kitchen Cabinet Hardware**

A LINE of modern chrome plated kitchen cabinet hardware is being offered by the National Lock Co., Rockford, Ill. The new designs are simple and neat, with the chrome finish accented by black lines. The push-button catches are furnished with strikes for offset or flush doors; the plain pulls are of matching design, both coming complete with screws. The highly polished chrome plating on brass assures permanency.



DISPLAY board showing chrome and black trim kitchen cabinet hardware.

**Burglar-Proof Cylinder Lock**

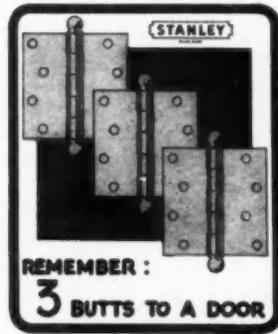
A NEW, improved principle has been employed in the burglar-proof rim and mortise cylinder locks being manufactured by the Dudley Lock Corporation, Chicago. This consists of four rows of tumblers, instead of the usual single row, involving the use of a patented key with four operating edges, two on top, two on bottom. This apparently complicated, but actually simple, arrangement of the tumblers makes it virtually impossible to

(Continued to page 78)



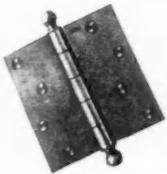


... AND THE THIRD  
FOR SATISFACTION!



*SATISFACTION* calls for that third hinge—every time. Why? Because wood warps. Doors hung on two hinges will bow out of line.

To fix a door out of true might cost more than to fit all doors in a house with the third hinge. It's well worth a small investment to keep a door hanging straight and true. Also, the third hinge prolongs life of the other hinges. And the lock always clicks to a perfect fit. The Stanley Works, New Britain, Connecticut.



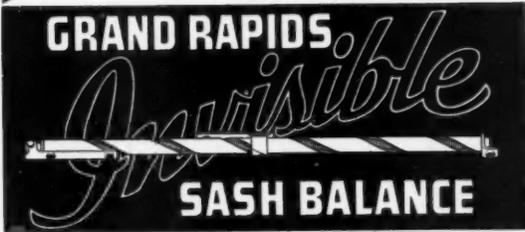
Stanley 241  
Standard Of The  
World For Over  
Fifty Years.

# STANLEY

Trade Mark

HARDWARE FOR CAREFREE DOORS

# Presenting A NEW ADDITION TO A FAMOUS LINE



**WITH THESE IMPORTANT FEATURES**

**SIMPLIFIED DESIGN**

The result of 3 years of research and testing. Only one moving part. Oil tempered spring completely enclosed in spiral tube. Simple, fool-proof.

**ACTUALLY INVISIBLE**

No exposed tape, tubes, or cables. Entire balance fits into grooved sash stile and moves with the sash. No interference with painting. Actually invisible in all window positions.

**INSTANTLY ADJUSTABLE**

Tension can be adjusted in a jiffy without removal of a single screw at any time. Special slot provided at bottom easily accessible.

**EASILY INSTALLED**

Entire balance fits into a 5/8" wide by 2 1/16" deep groove (trimmed size). Only 4 screws required for complete installation. Rigidly supported top and bottom. Can never get out of true. 23 sizes to meet all requirements, with 10 sizes covering 85% of residential installations.

## Completes the Great "GRAND RAPIDS" LINE



With the addition of the "GRAND RAPIDS INVISIBLE," the "GRAND RAPIDS" line becomes more than ever, the most complete line in the world. Pulley types (overhead and standard) for narrow trim and conventional installations. All made to precision specifications according to quality standards that have made "GRAND RAPIDS" the preferred source-of-supply for forty years.

*Write for Bulletin and Prices*

**GRAND RAPIDS HARDWARE CO.**  
**GRAND RAPIDS, MICHIGAN**

## "GRAND RAPIDS" The Standard for 40 Years

**USE  
THIS  
COU-  
PON**

GRAND RAPIDS HARDWARE CO., GRAND RAPIDS, MICHIGAN

Please send me complete information and prices on the new "GRAND RAPIDS INVISIBLE" Sash Balance.

NAME \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_



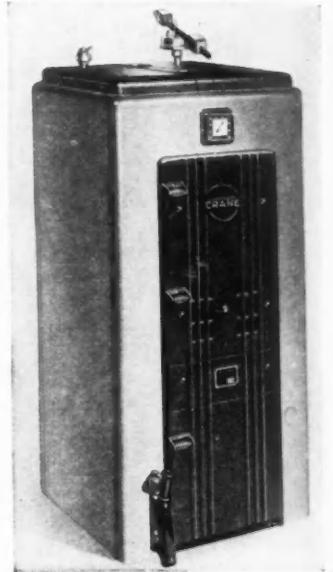
(Continued from page 76)

align the tumblers in any other way than by the use of the proper key. The locks, which have a protected case, armored cylinder countersunk in grip-proof ring, double length throw bolt, and rugged strike, are almost impossible to pick, jimmy, drill or saw. The key cannot be copied by commercial key machines, duplicate keys being made only by Dudley.

### Boiler for Steam or Hot Water

A NEW boiler, the No. 10, which is designed for use with coal or coke, oil or gas, has been announced by Crane Co., Chicago. Its 12-inch base and removable grate lugs facilitate conversion to stoker firing or oil burning; it is designed for steam or hot water systems. A green jacket is provided for the boiler with a black wrinkled finish on the doors.

A patented feature of the No. 10 boiler, as well as of the No. 110, also new, is its "controlled water travel" whereby more heat is secured with no increase in amount of fuel burned. The No. 110 is designed primarily for hand firing of coal, but can also be converted to stoker firing or oil burning.

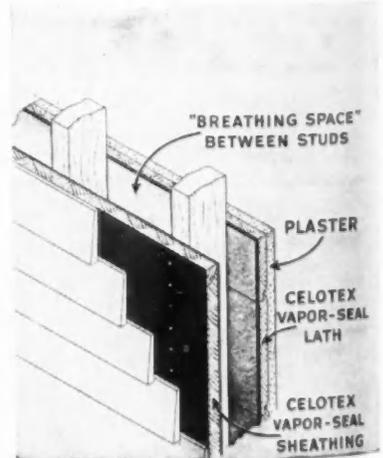


STEAM or hot water boiler can be easily converted to burn coal, coke, oil or gas.

### Safety-Sealed Construction Method

A MODERN building method which seals four vital parts of a house—the outer wall, inner wall, roof and top floor ceiling—has been developed by research engineers of The Celotex Corporation. This has been named Safety-Sealed Construction, and offers the following advantages to builders of new homes: It gives economy of construction; an insulation that lowers costly heating bills, keeps a house warm in winter and cool in summer; a vapor barrier which prevents harmful moisture condensation within the walls; it helps eliminate damage to interiors from a leaking roof.

With the use of Safety-Sealed Construction, the outer wall is sealed with Celotex Vapor-seal sheathing outside the studding and Vapor-Seal lath lines inner walls to form a second seal. Together, these two seals furnish insulation and vapor protection. One-inch-thick Vapor-seal lath applied on top floor ceilings makes a third seal that reduces outside heat penetration through the roof in summer and the escape of costly furnace heat in the winter. The last and fourth step seals the roof with Celotex "triple-seal" asphalt roofing, a lasting protection against roof failure.



FOUR vital points in houses—outer wall, inner wall, roof and top floor ceiling—are sealed in new type of construction.



WE WANT TO SEE

**SEEING MEANS SALES**  
 when you display the new  
**McKINNEY FORGED IRON SAMPLE BOARDS**

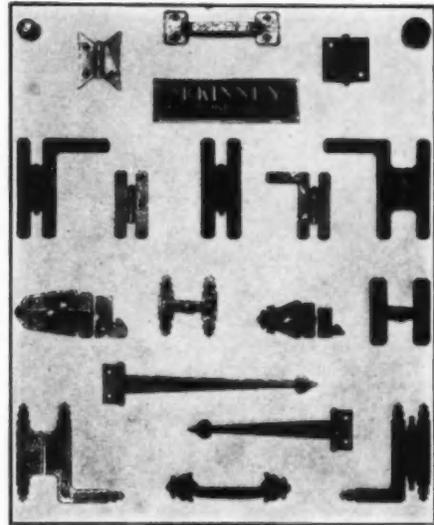


No. 7

McKinney Forged Iron Sample Boards tell a complete sales story of authentic design, master craftsmanship and beautiful texture.

Available in nine standard panels that make *easier selling* for you and *easier buying* for your customers.

*Write for Complete Details*



No. 1

**McKINNEY MANUFACTURING COMPANY · PITTSBURGH, PA.**

**DESIGNERS AND MANUFACTURERS OF GOOD HARDWARE FOR 73 YEARS**

**3 Great Improvements in Overhead Type Garage Doors**

**RO-WAY**  
*Brings You All Three!*

That is why, today, the "big swing" is on to Ro-Way. Unhampered by older methods of construction, Ro-Way has dared to pioneer new improvements . . . to set the pace . . . to revolutionize Overhead Type Door design. Note these extra features which Ro-Way gives you . . .

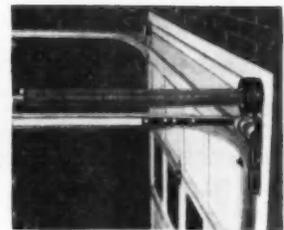
- 1 Ro-To Live Spring, which eliminates all side-drift and binding.
- 2 "Crow's Foot" Assembly, which simplifies installation, gives more quiet, smoother operation, and freedom from bothersome mechanical troubles.
- 3 Parkerized and Painted Hardware, giving Garage Door hardware and tracking the same protection provided in fine motor cars, refrigerator cabinets, etc.

The net results of all these improvements are easier operation, notable quietness, marked freedom from repairs, and added years of attractive appearance. Why not get the extra value Ro-Way gives? Write today. Address

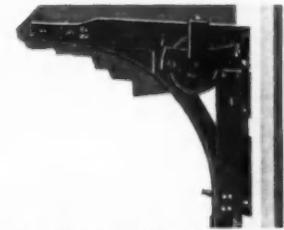
**ROWE MFG. CO.**

789 Holton St.

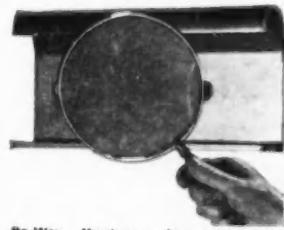
Galesburg, Ill., U. S. A.



Ro-To Live Spring  
 No side-drift . . . no binding



"Crow's Foot" Assembly  
 Gives Outer Bearing Support



Ro-Way Hardware is made rust-resisting by Parkerizing and Painting

Other Models of Ro-Way Doors are available for all sizes . . . all buildings . . . electrically operated, if desired.



U. S. Patent Nos. 1743454-1838402—(Listed in Sweet's Catalog)

## NOTHING SACRIFICED!

Non-Stick Windows are "balanced" in design and construction. No one feature is sacrificed to the detriment of the complete unit in weathertightness, operation and maintenance. Whether for the low-priced home or the more expensive dwelling, Non-Stick Windows afford the owner a new conception in comfort and satisfaction.

Sash balanced at any position with Pullman Balances which are guaranteed for the life of the building.

One-Piece Zinc Sash Guides  
 No Wood-to-Wood Contact  
 Paint Sticks Eliminated  
 Completely Weatherstripped

See the Non-Stick Window at Your Dealer or Write Us.  
**N. S. W. COMPANY, 2137 Gratiot, Detroit, Mich.**

**CLIP COUPON - MAIL TODAY**

Gentlemen: AB 119

Please send free literature

Name .....

Street Address .....

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

## News of the Month

Building Activities and Meetings

### 30 Per Cent Increase Over 1938 Indicated for October Residential Volume

RESIDENTIAL building volume for the first half of October was approximately 30 per cent above the same period of last year, according to F. W. Dodge figures; the first fifteen days of last month produced contracts amounting to \$65,604,000 as against \$50,630,000 for October 1-15, 1938. On this basis, October should show a volume of upwards to \$150,000,000 for residential building.

Statistics for the four classes of construction as recorded during September are as follows:

	Sept. 1939	Sept. 1938	Oct. 1-15, '39
37 Eastern States Residential .....	\$129,680,000	\$ 99,574,000	\$ 65,604,000
Non-Residential .....	82,466,000	91,997,000	32,932,000
Public Works .....	71,418,000	83,162,000	25,314,000
Utilities .....	39,663,000	26,167,000	11,953,000
<b>TOTAL .....</b>	<b>\$323,227,000</b>	<b>\$300,900,000</b>	<b>\$135,803,000</b>

### American Builder Appoints Marketing Editor

JOE SANDERS has been appointed marketing editor of *American Builder*. He will be located at Chicago headquarters of the publication and will work with retail lumber and building material dealers, and with manufacturers on the distribution and marketing of building products.

Mr. Sanders comes to the *American Builder* staff with 20 years experience as a merchandising and public relations counselor, a major part of this time in the construction field. For the past five years he has been connected with the insulation board industry as manager of public relations for The Insulite Company. He is an enthusiastic advocate of dealer distribution of building products, and is well known to the industry for his writings and many convention addresses on the subject. His work in behalf of dealer distribution includes active promotion of a salesmanship and merchandising course sponsored by retail lumber dealer associations.

### Enlarged G-E Home Bureau Transferred; Chapman and Snyder Named Assistant Managers of G-E Appliance Division

THE General Electric Home Bureau, established early in 1936 to render a co-ordinated technical and sales service to architects and home builders, has been transferred from its original headquarters at 570 Lexington Ave., New York City, to Bridgeport, Conn.

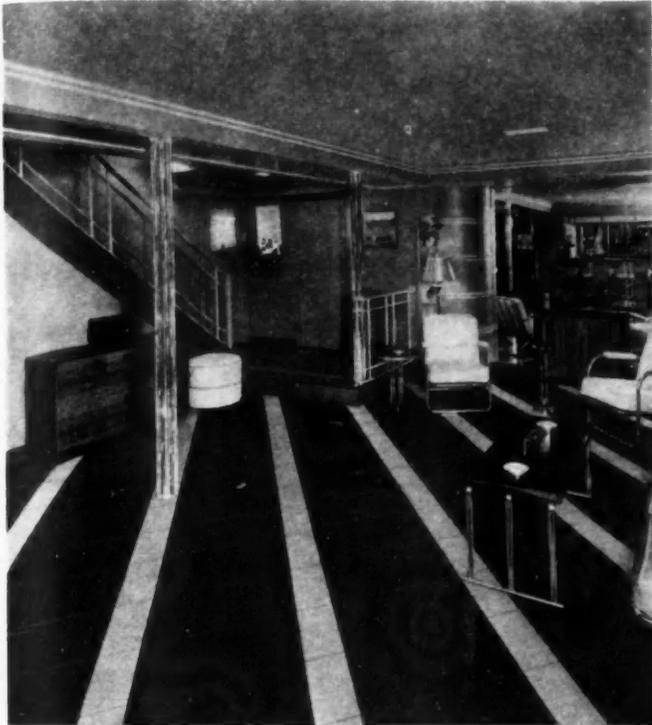
Also in line with the recent consolidation of all the General Electric Company's appliance operations at a single location in Bridgeport, Conn., H. L. Andrews, vice president and executive head of the company's appliance and merchandise department, has named George Chapman and Carl M. Snyder assistant managers, effective immediately. The appointments place in the hands of the two men named the active direction of what is generally considered the most extensive electrical appliance operation in the world.



CARL M. SNYDER (left) and George Chapman, new G-E Appliance Division Assistant Managers.

# BEAUTY AND THE BASEMENT

For Floors Combining Economy, Durability and Beauty, Install Armstrong's Asphalt Tile



Note the strikingly beautiful floor effect obtained by combining Spanish red and white Armstrong's Asphalt Tile in this basement recreation room in a Kansas City residence. Diagonal strips seem to add yards to the room length. The ceiling is Armstrong's Temlok De Luze.

To give your houses additional sales-appeal— to keep costs down, Armstrong offers you economical asphalt tile—a versatile flooring material which lends itself to the creation of beautiful, low-cost floors for basement recreation rooms.

Armstrong's Asphalt Tile is the only type of resilient flooring that can be used over concrete in direct contact with the ground. It provides a scuff proof floor with colors that can't wear off because they run right through the material. Maintenance is easy, consisting of daily dusting, occasional washing and waxing.

In addition to a wide range of plain and marble colors, you can have insets cut to almost any shape you wish. Let us send you our color-illustrated file-sized book of sales-building room designs. Write Armstrong Cork Company, Building Materials Division, 1218 State St., Lancaster, Pa.

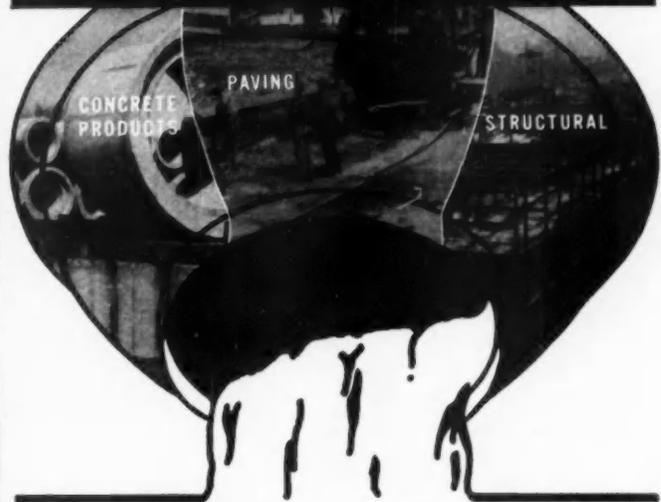
Armstrong also manufactures Linoleum, Linotile (Oil-Bonded), Cork Tile, Reinforced Rubber Tile, and Linowall.



## ARMSTRONG'S FLOORS ASPHALT TILE

Rubber Tile - Linotile (Oil-Bonded) - Linoleum - Cork Tile - Linowall Wall Covering

FOR BETTER  
WINTER CONCRETE  
*at lower cost!*



Solvay Calcium Chloride makes good concrete better. It substantially increases both early and final strength\* . . . provides quick, automatic curing . . . increases density and resistance to moisture. It is equally effective whether used with standard portland, high early, white or colored cements.

Calcium chloride is particularly beneficial in ALL CONCRETE POURED AT OR BELOW 50° F. By accelerating the set and lowering the freezing point, it shortens the danger period—gives added protection. When Solvay Calcium Chloride is used, total costs can be materially reduced. Forms may be removed in one-half the usual time, finishing work speeded, curing costs lowered.

Mail the coupon today for free copy of NEW book full of FACTS on what calcium chloride does for cold weather concrete.

\*National Bureau of Standards tests proved that the addition of calcium chloride to 40° F. concrete increased the one-day strength 300% . . . three-day strength 117% . . . seven-day strength 75%! Both Bureau of Standards and Portland Cement Association tests show that calcium chloride increases final strength 8 to 12%.

**DEALERS:** For territories not now being covered, we have a valuable franchise assuring year-round sales, exclusive promotional plans and material, and attractive profits! Write for details.

use **SOLVAY CALCIUM CHLORIDE**  
with all  
**PORTLAND CEMENTS**

SOLVAY SALES CORPORATION  
40 Rector Street, New York, N. Y.  
Kindly send me a copy of your new booklet "Calcium Chloride and Portland Cement."

Name \_\_\_\_\_

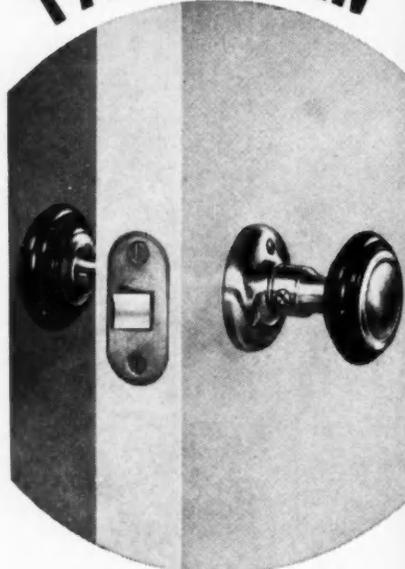
Address \_\_\_\_\_

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

Contractor  Architect  Plant Operator  Engineer

34-1129

# PATRICIAN





Bore hole in edge of door



Bore hole in side of door



Slip Bor-in Set into place

# BOR-IN

## A Handsome Cost Saver

How much is it worth to you to *save* two hours' labor in installing a dozen locksets?

That's just part of the profit story for you in the new **BOR-IN LATCHES** by Lockwood. You please the customer with a well-made latch, ideal for all interior doors, and furnished with locking feature when required. You are able to employ metal or glass knobs—or best of all, Lockwood's beautiful Patrician Knobs in colorful plastics to match all interiors.

You save money—the customer saves money—and you have a job with no headaches.

The Patrician Line means knob bodies of durable plastic in seven tasteful colors.

Each of these names presents an outstanding Lockwood development or improvement in builders' hardware

- PATRICIAN
- PLASTELLE
- UNIFAST
- EQUIPOISE
- BOR-IN
- CAPE COD

# LOCKWOOD

## HARDWARE MFG. CO.



Division of  
INDEPENDENT LOCK CO., FITCHBURG, MASS.

### NEWS BRIEFS—

**E. W. DANIELS** has been elected president of Harbor Ply-wood Corp., the responsibilities of which he will add to those he now has as general sales manager. . . . **MILTON KNIGHT** has been named vice-president to co-ordinate the special structural glass products phase of Libbey-Owens-Ford. . . . **W. C. RODD** has been appointed advertising manager of the Celotex Corp. . . . Douglas Fir Plywood Assn. has named **D. S. BETCONE** midwestern representative.



### Announce Wallpaper Campaign

**TO ACCELERATE** the trend toward the use of wallpaper in the American home, United Wall Paper Factories, Inc., largest manufacturer of wallpaper in the United States, will spend more than \$500,000 during their 1940 fiscal year. This merchandising and advertising program has two major objectives: First, to make available a wider variety of wallpapers of modern design, patterns, and colors; and second, to tell consumers about a new improved wallpaper. The campaign is expected to be the largest single factor for accelerating the trend once again towards wallpaper as a means of interior decoration.

Principal use of United's 1940 consumer advertising campaign will be to introduce a line of wallpapers under the trade-marked name of "Unitized" wallpapers. This "Unitizing" process makes it possible to purchase wallpaper, certain that it will not only look right on the wall, but that it will also give satisfactory service.

\* \* \*

### BUILDING BUZZ

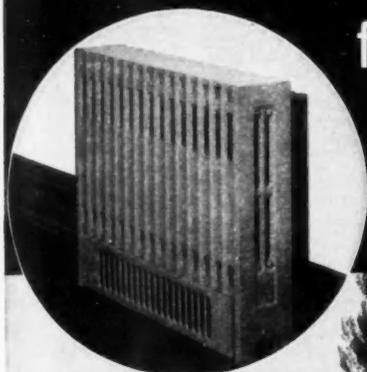
by Edgar Allen, Jr.



"I want a front door with a loud BANG—I like to slam it when I have a fight with my wifel"

# RADIATOR HEAT

for the fine,  
**SMALL  
HOME**



Home of Mr. George G. Lee, Cavalier Park, Virginia Beach, Virginia, heated by forced circulation, hot water heat, using Capitol radiation.

## U. S. EQUIPMENT LOWERS COST

**W**ITHOUT budget restrictions, forced circulation, hot water heat would naturally be chosen as the most satisfactory. Now, thanks to the advanced engineering of U. S. equipment, the original cost of a modern, one-pipe, forced hot water system is surprisingly low, varying with geographical location

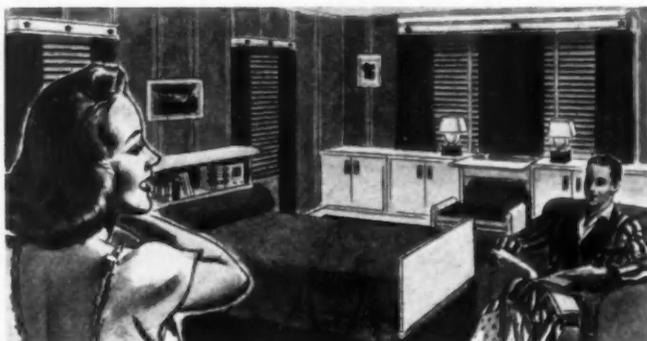
U. S. equipment permits you to offer the sales advantages of such a system for fine, moderate priced homes, built on a controlled budget. Consult your heating contractor for estimates on U. S. equipment.

**UNITED STATES RADIATOR CORPORATION**  
General Offices: Detroit, Michigan  
Branches and Sales Offices in Principal Cities

**I went to buy a chair—  
and came home with a new  
bedroom in my handbag**



I'd heard a lot about Masonite Tempered Presdwood, but never saw it until I went to buy a chair. All the store's display rooms were made of it. The manager said they use Tempered Presdwood because it's a clean, dry board . . . easy to install . . . inexpensive . . . and they can get really beautiful walls and ceilings with it. I suddenly realized Tempered Presdwood might enable Larry and me to have our whole bedroom done over, so I made some pencil sketches of those smart model rooms.



Sure enough, our builder told us that Tempered Presdwood could go on right over the old walls. It's grainless and moisture-resisting too. It won't warp, chip, split or crack. You'd never know the old bedroom now. Our walls are Tempered Presdwood, scored vertically and painted deep blue. The ceiling is light grey. We have a built-in chest of drawers along one wall—Tempered Presdwood, of course. And a handy built-in shelf over our bed for radio and books.

**MASONITE TEMPERED PRESWOOD** is the ideal, economical material for new building and remodeling. Mail the coupon below for free sample and full information.



# MASONITE

**TEMPERED PRESWOOD**

THE WONDER WOOD OF A THOUSAND USES  
SOLD BY LUMBER DEALERS EVERYWHERE

**CLIP AND MAIL THIS COUPON**

COPYRIGHT 1939, MASONITE CORPORATION

**FREE!**

MASONITE CORPORATION, DEPT. AB-3  
111 W. Washington St., Chicago, Illinois

Please send me a free sample and full details about Masonite Tempered Preswood.

Name \_\_\_\_\_

Address \_\_\_\_\_

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

# Pedigreed OAK FLOORS



Residence of Mr. Phillip McDuffee, Pasadena, California  
Robert Ainsworth, Architect

That NOFMA Oak Flooring retains the rich color, figure and texture inherent in its original forest growth will be evident to the contractor when the trim, clean bundles in which it is delivered on the job are broken open by the floor layer.

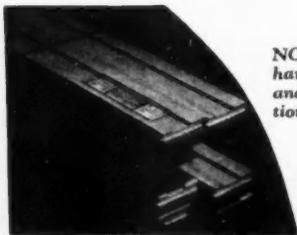
That NOFMA Oak Floors retain their smooth, well-groomed surfaces, because the flooring material itself is accurately milled from correctly seasoned oak lumber which minimizes shrinking and swelling, will be evident to the owner through years of satisfactory service.

That contractors and floor layers may be equipped with correct data for specifying, laying and finishing NOFMA Oak Floors (which also qualify for Federal projects) the NOFMA Master Work Sheet will be mailed on request. See also Sweets Catalog.

NOFMA Oak Floors are immediately available from local retail lumber dealers anywhere in the United States.

WRITE  
FOR THE  
NOFMA  
MASTER  
WORK  
SHEET

NOFMA manufacturers also produce hardwood flooring in Beech, Birch, Pecan and Hard Maple. For further information, ask your flooring dealer or write:



You'll identify NOFMA Oak Flooring by this label attached to the bundles, which certifies standards approved by the U. S. Department of Commerce.

**National Oak Flooring  
Manufacturers' Ass'n**

1150 DERMON BUILDING  
MEMPHIS, TENN.

## LETTERS from Readers on All Subjects

Facts, opinions and advice  
welcomed here

### Architectural Draftsman Likes Reference Data Feature

Fort Atkinson, Wis.

To the Editor:

I just received my October issue of the *American Builder* and I want to congratulate you on this particular number; for this is about the best issue that I have ever seen.

I think that your Reference Data Section is the answer to our dream. There is only one suggestion that I would like to make and that is: Would it not be possible to get this printed into a small two or three ring booklet form? The information that you have in this one issue is more and better than I have been able to get for several years by taking several magazines. If I can not get this in printed notebook form as suggested, I will copy all the information and get it down so that I can carry it in my brief case. Will also work out some sort of an index so that I can find it in a hurry. It is very handy when a person is out on some job and some question comes up to be able to answer by referring to your notebook.

ROBERT A. KRUEGER, Architectural Draftsman,  
Brittingham & Hixon Lumber Company.

### Waiting for Promises to Mature

Perry, Ia.

To the Editor:

The current issue of *Business Week* has an article describing a prefabricated plywood house at an unbelievably low cost. This house was worked out by the John B. Pierce Foundation in cooperation with the Douglas Fir Plywood Association.

As a subscriber to the *American Builder* the writer would like to see an article in your publication covering this house in detail. Although it is stated that the Foundation is proceeding carefully in laying out its marketing plans as they apparently are going to control the distribution, it appears that the results of their work should be made available so that builders could make use of it.

PERRY FEDERAL SAVINGS AND LOAN ASSN.  
By H. H. Spayde.

Answer:

An *American Builder* editor inspected the experimental plywood house built by The Pierce Foundation at Lebanon, N.J., some months ago and at that time did not feel that this house had sufficiently proved its practicability and application on a wide range.

We have seen too many articles, such as the one you mention, promising a supermarvelous new house at \$2,000 or less that raised the public's hopes to a high pitch and then let them down with a terrific thud.

When this experimental project has gotten to the stage where several practical, hard-headed builders find they can build them and sell them at a reasonable profit, we will feel that it is perhaps sufficiently proved to be reported editorially.—EDITOR.

### Wants Better Access to Basement and Front Door

West Springfield, Mass.

To the Editor:

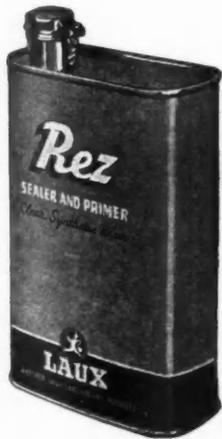
We are about to start the second house on our sixty-acre tract, called Bretton Wood Hills, and hope to continue as we sell. Our houses, complete with lot, will run from \$6,500 up. The first one, which is sold, is costing about \$8,000. Our lots are all large, many of them slightly, and most of them are well supplied with trees.

I find the *American Builder* of much assistance. For twenty-two

(Continued to page 86)

# HOW REZ PREVENTS GRAIN RAISE

Trade Mark Reg. U. S. Pat. Off.



## The REZ Line (Synthetic resin finishes)

- REZ  
synthetic resin  
sealer, primer
- REZITEX  
exterior resin  
plastic paint
- REZICOTE  
stucco, brick,  
cement paint
- PLASTEREZ  
interior resin  
plastic paint

Specify plywood, doors, millwork finished-at-mill

REZ REVOLUTIONIZES wood finishing! Here is "magnified" proof that REZ seals by penetration, binds down soft Spring wood fibers! See exactly what happens when soft lumber is treated with Laux REZ. When untreated wood comes in contact with water or ordinary finishing liquids, the result is grain raise, uneven surface. No amount of paint could smooth it. Now look at the REZ treated part! REZ penetrates deep into wood fibers, anchors them down! Notice the smooth, even surface that takes lacquer, varnish, wax or paint beautifully. It "finishes like hardwood." The REZ treated board is preserved, protected from decay, abrasion, binding and moisture. Write for free REZ sample or for further information.

## LAUX SALES CO.

(Division of I. F. Laucks, Inc.)

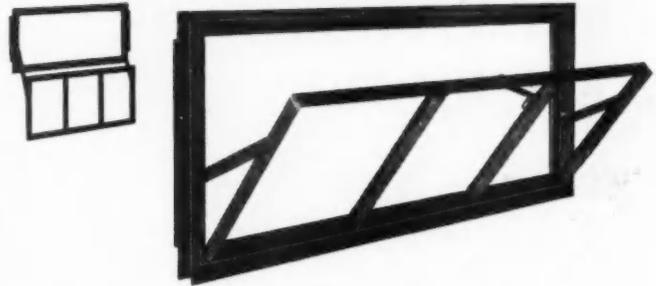
Seattle, Oakland, Los Angeles, Chicago, Minneapolis, Houston, Portsmouth, Va.; Vancouver, B. C.

Stocks available nationally: Harbor Plywood Corporation, distributors and warehouses in 22 leading cities; Lumber Reserve Supply Co., Des Moines; Reserve Supply Co., Minneapolis; Minot Builders, Minot, N. D.; Building Service, Great Falls, Mont.; Kobler-McLister, Denver; Rust Sash & Door Co., Kansas City; 4-States Supply, Carlsbad, Mo.; E. W. Camp, Cincinnati, Indianapolis; Lawrence R. McCoy, Worcester, Mass.

## TO PUT SELLING PUNCH INTO YOUR BASEMENTS

without adding to costs

use VENTO "CHAMPIONS"



Capitalize on the intense interest in more livable basements with VENTO CHAMPIONS. They provide many advantageous features which prospective home owners are quick to spark to. For instance:

### INDIRECT VENTILATION WITH WEATHER AND DIRT PROTECTION

Generous top opening, permitting an abundance of indirect ventilation free from drafts (particularly desirable in laundry and recreation rooms). Prevents dirt, leaves, rain and snow from blowing in.

### PLUS FULL OPENING—QUICKLY AND CONVENIENTLY

The "Champion" has a practical, easy-operating cam lock with inbuilt ring and may be opened to any of the two positions indicated instantly. Accurately and substantially constructed, well-balanced, it always operates smoothly without sticking or binding.

### PLUS MANY STRUCTURAL SUPERIORITIES

1. Heavy double channel, pressed steel frame.
2. All-welded construction.
3. Unequaled ease for detaching ventilator from frame.
4. The most practical method of puttyless glazing.
5. Top of frame is easily secured to lintel.
6. Design of frame provides the easiest means of securing weather-tight installations.
7. Carefully prepared for quick and easy attachment of screens and storm sash.

### ALL AT NO ADDED COST

In fact the "CHAMPION" is definitely priced below many other first line basement sash.

CHAMPION

UTILITY

SECURITY

### A COMPLETE LINE OF WINDOW PRODUCTS

VENTO offers you a complete line of window products for all types of buildings—and suitable to all architectural styles and purposes.

See your Dealer for particulars on the entire line or write us for descriptive booklet on any type in which you may be especially interested.

The Vento Steel Products Co. has an enviable record for dealer cooperation.

BARN WINDOWS

CASEMENTS

COAL CHUTES

## VENTO STEEL PRODUCTS COMPANY MUSKEGON, MICHIGAN



## ... The Best Things in Life are FREE!

**M**OTHER NATURE is mighty generous with her gifts. Even a barefoot country boy can enjoy the crisp air of early Fall—the crystal clearness of a flowing stream—the keen adventure in an afternoon's fishing. Yet, some of us refuse the gifts of Nature and pay hard-earned cash for things which she offers free in profusion.

Take casein paint, for example. Some people buy it in paste form and pay a good stiff price for water (common ordinary river water) added by the manufacturer. Others, more shrewd perhaps, buy Modex, the modern casein paint in powder form and save substantially by adding their own water (one of Nature's most generous gifts). The saving is about 25%—one quarter of your entire paint cost. For an interesting booklet about Modex Powder Casein Paint, write The Reardon Company, 2200 North Second Street, Saint Louis, Mo.

## LETTERS—

(Continued from page 84)

years I have been brokering and it is a pleasure now to be able to offer to my clients a house of whose design and construction I can be proud. We are at the minute specializing in homes with five rooms and bath on the first floor and a plan for future development of the second floor.

May I suggest that you might concentrate on Colonial fences in some future issue, with pictures of houses where they have been used with good effect?

In looking over magazine plans I find so many fail in supplying easy access from the kitchen to the cellar and front door without passing through the living room, as well as large enough bedrooms and living rooms. After all, one should always think of resale value when planning a moderate priced house. Twenty-five dollars saved when the house is built may mean the loss of many times that sum when it comes to reselling.

OLLA N. AMES,  
Real Estate.

## To Rid Basement of Dampness

Detroit, Mich.

To the Editor:

We were interested in an open letter appearing in your September issue by Mr. Oddy of Detroit, requesting information on equipment for preventing condensation in basement recreation rooms. In our business of waterproofing contractors we were called in so many cases where supposed wall leakage in basements was actually condensation that we undertook to develop a machine that would effectively combat this problem. Our Drynodor dehumidifier is the result of our efforts.

The Drynodor is a compact, self contained air conditioner about the size of a large radio console. The unit consists of a quiet type blower, collecting sump and drying chamber. The machine employs the inexpensive but very highly deliquescent flake calcium chloride as a drying agent. We not only obtain a very low operating cost, but a drying agent more effective than refrigeration. Our equipment costs but a fraction as much as refrigerating or silica gel equipment. While originally designed as a dehumidifier, we found that these machines also have a definite deodorizing action. Thus when installed in cool basement rooms, a nearly perfect air conditioning results, since the machine dries, deodorizes and removes entrained dirt. Basement recreation rooms thereby become more enjoyable, particularly in hot weather.

To install, it is only necessary to set the Drynodor cabinet in the space to be conditioned, and insert its extension cord in a convenient outlet. The moisture removed from the air collects in an ample sump in the base of the cabinet. To service, merely drain the sump periodically and add fresh drying agent. The device is so designed that air flow ceases in the event that too much water is allowed to collect before draining, so that the machine cannot overflow and cause damage.

THE DRYNODOR COMPANY,  
By Floyd H. Heineman.

\*\*\*

## McCarthy Sells Insulated Houses

(Continued from page 41)

civic club and helps in the organization of outings, putting up Christmas lights and trees, running contests and prizes and various social get-togethers. He says that all of the 100 members are boosters for Glendale and are his strongest supporters in bringing in new home buyers.

One of McCarthy's recent stunts illustrating his friendly personality was the presenting of a brand new shovel to a pair of newlyweds so that they could dig the first shovelful of earth on their new house. Then he gave them a key and told them that when they got back from their honeymoon the house would be ready for them to move into, and all they would need to do was put this key in the door.

Model homes bring thousands of people to Glendale.  
(Continued to page 88)

O  
Tile  
your  
home  
Simp  
wall  
add  
the  
buil  
Bath  
room  
fussy  
—m  
sales  
For  
floor  
app  
his  
and

T

The T  
Chicag  
If my  
the Tile

Name...

Address

# LET TILE-TEX SELL FOR YOU



ONE look at a colorful, modern bathroom, with resilient Tile-Tex floor and decorative Tile-Tex walls will convince your home-buying prospect of the plus value you build into a home.

Simple and easy to install, inexpensive to maintain, Tile-Tex walls and floors become a positive and active sales aid. They add real live color and up-to-the-minute modern designs to the key rooms of a house. They can make the homes you build possess that added "something" that closes the sale. Baths, kitchens, laundries, recreation rooms—these are the rooms that do much to sell a home—women in particular are fussy about these areas. Build these rooms better with Tile-Tex—make them different from your competitors, and watch your sales grow.

For new jobs or for modernization work, Tile-Tex walls and floors mean low first cost and high sales appeal. Our nearest approved contractor has a real fact story for you. Ask for his name and copies of the new Tile-Tex folders on floors and walls.



## OR YOU MIGHT CARE TO REPRESENT US IN YOUR TERRITORY

The Tile-Tex Company,  
Chicago Heights, Illinois

If my territory is open, I would like to have complete information on the Tile-Tex Dealer's proposition.

Name.....

Address.....

A-11

# MANUFACTURING OPPORTUNITY



**FOR YOU IN YOUR CITY** — One that is complete and proven — Successful in other localities. Ready for you now to cash in big on the wide building upturn under way and the definite trend to more permanent, lower cost production.

**THIS OPPORTUNITY** offers attractive earning power and future. Present manufacturers have proven and pioneered the way for you by establishing substantial businesses of their own. Today millions of products have been manufactured, thousands of buildings have been built with this material.

**THIS OPPORTUNITY** is the result of exclusive line production machinery which we will furnish. With it, plus other exclusive advantages, you will be able to supply the entire building trade with more attractive and permanent construction with savings at every step, from manufacturing to the completed job.

**YOU WILL BE SUPPLIED** with new processes and formulas to enable you to manufacture products in 40 beautiful colors, shades and textures. Your product will be capable of meeting all known building requirements.

**YOU WILL BE GRANTED** manufacturing franchise covering your locality, protecting your market, business and future, with available engineering and advertising service for early expansion of your business.

**YOU SHOULD INVESTIGATE** while your territory is still open. Arrange to visit the nearest manufacturer and talk to the owner about this outstanding opportunity. So fill in coupon today. Perhaps the first step to a successful, profitable enterprise for you.

W. E. DUNN MFG. CO.  
450 W. 24th St., Holland, Michigan

11-32

Show me through your free books all about this outstanding and complete manufacturing opportunity for me in this territory.

How I can visit a nearby manufacturing plant and see how better buildings are being built for less with your new material.

Name .....

Address .....

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

That "Edge" you Need  
to Overcome Competition!



American Walnut  
panels to complete  
this 12x15' living  
room now cost  
less than \$60.00

**DeLuxe WELDBORD**  
panels are hot-press resin  
bonded with face-grain  
running the long way of  
panel—in Walnut, Oak or  
Mahogany, 4' x 8' x 1/4",  
natural or pre-finished.

NATURAL

@ **17 1/2¢** sq. ft.

F.O.B. WAREHOUSE  
PREFINISHED

@ **22 1/2¢** sq. ft.

F.O.B. WAREHOUSE

— : : —

### GETTING BUSINESS

to-day is largely a matter of thinking and acting more quickly than your competitor. The architect or builder who offers a room or rooms finished with **DeLuxe WELDBORD** Decorative Hardwood paneling not only steals a march on the opposition but also gives his client a more beautiful, more lasting and more economical job.

for DRI-WALL Construction  
use **BLUE LABEL WELDBORD**

the hardwood plywood wallboard which takes paint or wall paper perfectly. Cross-grain construction for extra stiffness—check-proof surface—no grain raising.

**7 1/2¢** PER  
SQ. FT.  
in most localities

LUMBER DEALERS! Write for details of our "We-Stock-It" Selling plan and dealer discounts from quoted prices

**UNITED STATES PLYWOOD CORP.**

616 WEST 46th ST., NEW YORK

Branch Warehouses and Offices  
in all principal cities

**DeLuxe WELDBORD**  
DECORATIVE HARDWOOD PLYWOOD PANELS

## McCarthy Sells Insulated Houses

(Continued from page 86)

His last model was a Johns-Manville Triple-Insulated house which sold within a few days after the opening. Another customer was very anxious also to buy this home, and McCarthy has agreed to duplicate it, with minor exterior changes, in another part of the development. "Every visitor to a model home is not only taking a step towards becoming a prospect himself, but he may tell ten others about your home," McCarthy told *American Builder*. He described selling a house the previous week to a man who had visited a model home three years earlier. Every model home has resulted in the sale of from five to ten houses, he declared, and in a characteristic fashion added: "It's the spark plug of the whole development."

\* \* \*

## Government Explains Anti-Trust Drive

(Continued from page 35)

who refused to participate in such boycotts have been themselves boycotted. In other cases boycotts have been instituted against manufacturers who sell direct to consumers. From the point of view of distributors, such schemes have been efforts to keep all business in their own hands. From the point of view of manufacturers they have usually been devices to strengthen a system of price-fixing.

By contrast with the variations among manufacturing and distributing industries, there is a marked similarity in the restraints found in various cities among local dealers, contractors, sub-contractors and labor groups. Of course, not all of these practices are to be found in any one city, nor do they all appear in any one trade. Since it would be obviously improper for me to forecast the findings of the Chicago grand jury, I shall describe the general pattern but shall not attempt to indicate what parts of it exist in Chicago.

### Dealers

Local groups of dealers in building materials sometimes attempt to prevent the use of materials sold by outside enterprises, particularly by mail-order houses, commission salesmen, and manufacturers who sell direct to the builder or the consumer. In some cases the sellers who use such unorthodox methods of distribution are boycotted by the dealers and thus excluded from the channels of trade for other products which they may wish to sell through dealers. In other cases local contractors are persuaded not to buy the offending products or local labor organizations are persuaded to refuse to work upon buildings in which such products are used.

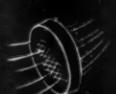
This effort by groups of dealers to keep all business in their own hands is often accompanied by efforts to fix the prices at which building materials shall be locally sold. Sometimes this price-fixing springs exclusively from the dealers' desires to fix their own operating margins; sometimes it is a part of a broader price-fixing plan in which manufacturers and wholesalers participate.

### Contractors

The most conspicuous restraints by general contractors are efforts to allocate business and to raise and fix the level of bids for business. In submitting their bids to the prospective owner of the building, general contractors sometimes agree in advance who shall be the successful bidder, work out a collusive bidding level by an exchange of the bids they intend to make, or pad their profits by collusively using a padded estimate of the amount of materials and labor required for a given structure. Such restraints, however, appear to be much less prevalent than restraints by other groups in the industry.

(Continued to page 90)

THE IMPROVED  
*Payne*  
**ZONEAIR**  
LICKS 5 BIG  
HEATING  
PROBLEMS!

-  HEATS
-  FILTERS
-  VENTILATES
-  HUMIDIFIES
-  CIRCULATES

Here is a gas-fired Payne Unit which is a jack-of-5-trades—and master of them all! It heats—filters—ventilates—circulates—and humidifies, all automatically.

The improved Payne Zoneair gives the homeowner year 'round weather control—24 hours a day—from bedroom to basement. Used individually to heat separate groups of rooms, it provides zoned winter air conditioning.

Architects and builders everywhere are acclaiming the improved Payne Zoneair as the last word in modern home comfort-insurance.



MECHANICALLY, HERE'S WHY:

- **HEATING ELEMENT:** Stream-lined design of heavy metal. All-welded. Maximum efficient heating surface.
- **BLOWER:** Long hour motor assures smoother operation. Large size fan wheel gives more efficient air delivery through the unit.
- **QUIET OPERATION:** Blower, motor, and all moving parts are floated on rubber cushions.
- **OPTIONAL LUMINOUS FLAME BURNER:** Exclusive with Payne. guarantees efficient combustion of manufactured gas.
- **FILTER:** 25% more filter area. Finest grade, replaceable type spun glass filters.
- **ACCESSIBILITY:** Heating element, blower, motor, filter, control panel—every part may be quickly and easily reached.
- **SIZES:** Five sizes (60,000 to 200,000 B.T.U. input rating) used singly or in combinations cover every home heating requirement.

For further information see your Payne dealer, or write

*Payne*  
**FURNACE AND  
SUPPLY CO., INC.**  
Beverly Hills, Calif.

New! **SKILSAW  
FLOOR SANDER**

WITH THE PATENTED

*Rotoglide*  
SANDING DRUM



No other floor sander has this new kind of sanding drum—specially designed to reduce drastically floor finishing costs! Because there is no slot across the entire drum, because a part of the sanding surface is always in contact with the floor, the **ROTOGLIDE** Drum has a better balanced action, without the bumps that make sanding wavy, that wear out paper too fast in ordinary floor sanders!

- ELIMINATES BUMPS!
- PRODUCES SMOOTHER SANDING!
- REDUCES PAPER WEAR!

**SKILSAW** presents America's outstanding floor sander—designed by a group of practical floor surfacing contractors—leading the entire field in mechanical construction and operating performance! It incorporates many advanced features found in no other machine. It is more compact, more efficient, more convenient to handle. It will produce more square feet of fine sanding . . . easier, faster and at lower cost! Send for interesting folder that illustrates all of its superior mechanical features.

**SKILSAW, INC., 5031 ELSTON AVENUE, CHICAGO**

36 East 22nd St., New York • 182 Main St., Buffalo • 52 Brookline Ave., Boston • 15 S. 21st St., Philadelphia • 2124 Main St., Dallas 918 Union Street, New Orleans • 1253 South Flower Street, Los Angeles • 2065 Webster Street, Oakland • 29 North Avenue N.W., Atlanta • Canadian Branch: 85 Deloraine Ave., Toronto

Sales agents wanted! Important locations still available.





## YOU'LL AGREE THIS IS SENSIBLE

In a flash, you read the black-on-white markings of a favorite Wyteface Steel Tape! That is one of the major reasons for its wide popularity. You save time—you have almost no chance for error—even in poor light. You will quickly agree that this is the most sensible steel tape made.

But that's not the whole story. The crack-proof white surface is bonded to the steel—protects it from corrosion—greatly pro-

longs the useful life of the tape. Favorite Wyteface is hard to kink, hard to curl. It is easy to clean. It is popularly priced.

Your building material or hardware dealer can show you this improved steel tape in 25, 50, 75 and 100 ft. lengths. Mail the coupon below for a free sample of the tape and an illustrated folder.

EST. 1867  
**KEUFFEL & ESSER CO.**  
NEW YORK — HOBOKEN, N. J.  
CHICAGO - ST. LOUIS - SAN FRANCISCO - DETROIT - MONTREAL



**K & E**  
**FAVORITE WYTEFACE**  
STEEL MEASURING TAPES

LOOK  
FOR  
THIS  
DISPLAY



KEUFFEL & ESSER CO., Dept. 97, Hoboken, N.J.  
Send sample and folder on Favorite Wyteface.

Name.....  
Address.....

## Government Explains Anti-Trust Drive

(Continued from page 88)

### Sub-contractors

In submitting bids to general contractors, groups of sub-contractors have worked out more elaborate restraints designed to control bidding. They may directly allocate business and collusively determine the level of bids. Frequently they deposit duplicates of their bids in a central office in order to make it easy to exert pressure upon low bidders to raise their bids. Sometimes they require that bids which are lower than the average by more than a stated percentage shall be automatically thrown out.

In addition, many of them have devised elaborate rules as to the method of bidding, designed to restrict the general contractor's freedom to bargain with sub-contractors. Among such rules are the requirement that bids be deposited in a central office in order that the successful sub-contractor's contract may be checked against the bid filed with the depository; requirements that the general contractor must accept without further negotiation one of the bids submitted to him by one of the bidding sub-contractors; rules that a general contractor may not call for bids after submitting his own bid; rules that any extra work which was not included in the original contract belongs to the successful sub-contractor and may not be sought by any other sub-contractor; rules standardizing the terms of the contracts; and rules establishing methods of cost calculation which must be used in arriving at sub-contractors' bids.

In addition to these bidding restraints, various groups of sub-contractors have arranged with the unions to exclude from the market contractors who are not members of the contracting ring. In some cases, the sub-contractors' association maintains high membership fees and labor is denied to sub-contractors who have not joined. In other cases, special restrictions are imposed upon employment by out-of-town sub-contractors, designed to handicap them in their competition with local sub-contractors. In extreme instances a complete control over the behavior of sub-contractors is set up by means of a requirement that, to obtain union labor, every job must display a registration certificate which may be awarded to or withheld from any sub-contractor at the unchecked discretion of an agent representing either the sub-contractor's association alone or the association and the union jointly.

### Labor

In the case of labor, as in the case of dealers, contractors, and sub-contractors the situation differs from one city to another. In some cities building trades labor is not organized; in others the activities of labor groups consist of collective bargaining over wages, hours, and working conditions. With these activities the Department has neither the desire nor the right to interfere.

But in some cities the leaders of certain building trades unions have engaged in three sorts of restraints. First, they have used their control of the union to set up rules that pervert organized labor groups into strong-arm squads which enforce restraints in the interest of sub-contractors and dealers in building materials. The withholding of labor from independent employers, in spite of their willingness to deal with the union and to observe union wages, hours, and working conditions, is the most conspicuous means employed. Second, certain racketeering business agents have enriched themselves by collecting private graft in the form of strike insurance; in extreme cases they have even let those who pay such graft ignore the union wages, hours, and working conditions which must be observed by other employers of union labor.

Third, some business agents have enforced a series of union regulations designed, not to insure reasonable wages, hours, and working conditions, but to prevent the introduction of modern construction methods and thereby to require that an unnecessary number of hours of labor be used upon each building. Some of these regulations prohibit the use of new materials, particularly of those which have been fabricated in a shop rather than at the building site; some prohibit the use of new and more efficient tools; some require that the building itself shall be constructed to unnecessarily elaborate specifications; some conceal, under regulations as to the composition of the work force, a requirement that unnecessary labor be hired.

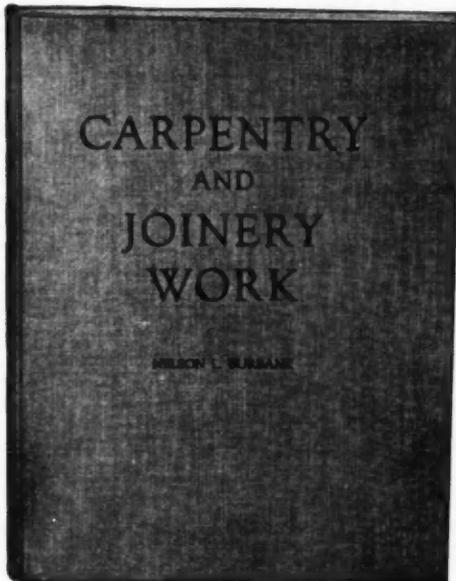
Largely by means of restraints such as I have just described,

(Continued to page 94)

# New Third Edition CARPENTRY and JOINERY WORK

By Nelson L. Burbank

Formerly Instructor, Building Vocational High School,  
Cincinnati, Ohio



The new Third Edition has been thoroughly revised with 85 new pages. A complete set of stock plan blueprints is included.

The manuscript was carefully checked by a former contractor and ex-editor so that this book combines the practical outlook with the author's trade teaching experience. The cardinal principles of modern residential construction are set forth simply and logically with the aid of many photographs and line drawings.

The program of study as presented in this latest textbook for students of carpentry work involves class discussion, practical job work and related studies. These include Architectural Drawing, Plan Reading, Carpentry Mathematics, Business English, Applied Science, Civics and First Aid.

280 pages, illustrated, 8 1/2 x 11 inches. Cloth Bound, \$3.00

BOOK DEPARTMENT

**American Builder and Building Age**  
30 Church Street New York, N. Y.

*Stop*  
Costly Hand-  
Sanding and Scraping

**2 PORTER-CABLE TOOLS**  
Every Builder Should Have

**1.**

*New!*  
**TAKE-ABOUT**  
(82-19)  
DUSTLESS  
SANDER

Ideal for your shop! Fast, clean, powerful sanding that saves time and money on frames, doors, wash panels and other mill work. Has unusual dust pick-up, also complete dust protection of motor. Ball bearings throughout for continuous smooth running and long service.

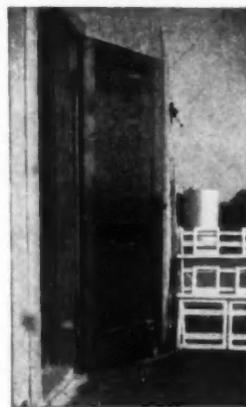
**2.**

*New!*  
**PORTER-CABLE**  
(Type AE-7)  
POWERFUL  
EDGER

Does the hardest part of floor finishing the easiest way. No more hand scraping! Sands edges clean, in perfect match, up to quarter-round. Use it in closets, alcoves on stair treads. Handles easily 7" disc cuts with exceptional speed and power.

These two electric tools speed up and ease up all your sanding jobs. Progressive builders say they turn costly work into profitable operations. See a demonstration—no obligation. Call your PORTER-CABLE representative—(see phone book)—or write direct for full details TODAY!

**PORTER-CABLE MACHINE COMPANY**  
1721 No. Salina St., Syracuse, N. Y.



## INSIDE DOOR USED OUTSIDE

—photo taken from our east test rack roof

For 2 years, 5 months this door has seen service as an outside door opening out on a concrete floor to an eastern exposure.

**DOOR:** 2-panel door—fir plywood with pine stiles and rails; dipped for 3 minutes in WOODLIFE TOXIC WATER REPELLENT, then given 2 coats of varnish.

**SERVICE RECORD:** As there is no roof to shelter door it is subjected to rain, snow, sun, etc. Today (Sept. 25, 1939) the door hangs straight without warp or twist, swings freely; has never stuck due to swelling; varnish in excellent condition.

WOODLIFE does help to solve door problems. You are invited to investigate fully.

**Protection Products Mfg. Co.**

Mfrs. of PRESERVATIVE SOLUTIONS for **18** Years  
Research Laboratory and Plant KALAMAZOO, MICH.

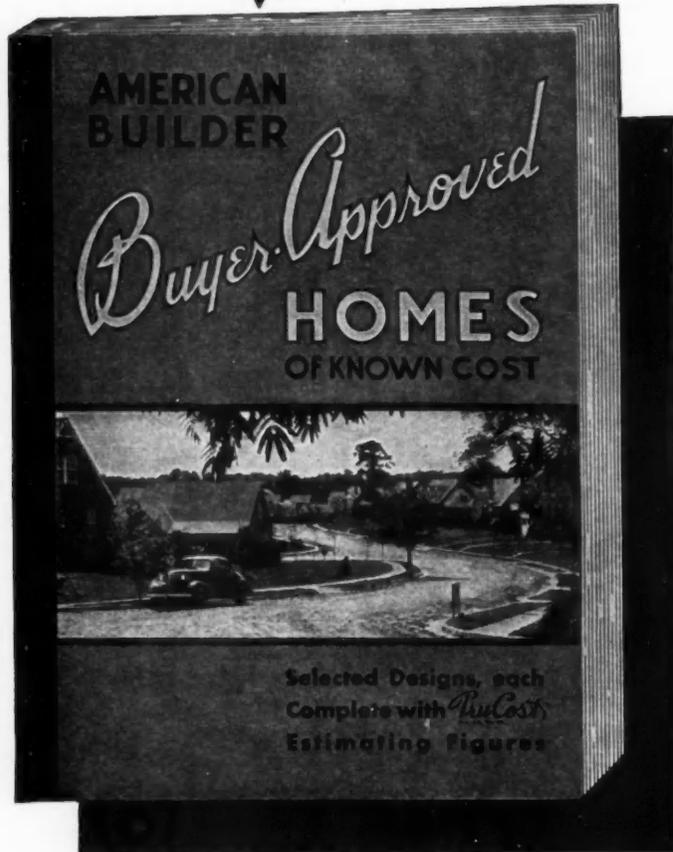
# Here's the Answer

to the host of challenging questions to be thrust at building professionals in the home building upsurge coincident with the European War and the bettering of business conditions here.

Presenting 96 Homes of distinctive merit.

With exterior views and large dimensioned floor plans for each—many of them with charming interior views and outline specifications.

Dependable "Tru-Cost" figures for each home, with 27 pages fully explaining the "Tru-Cost" method of quick and accurate estimating.



Representing all the popular architectural types.

The cream of the crop, gathered from all sections — the best current work of highly successful architects and builders in busy home building centers.

180 superbly printed pages—330 illustrations — beautifully and durably manufactured — a Sales Manual De Luxe, without an equal anywhere.

## These Selected Homes Embody to the Nth Degree Salability—Livability—Security—Sound Investment—Substantial Savings in Cost

### A New High in Country Home Charm

is reached in two gemlike New England Colonials, a type of semi-suburban and rural homes such as now can be financed under FHA. Thoroughly modern, and fully equipped for former city apartment dwellers, yet retaining all the dignity of Colonial days. You'll find them on pages 48 and 49.

### A Wichita Cape Cod

that has decided livability and flexibility, in that from two to five rooms can be used as sleeping quarters, including a bewitching den (shown on page 65) with knotty pine paneling and built-in bookcases. An attached garage is next to the kitchen. Six rooms on the ground floor. With outline specifications.

## Homes that Make for Cheerier, Easier Housework

### Apartments Designed for Young Moderns

in Deerfield, Ill. Four units of four rooms each occupy the two floors, with a basement providing adequate storage, boiler room and generous laundry. With a front view of the exterior and a full page of plans and construction details.

### An Ohio Builder

has built up a reputation for quality work by putting his houses together with screw nails. One of them is shown on page 62. This is a neat 6-room Early American, using stone on the first floor front, with vertical boards and battens above.

**MORE DETAILS ON NEXT PAGE**



copy of "American Builder Buyer-Approved Homes" is included with a paid-in-advance new or renewal American Builder subscription order, accompanied by \$2 for one year, \$3 for two years, or \$4 for three years. To get YOUR copy use the form at right.

Continued from preceding page

### Teeming with Sales Dynamite and Client Acceptance

#### A Home That Meets Buyers' Demands for Modern Features in the Medium Size and Cost Range

In Scarsdale, near Chicago. Planned and built after a careful test of public reaction to various new features—methods of room arrangement, exterior design and equipment items. Full page of floor plans and elevations of stair, mantel, casing, base, cornice, corner mullion, etc.

A Gem from the Old South . . . White Plains "Picture" Home . . . 5-room California House on a Hillside . . . A Port Chester Cottage that Hugs the Ground . . . Attractive shingled LaPointe Model Cottage . . . Low Cost Texas Home . . . A bunch of extremely popular Low Cost Homes in Florida.

#### What Kind of a Home Would a Builder Put Up for Himself?

An intriguing question! And one that is most satisfactorily answered on page 41. In plan the house is uncommonly efficient, with the seven rooms grouped for good access. Features include well lighted breakfast nook, secluded library with lavatory, doors leading from two rooms to rear terrace and center hall circulation. It's a good seller wherever it is patterned after.

Modern Version of New Orleans Colonial . . . Small 6-room Beauty in Connecticut . . . Dutch Colonial at Montford Hills (a case study in good design) . . . Colonial Charm of Old Williamsburg re-living in homes recently built in White Plains and Port Washington . . . "Orchard House" from Mississippi.

#### A Cedar Rapids Corner Lot Colonial

is presented on page 78, offering two very fetching elevations facing both streets. Living room fireplace chimney on one side balances the extending wing of the front bedroom on the other. Generous room sizes.

Popular Hartford Home with Breezeway connecting kitchen with garage . . . Well planned "Plymouth Haven" Homes grouped about a court . . . Homes illustrating Mass Production Methods at Clairton, Pa. . . An appealing Home Built for Lumber Workers by Resettlement Administration.

Every April, "The Spring Building and Directory" issue of American Builder

### The Two BIG Events of Each Year in the Building Industry

Every October, "The Fall Design and Planning" issue of American Builder

AMERICAN BUILDER, New .....  
30 Church Street, Renewal.....  
New York.

For the enclosed \$..... enter  
my subscription for 1 year, \$2.....  
2 years, \$3..... 3 years, \$4.....

And Include AT NO EXTRA COST  
a copy of "AMERICAN BUILDER  
BUYER-APPROVED HOMES"

Name .....  
Street.....  
City .....  
State.....  
Occupation.....

*This offer good only in United States, its Possessions and Canada*

11-39

### Specially Featured

A number of attractive houses for more than one family. . . . Home Designs for Summer Comfort in Cottages and Vacation Cabins. . . . New ideas for Gracious Interiors. . . . A Basement that won First Prize. . . . New Standards of Convenience Now Being Built in Kitchens.

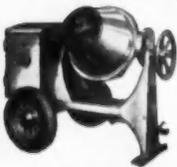
Triple-Insulated Portland Home. . . . Florida Bungalows in Concrete. . . . All Hardwood Home built for 300 years in Montgomery. . . . Compact Economy 5-room Home in Milwaukee. . . . 7-room English House with three baths at Glenayre, near Chicago. . . . Dry-Wall Homes for \$43.85 per month. . . . \$40,000 Quality in a \$6,000 House (you ought to see how it can be given!)

How Good Planning Saves on Plumbing Costs. . . . How Built-in Mirrors can Build Up Profits. . . . How Adequate Wiring can be made to give 100% Increase in Livability at only 2% Increase in Cost. . . . Combination Stable and Garage (even the ponies are shown!). . . . Three Exteriors for One Plan. . . . A number of houses built on more than one level.



**30% to 40% MORE CONCRETE  
with this Latest Jaeger 3 1/2 S**

• Load Measuring Batch Hopper (12" lower) while you mix and discharge — fast as a power loader.



**3 1/2 S HIGH SPEED  
FILTER TRAILER**  
Also 5S, 7S, 10S, 14S  
Power Loader Non-Tilts  
with Automotive-Type  
Transmission, Machined  
Steel Drum Tracks.

- Criss - Cross "Re" - Mix Drum gives more thoro mix, faster discharge.
- Accurate Measuring Water Tank is fast, syphon type.
- 3 3/4 H.P. Air-Cooled Wisconsin Engine — lightweight, compact.
- End Discharge Design — handy to pour, fast to trail on Timken Bearings, Springs, Pneumatic Tires.
- Most advanced mixer on market. Get new Catalog and prices.

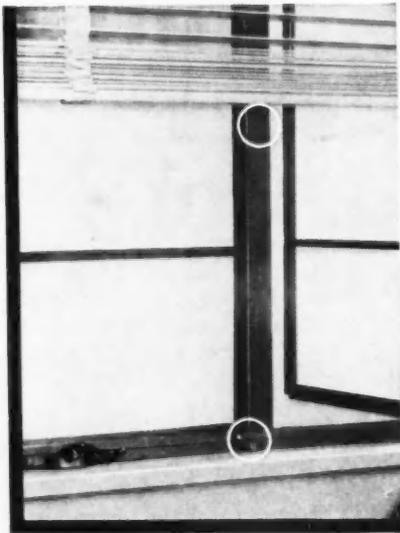
**THE JAEGER MACHINE CO.**  
521 Dublin Ave. Columbus, Ohio

**JAEGER 1940 SPEEDLINE**

**NEW!**

**FOR STEEL CASEMENTS**  
*concealed sill lock . . .*

- 1 Replaces center locking handles
- 2 No screen interference
- 3 Applicable to all casements
- 4 New convenience and economy



"Bolt-Fast" is the name of this new Win-Dor lock which simply and efficiently overcomes the locking handle problem on steel casement windows and yet adds no extra cost to any installation. Action is positive and strong. Convenience is obvious where stools are high and above normal reach such as over sinks. And, "Bolt-Fast" provides a definite economy in screening as full width screens may be used at less cost than single screens for each vent. Specify and get this lock on your next steel casement job. It has selling points you can use.

**The Casement Hardware Co.,**  
406 N. Wood St.,  
Chicago, Ill.  
Gentlemen: Send me full information on Series 400 Lock. I use . . . . . windows.

Name . . . . .  
Address . . . . .

• Win-Dor No. 400 "Bolt-Fast" is standard equipment (upon specification) with more than one steel window manufacturer. Send coupon today for complete information so that you can "streamline" your next job with this lock. This is the original "Bolt-Fast" developed by Win-Dor U. S. Patent No. 217485.

**Government Explains Anti-Trust Drive**

(Continued from page 90)

the costs of building have been kept at high levels in spite of the partial idleness which has resulted from the American people's inability to pay these costs. The ratio of building material prices to other prices rose by more than 10 per cent between 1926 and 1937. During the recovery, building material prices rose more rapidly than other prices, in spite of the fact that on the down grade the prices of building materials fell less rapidly than other prices. The stairstep characteristics of these prices are largely due to restraints by manufacturers and distributors. Construction costs, which reflect the restraints by local groups also, showed a similar record. The three private indexes of construction costs which go back to 1929 agree in showing an upward movement of such costs relative to the general level of commodity prices. One of them shows construction costs in 1937 about 20 per cent higher than in 1929. The other two show construction costs about 10 per cent lower than in 1929, whereas the general index of commodity prices fell from 1929 to 1937 by more than 10 per cent.

The rapid inflation of construction costs during a period of revival is illustrated by the experience of 1936-37. In one year the national average of costs in the construction of a standard small house, as reported by the Federal Home Loan Bank Board, rose about 10 per cent and the average in some large cities rose as much as 25 per cent. This increase was largely responsible for the recession in building which took place in 1937. In spite of the sharpness of this recession, decline in building costs was very slow; so that in the summer of 1938 the cost of a standard house was still about 7 per cent greater than in 1936. Partly because of the persistence of this relatively high level and partly, no doubt, because of the publicity given to the present investigation of building restraints, the renewal of an up-swing in building during the last year has brought only isolated increases in prices and costs. Indeed, the general average of such costs has fallen about one per cent during the last year.

Apart from their immediate effect in supporting high building costs which limit construction, the restraints upon building are a major handicap to pioneering in the building industry. The Department has encountered cases in which new and cheaper building materials are kept off the market for fear of boycotts by dealers or by unions. It has found a considerable number of architects and builders whose experiments with simplified forms of construction have been harassed by groups anxious to protect their vested interests in the old ways of doing things. Until such experiments are given a fair trial, no one can say to what extent they may lower building costs. It is clear, however, that the methods which have led to low cost production in other industries have, for the most part, not yet been adapted to the peculiar circumstances of the building industry. It is, therefore, particularly important that those who accept the economic hazards of an effort to modernize the building industry shall be protected against the additional hazards of having to fight a guerilla warfare against organized groups anxious to destroy them.

**What May Be Accomplished by These Proceedings?**

In many cases the accretion of restraints upon building has caused dismay even among those engaged in such restraints. Individually they have been caught in a system of restraint too prevalent to be successfully resisted by a single enterprise or a single local union. The prevalence of complaints from within the industry is evidence of the desire for help in getting rid of this system. Even the preliminary investigations by the Department of Justice have led, in certain cases, to the abandonment of certain collusive practices, the dissolution of certain bidding rings, and the lowering of certain prices. It is believed that the majority of the industry will take advantage of the opportunity offered by the Department's broad attack to set its own house in order. Prosecution of the entire system of restraints which may be found by grand juries in selected cities throughout the country will provide an example for other cities and will permit the allocation of public monies devoted to housing at the points where the removal of restraint has made possible the greatest return per dollar expended. By formulating and enforcing a minimum standard of competitive conduct for the industry, the Department expects to secure acceptance of that standard over wide areas without the need for prosecution at every point.

(Continued to page 95)

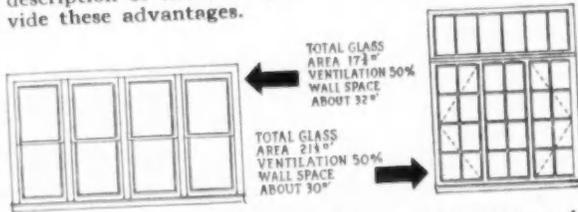
# WIN-DOR Hardware makes the wood casement the MODERN window.

## NOW STANDARD ON NEWEST PRE-FIT WOOD CASEMENTS

Whether stock sash, custom-built or pre-fit units, WIN-DOR provides the best means of proper control and complete efficiency.

Today, the wood casement window owes its remarkable operating efficiency to the correlated hardware units pioneered and developed by WIN-DOR: *Automatic* locking and operation . . . *Automatic* closing at top and bottom . . . *Outside* cleaning from the inside and the definite advantage and convenience of *inside screening* and inside storm sash.

Whether stock sash, casements made to order by the local mill or complete units pre-fitted at the factory, if they are WIN-DOR equipped, you will have casements that will be a selling feature in every house you build. The *advantages* that WIN-DOR hardware brings to casements are given below with illustrations and description of the three pieces of hardware that provide these advantages.



Do you know that with this type of window you can use better sash, buy WIN-DOR quality hardware and yet *spend* no more for the same wall space opening and ventilating area? These diagrams show why: that with a properly arranged casement unit you can save 3" of usable wall space that would be taken up by double-hung windows of the same glass area.

### WIN-DOR EQUIPPED CASEMENTS PREFERRED for these reasons:



**VENTILATION:** Fully controlled draftless ventilation; *all* of the window opening if desired.

**CLEANING:** As illustrated WIN-DOR extension Hinges makes window cleaning easy and safe.

**AUTOMATIC LOCKING:** WIN-DOR operators lock the sash in any position and close it tightly and securely even against weatherstripping.

**SCREEN and STORM SASH CONVENIENCE:** Screens and modern storm sash (double glazing) for casements are installed *inside*. No work. No trouble.

**PRE-FIT CASEMENTS:** Today you may buy for the same price as double-hung sash, WIN-DOR equipped factory fitted wood casement windows. These new, modern low-cost windows with all of the advantages described above plus weatherstripping, provide you with more *selling* points for every house you build. No reaching over kitchen sinks; no climbing ladders with screens and heavy storm sash; no leaning out to wash the outside of the glass. It is worth your while to inquire about them.

## Government Explains Anti-Trust Drive

(Continued from page 94)

The removal of restraints should lead to a significant reduction in the cost of housing. In one large city a responsible organization of builders has informed the Department that in its opinion the success of the Department's program would reduce building costs by at least 25 per cent. The extent of such reduction in costs will necessarily depend upon the degree to which restraints have affected the particular city and upon the degree of success achieved in the proceedings. There appear, however, to be many cases in which competition would reduce the charge for particular building operations by from 10 per cent to 50 per cent. A part of this reduction should consist in lower prices and lower charges for services by groups which have collusively inflated their charges. Another part should consist in the elimination of methods of distributing materials and of constructing houses which are clearly not efficient.

In addition to the immediate reduction of costs, the removal of restraints should make possible a burgeoning of experiments with new forms of construction, ranging from an increased use of work-shop fabrication of electrical and plumbing equipment to the designing of standardized parts on a scale so broad as to make construction a mere job of assembly. A number of experimental builders have indicated to the Department that they intend to proceed with or expand such experiments as soon as they can feel that it is safe to do so. As in all pioneering, many of the new methods will, no doubt, prove impractical. But, as in other industries, a free field for experiment should mean a progressive development of simplified processes by which housing costs can be lowered.

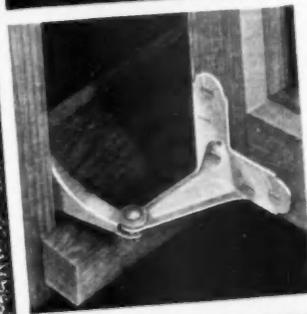
Such tendencies toward lower construction costs may be expected to enhance the effectiveness of other measures toward the revival of construction by removing influences which now counteract their effect. Much of the high cost of housing arises through interest rates, legal fees, land costs, haphazard management, and intermittent operation, and requires remedies which go beyond

(Continued to page 96)



#### AT THE TOP OF THE SASH

WIN-DOR Top-Closer, Series 45 is the "invisible hand" which pulls the sash in snugly at the top. Entirely automatic. Overcomes and prevents warping.



#### CLEANING HINGES

WIN-DOR Series 75 extension hinges swing sash 4" away from the frame when open 45° to provide ample space for washing the outside of the window from the inside.

#### SILL OPERATION

WIN-DOR operators (several types) provide the strongest opening and closing mechanisms for casement windows of any device on the market today. **NOTE:** WIN-DOR hardware is sold wherever good hardware is sold. Insist on genuine WIN-DOR.



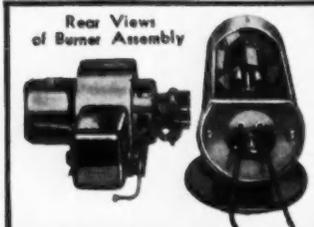
Above is shown WIN-DOR Series 30 operator.

The Casement Hardware Co.  
406 N. Wood St., Chicago, Ill.  
Gentlemen: I would like to have more information about WIN-DOR Hardware. Tell me where I can get the new low-cost pre-fit WIN-DOR equipped casements.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_

**Gar Wood PRESENTS A  
SENSATIONALLY NEW  
TYPE OF  
CONVERSION OIL BURNER  
that tops them all!**

The new Model "O" automatic Conversion Oil Burner—for new or existing home heating plants—provides stabilized air delivery, unobstructed air travel and quiet, clean combustion. Not temperamental. High winds, cold start-ups and poor draft conditions leave it virtually unaffected.



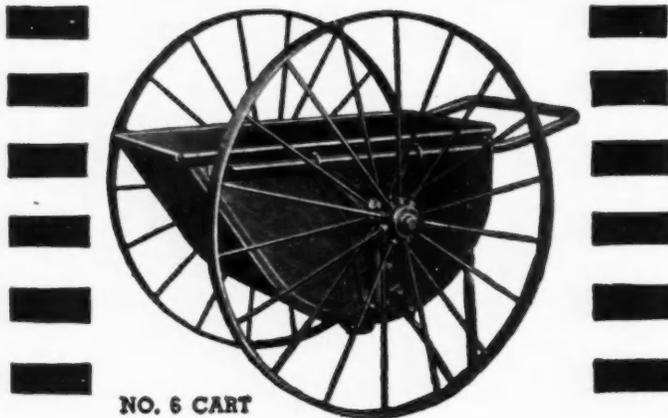
Air passes across the end of the tube (not through it) with adequate rotation causing the air to spread out fan-shape in exactly the same manner and shape as the conical oil spray leaving the jet. The result is a perfect, sunflower-shaped fire.

Dealers Investigate!

Write for Model "O" literature.

**GAR WOOD INDUSTRIES, INC.**  
AIR CONDITIONING DIVISION  
7924 RIOPELLE STREET • DETROIT, MICHIGAN  
CANADIAN DISTRIBUTOR: Engineering Industries Ltd., Leaside, Ontario

*Sterling* **CONCRETE CARTS**  
PLAIN OR ROLLER BEARINGS



**THIS IS THE STRONGEST CART MADE**  
Tray is 12 Gauge—6 Cubic Feet Capacity.  
Wheels 42 Inches Diameter. Flat or Oval Tires,  
with Plain or Roller Bearings. Trunnion Axles.  
**EASILY WHEELED • EASILY DUMPED**

**STERLING WHEELBARROW CO.**  
MILWAUKEE, WISCONSIN

**Government Explains Anti-Trust Drive**

(Continued from page 95)

anti-trust prosecutions. In recent years Federal and State governments have been particularly active in attempting to deal with the financial obstacles to low cost housing. The Department of Commerce is now exploring the possibilities of simplifying building codes, improving the design of houses, and promoting the development of low-cost housing by private enterprise. Nevertheless, the removal of obstacles and costs which affect building has often been merely the opportunity for groups in the building industry to tighten their restraints of trade and to absorb in increased charges whatever savings have been made possible by government action. Removal of such restraints should prevent such cancellation of the gains from the constructive policies of public agencies concerned with housing.

The success or failure of the effort to restore a free building industry may have an even broader significance. As yet, programs of public aid to construction in the United States are much more modest than those of many other industrial countries. In Great Britain the number of houses built with government aid between 1919 and 1936 was nearly as great as the number built by unaided private enterprise. In Germany 80 per cent of the houses built since 1919 have received direct public aid. Indeed, after 1925 about 10 per cent of all German houses were erected by public agencies. If America's housing needs cannot be met by private enterprise, it is inevitable that the limited programs of public aid in the United States will be gradually extended. To endeavor to meet the full American need for low cost housing by a plan similar to that of the Federal Housing Act might involve a program of more than three billion dollars a year in loans or of more than one billion dollars in federal grants in the development of such a program. State action would inevitably replace private enterprise as the mainspring of American residential construction.

Not many people of the United States want the future of housing to take this form. Most of us do not believe that it need do so. The alternative is for private enterprise to succeed in providing an adequate supply of low-cost housing. The present program of the Department of Justice will contribute to this result.

**Message from Thurman Arnold**

"As reduction of costs, through the removal of restraints and otherwise, brings the cost of new houses within the reach of a larger part of the population, there is reason to believe that the housing industry can repeat the experience of other industries in which costs have been progressively lowered: The expansion of its volume of business can increase the opportunities for employment and facilitate high annual earnings for labor and profits for business men on a basis of low prices rather than high prices. Operating on a basis of large volume, the industry can resume its pivotal place as a breeder of American prosperity. Operating at low costs, the industry can supply decent houses, not as now to a minority, but to the entire American people. Nothing in the inherent nature of construction makes such a future impossible; but the tangle of restraints must be cleared away in order that the leaders of business and of labor may have the chance to go forward. The Anti-trust Division can provide the interference; only you can run with the ball."

\* \* \*

**How to Estimate Accurately**

(Continued from page 72)

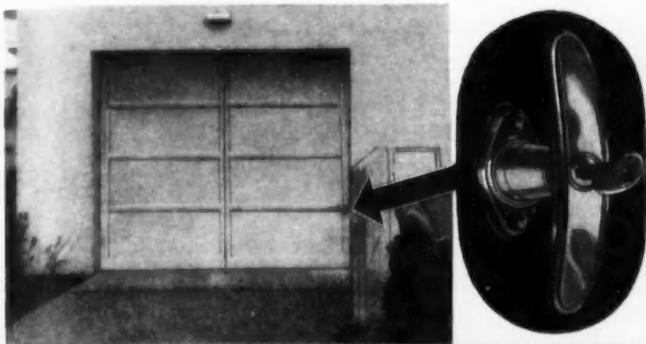
on the inside trim of a house, and the question arises as to which room the door jamb stock should match. The rule is, the finish of the room from which the jamb can be seen when the door is closed, determines the kind of lumber to use. An exception is made in the case of any small adjacent room, such as a clothes closet. In this situation, the jamb is made of the same kind of lumber as the main room.

*Rule:* Allow one jamb for each door.

Width equals stud width plus thickness of material on each face of the wall.

Length equals twice door length plus wood width plus 6". Increase to a standard length of lumber.

(Continued to page 98)



## NEW OVERHEAD-TYPE GARAGE DOOR... ONLY \$28

Retail price any U. S. jobbing center

**Equipped with cylinder lock at no extra cost!**

Can be installed in less than half a day by a carpenter!

Pre-fitted for 8' x 7' openings. 3 designs!

Every garage owner is a good prospect!

THE CRAW-FIR-DOR is the fastest-selling overhead-type garage door in America. It's low-priced . . . and price includes lock. No installation problems or servicing expense. The door is durable Douglas Fir, prefitted and primed at mill. Hardware is extra strength. Two 16-panel designs (one with sash)—also available at slightly higher price. See your lumber dealer today. If he can't supply you, write Fir Door Institute, Tacoma, Wash. or Crawford Door Co., Detroit, Mich.

# Craw-Fir-Dor

SELF ENERGIZING • ONE PIECE • OVERHEAD TYPE

## New 3 1/2-S KWIK-MIX non-till

Modern Rubber Roller Drum Drive

No ring gear—no pinion—no countershaft, less wear—smooth running.



LOAD WHILE MIXING—INCREASES PRODUCTION 40 TO 50%

END DISCHARGE

Write For Bulletin 2X

**KWIK-MIX CONCRETE MIXER CO.**  
PORT WASHINGTON . . . WISCONSIN

## JUST OUT! NEW, AMAZING, "ALL-PURPOSE" DE WALT WOODWORKER

**29**  
DIFFERENT OPERATIONS



For the first time—the world famous DeWalt Woodworker at a remarkably low price! A NEW model that performs 29 different operations . . . is really many machines in one! Does all your sawing, dadoing, shaping, tenoning, boring, routing, etc. Easy to operate. Only a few seconds to change. Easy payment plan. Make this investment in one machine—get the work of many machines. Save the cost of many machines.

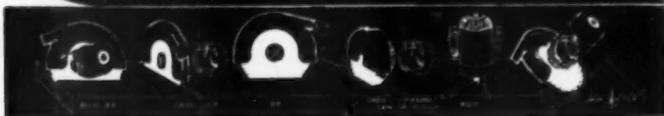
MODEL GS  
ONLY  
**\$125**  
F.O.B.  
FACTORY

WRITE FOR FULL FACTS

**DE WALT**

426 FOUNTAIN AVE.  
LANCASTER, PA.

"Actually a woodworking shop in itself"



## SAVE 50% or More of FINAL COSTS on WOOD FLOOR FINISHING WITH LIGNOPHOL

LIGNOPHOL costs less than one cent per square foot. It is applied in one coat with a long handled brush—reducing labor to the minimum. The U.S. Forest Products Service says linseed oil does not even protect and—you know shellac and varnish are surface treatments that wear off.

**WHEN YOU USE LIGNOPHOL THERE IS NOTHING TO WEAR OFF**

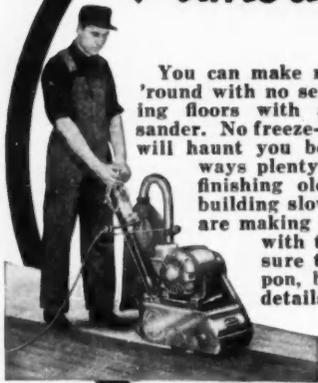
Its ONE application gives smoother, harder, more attractive floors. Thousands of contractors are finding the LIGNOPHOL method of preserving and finishing floors (and trim) at 50% or more savings, the modern way to more profits and greater job satisfaction.

Find out more about advantages of LIGNOPHOL

**MAIL THIS COUPON TO-DAY!**  
Dept. Bll. L. Seneshers Sons, Inc., 22 Lexington Ave., New York City

YOUR NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_

**MAKE BIG MONEY**  
*The American Way*



**ALL YEAR 'ROUND**

You can make real money all year 'round with no seasonal slumps, sanding floors with an American floor sander. No freeze-ups or cold weather will haunt you because there is always plenty of inside work refinishing old floors when new building slows down. Many men are making \$20 and over a day with their Americans. Be sure to send in free coupon, below, for complete details. No obligation.

**THE AMERICAN FLOOR SURFACING MACHINE COMPANY**  
511 So. St. Clair St., Toledo, Ohio

Gentlemen:

Send complete details, without obligation, on making money the American Way with an American floor sander.

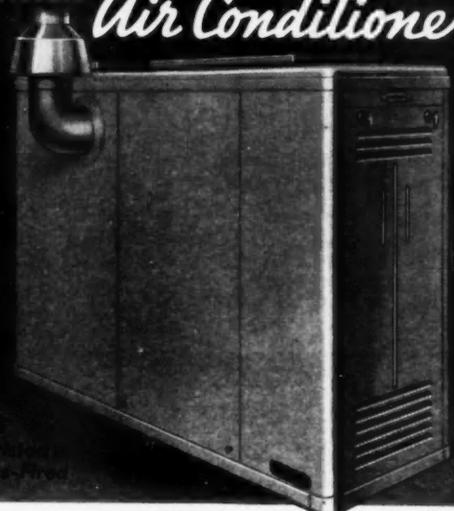
Name \_\_\_\_\_

Street \_\_\_\_\_

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

# MONCRIEF

WINTER *Air Conditioners*



**A Complete Line for Every Domestic and Commercial Need . . . Specialized types for burning oil, coal or gas . . . Write for literature.**

**THE HENRY FURNACE & FOUNDRY CO.**  
3479 EAST 49TH STREET, CLEVELAND, OHIO

**MANUFACTURER FOR 45 YEARS OF WARM AIR HEATING EQUIPMENT FOR THE HOME**

## How to Estimate Accurately

(Continued from page 96)

**NOTE:** Side jambs are made  $\frac{1}{2}$ " longer than the actual length of a door to give clearance under the door. This prevents a door from dragging or rubbing on the floor coverings, such as rugs or linoleum.

**DOOR AND WINDOW STOPS:** A door stop is a piece of finish stock nailed on the face of a door jamb to serve as a stop against which the door will shut.

A window stop is used on a double hung window to hold the lower sash in place. If the frame is for casement sash it serves as a stop against which the sash will shut. Sometimes a stop is made a part of the jamb, in which case no separate piece is required.

If a different kind of finish lumber is used in some rooms a door stop always matches the room from which it can be seen when the door is closed. This is also true of double hung and casement window stops.

**Rule:** a. Allow one stop for each inside door. Double acting doors require none. Sliding doors require two stops. Each double hung window requires one stop and each casement sash one stop if the jamb is not rabbeted. Thickness and width measurements are given in the specifications.

b. Add twice the length of a door or window to its width, allow 6" for fitting, and increase to a standard length of lumber.

**INSIDE CASINGS:** This is finish lumber that covers the space between the rough framed opening and a window frame or door jamb.

The kind of lumber for casings is given in the specifications. Often two or more kinds of wood are used in a residence, hardwood being used in the living room and dining room, and less expensive lumber for the remainder of the house.

The shape of the casing is given on the detail sheet of a plan. Any shaped casing can be bought. Only a few patterns are kept in stock and these do not cost as much as a special design which requires a "sticker set-up."

Casing can be bought more economically if short lengths are ordered. The following rules are based on this procedure.

Two types of joints are used—miter or butt. See figure 3.

**Rules:** Inside door heads, allow two pieces for each inside door. Width of door plus twice the width of the side casing stock plus 2" equals length. Increase to a half-foot or even foot length of lumber. *Sides*, allow four pieces for each inside door.

**Butt joint construction:** Length equals door height plus 2".

Increase to a half-foot or even foot of lumber.

**Miter joint construction:** Length equals door height plus width of casing stock plus 2". Increase to a half-foot or even foot length of stock.

**Window Heads:** Allow one piece for each window frame.

Width of window plus twice the width of the casing stock plus 2" equals length. Increase to a half-foot length of lumber.

If the frame has a mullion casing, then add the width of each mullion to the result before increasing to the half or even foot length of stock.

*Sides*, allow two pieces for each window frame.

**Butt joint construction:** Length equals window height plus 2".

Increase to a half-foot or even foot length of lumber.

**Miter joint construction:** Length equals window height plus width of casing stock plus 2". Increase to a half-foot or even foot length of lumber.

**Outside Door Heads:** Allow one piece for each door frame.

Width of door plus twice the width of the casing stock plus 2" equals length. Increase to a half-foot or even foot length of lumber.

*Sides*, allow two pieces for each outside door.

**Butt joint construction:** Length equals door height plus 2".

Increase to a half-foot or even foot length of lumber.

**Miter joint construction:** Length equals door height plus width of casing stock plus 2". Increase to half-foot or even foot length of stock.

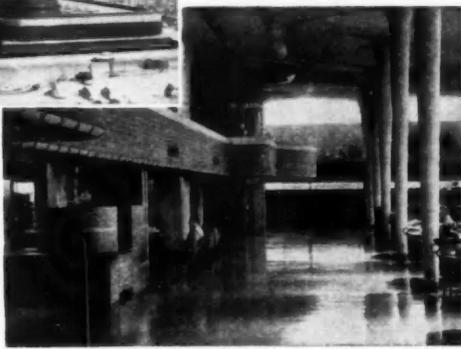
**Mullion Casings:** Allow one piece for each mullion in the frame. Length of frame plus 2" equals length. Increase to a half-foot length of stock.

**STOOL:** This is finish stock fitted and nailed on horizontally at the bottom of a window frame. See figure 3. There are two common types, casement and double hung, as shown in figure 1. The casement type is used for casement or hinged sash, while the other is for double hung windows. The double hung type is also

(Continued to page 100)



New Famous Johnson's Wax Office Bldg., Racine, Wis., has 50,000 Sq. Ft. of Wright Flooring.



# Flooring of Distinction

## PRICED FOR EASY PROFITS

● Enjoy bigger profits installing Wright Rubber Tile on new or old floors in homes, schools, offices, churches, hospitals, etc. Wright Floors are quiet, comfortable, easy to clean, and resist years of heavy traffic. They come in gay colors and patterns to match all decorative schemes—yet they cost no more than good grade linoleum. See Sweet's or write for illustrated literature.

**WRIGHT RUBBER PRODUCTS COMPANY**  
1603 Layard Ave. Racine, Wis.

# WRIGHT RUBBER TILE

**YOU be the JUDGE!**

*Mr. Contractor:* . . . You know from experience what a modern concrete mixer should have. So we ask you to judge the merits of the Smith Tilter. Study the list of features. Frankly, can you think of any other mixer that gives you as much for your money?

**SMITH 3 1/2-S Tilter Features:**

- Low Charging Height, only 34 1/2"
- Handy Feed Chute, 31" wide
- Famous Double Cone Drum
- End-to-Center Mixing Action
- Short Drum Tilt (Thru 40 arc)
- Spring-Mounted Axle
- Hyatt Roller Bearings
- Electric Welded Steel Frame
- Low Pressure Pneumatic Tires
- Enclosed Crankcase Engine
- Machine Cut Drive Gear and Pinion
- Gears and Engine Completely Housed
- Handy Telescopic Hauling Stub

**SMITH is the ONLY mixer with ALL these quality features—yet it costs you no more than ordinary "tub" mixers.**

Write for literature  
**THE T. L. SMITH COMPANY**  
2849 N. 32nd St. Milwaukee, Wis.

# SMITH MIXERS

THE BOULDER DAM MIXERS

# NO CLOSET IS COMPLETE—OR PROPERLY EQUIPPED—WITHOUT K-VENIENCE CLOTHES CLOSET FIXTURES



More than 40 modern space-saving fixtures that Double Closet Capacity by making systematic use of closet space—regardless of size or shape. Clothing carriers, extension closet rods, shoe racks, garment brackets, hat, tie, trouser and skirt holders, and many others for all types of wardrobes and all clothing. K-Veniences keep closets orderly, all apparel in quick, easy reach. The ideal solution to the universal demand for greater closet capacity in houses, apartments, hotels, clubs, institutions, etc. Sturdily built, smartly designed, polished nickel or chrome finish, easily attached. Specify and install K-Veniences in every clothes closet . . . on every job . . . and make the most of available closet space!

Photo courtesy Architectural Forum

See your Building Hardware dealer—or write direct today for complete new Catalog—FREE!

# KNAPE & VOGT MANUFACTURING COMPANY

Dept. M-11 Grand Rapids, Mich.

**JOE! DID YOU HEAR ABOUT VICTOR'S NEW LOW PRICE?**

**THE VICTOR MASTER**  
NOW ONLY **\$19.95**  
LESS YOUR REGULAR DISCOUNT

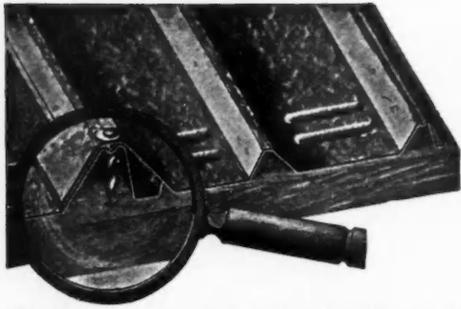
Everybody's talking about this big kitchen exhaust fan bargain. In the Victor Master you get such important performance features as, automatic operation, streamlined shutter and super-powered motor. Ideal for low cost homes and apartments and a real sales aid because it assures freedom from cooking odors, fumes and smoke. Write for free Ventilation Data Book—Today!

**VICTOR ELECTRIC PRODUCTS, INC.**  
3014 Robertson Avenue Cincinnati, Ohio

**FREE!** See Victor's complete line of In-Bilt Ventilators. Send for your copy of Ventilation Data Book Now!

# VICTOR In-Bilt VENTILATORS

**It's a Fact! . . .**



**EDWARDS TROFSEAM**

**STEEL ROOFING**

**Actually Costs Less per Square on the Roof**

Considered only in terms of cost per square of roof area covered, Edwards TROFSEAM is the cheapest metal roofing you can buy! Every sheet of Trofseam measures and covers 24 inches wide and is charged for 24 inches. Every square covers 100 square feet with nothing off for side laps. You not only save 10% or more in first cost but you get the extra protection of the improved crimps and the inner trough free. And boy! It is easy to install.

Write for Trofseam Circular and prices and for Roofing Catalog No. 92

**THE EDWARDS MANUFACTURING CO.**  
542-562 Eggleston Avenue Cincinnati, Ohio

**How to Estimate Accurately**

(Continued from page 98)

used for stationary windows. An architect will sometimes design a special shaped stool.

The kind of lumber is given in the specifications and will be the same as the inside finish lumber. There may be more than one kind of lumber required.

**Rule:** Allow one piece for each window frame. Width of window plus 12" equals length. Width of all mullions, if any, must also be added to this result. Combine into standard lengths of lumber, but keep each kind of stool separate.

**APRON:** An item of finish stock fitted and nailed underneath a window stool. See figure 3. The kind of lumber is given in the specifications and will be the same as the interior finish. The shape will vary according to the detail, but always conforms to the casing. The thickness of apron stock is usually 3/4", but the width varies according to an architect's requirements.

**Rule:** Allow one piece for each window frame. Width of frame plus twice width of casing stock plus 2" equals length. Combine into standard length of lumber.

**BASEBOARD AND SHOE:** Baseboard is finish stock nailed on a plastered wall at the floor line to form a finish between floor and wall. It is nailed on either before or after plastering, depending on the blueprints and specifications. In shape, it varies from the simplest design to a moulded one, occasionally requiring it to be made in several pieces.

Base shoe is a small moulding nailed at the floor line to close the space between the bottom edge of baseboard and the finished floor. Baseboard and shoe are usually written as one order.

**Rule:** The distance around a room (perimeter), less the door or archway openings, equals the number of linear feet of baseboard and shoe to order for one room. Repeat for all rooms, closets and then combine results. Deduct for each door or archway an amount equal to its width, as increased to next half or whole foot.

**Note:** Baseboard is always fitted against the door casing. There is, therefore, a little extra material allowed for at each opening, amounting to twice the width of the casing stock. This is not deducted but included in the total linear feet of baseboard ordered and offsets any split ends or waste due to cutting.

**HOOK STRIP:** Hook strip is a piece of finish lumber nailed on a closet wall about 5 or 5 1/2 feet from the floor into which coat and hat hooks are screwed.

**Rule:** Perimeter of the closet, less width of the door and window equals linear feet for one closet. The total of all closets equals amount of hook strip required. Order by linear foot or piece.

**PICTURE MOULDING:** This is nailed on a wall near the ceiling line to hang pictures on, for architectural effects, or to make a break between a plastered ceiling and papered wall.

**Rule by Linear Foot:** Room perimeter plus two feet equals linear feet of moulding for one room. Repeat for all rooms that require moulding.

**By Piece:** Allow four pieces to each room. Length equals room measurements. Increase to standard lengths of stock.

**THRESHOLD:** Finish stock fitted and nailed over the small crack between the inside edge of an exterior door frame sill and the finish floor.

It also serves to fill the space under an outside door, as door jambs are always made 1/2" longer than the door to allow it to clear the rugs or other floor covering. This space is not objectionable on an interior door, but must be closed on an exterior door to keep out cold. In localities that experience low temperatures a metal weatherstrip, in addition to the threshold, is used to make the joint perfectly tight.

The kind of lumber is given in the specifications. For front doors oak is most often used as it is a durable wood and will match the hardwood floor. For the rear door, vertical grain Douglas fir makes a good threshold.

The size of the threshold is given in the specifications or on the detail sheet of a set of plans. A standard size carried in stock by a mill is 5/8" x 3 1/2".

**Rule:** Allow one piece for each outside door. Door width plus 4" equals length. Increase to an even foot length of lumber or combine pieces into one standard length.

The next and concluding article in this series will cover the cabinet and flooring units and the hardware division.

\***FOOTNOTE:** For detailed information on glass, see Ericson's "Glass and Glazing"—The Manual Arts Press, Peoria, Illinois.



**New 1/2 Bag End Discharge Tilter**

- MIX FASTER
- MOVE FASTER
- BUILT TO "TAKE IT"



**New End Discharge 1/2 Bag Non-Tilt**

**You're Right When You Pick CMC**

You get the newest in Mixers, Tilters and Non-Tilt . . . all sizes. Mix faster, move faster. No dead weight. Built to take it. You can bid right and be on the profit side with this kind of equipment.

**Write for New Catalog**

Get new catalog showing latest CMC Mixers . . . all sizes . . . Plaster and Mortar Mixers, Dual Prime Pumps, Hoists, Saw Rigs, Carts and Barrows.

**CONSTRUCTION MACHINERY CO.** Waterloo, Iowa



Jack needs a roof  
To stand the proof  
Of weather both  
stormy and rare  
So he will do  
As others do too  
Use shingles from Robert McNair

**ROBERT McNAIR SHINGLE CO.**  
VANCOUVER, BRITISH COLUMBIA  
"OVER 400 DEALERS TO SERVE YOU"

**NEW**

**Steel Enclosed**

**TYPE 142 F.T.**

**SASH BALANCE**

**Greatly Reduces Cost of Machining Frames**



New and Improved is the Caldwell TYPE 142 F. T. Sash Balance. Expressly built for prefit windows, it also meets the demand for a durable, compact and inexpensive sash balance to be mounted in the head jamb of any double-hung window.  
Compact: Face 7/8", Depth 3".  
Capacity: Meets requirements of all residential windows using 1 or 2 Balances per sash.  
Durable: All 16 gauge pressed steel.  
Adjustable: For variation in sash weights.

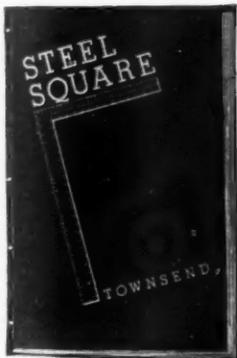
All working parts completely enclosed.  
Flat Top for easy installation, only one screw driven.  
Special C. R. Steel Tapes—practically kink proof.  
Builders using wood or metal double hung windows will find that it pays to specify Caldwell Balances regardless of the make of window.

**CALDWELL SASH BALANCE**

The Caldwell Manufacturing Company, Rochester, N.Y.

**STEEL SQUARE**

By **GILBERT TOWNSEND**



This new book on the steel square is filled with actual examples and no previously acquired knowledge of framing or other intricate carpentry operations is required. These examples are so illustrated and explained that the reader can easily apply the principles to practical jobs.

**Table of Contents**

Introduction. General Description. Scales. How to Use the Square—Braces. Roof Framing. Common Rafters. Hip and Valley Rafters. Jack Rafters. Cripple Jack Rafters. Other Uses of the Steel Square. Index.

1939. 96 pages, 101 illustrations, 5 1/2 x 8 1/2, cloth, \$1.25.

**Book Service Department**

**AMERICAN BUILDER and BUILDING AGE**

30 Church Street

New York, N. Y.



**PAYS FOR ITSELF ON THE FIRST TWO HOUSES**

**Mall Saw**  
TRADE MARK

Model 1B  
Capacity 2 3/4"  
8 1/2" Blade



The speedy MALLSAW saves so much time in cutting lumber for floors, staircases, rafters and sheathing, that it pays for itself on two average houses! Workmen prefer to use the MALLSAW, because it is *lightweight*—balanced for true, one-hand operation—safe—accurate—powerful—long-lasting. There's a MALLSAW for every job, and prices are surprisingly low. Send coupon for details.

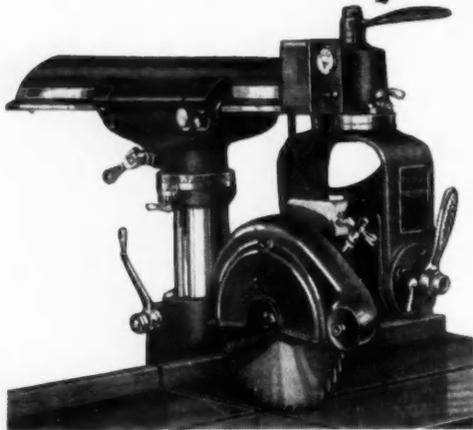
Also get full information on MALL Door Mortisers, Door Planes and Drills.

**MALL TOOL COMPANY** 7737 South Chicago Avenue  
Chicago, Illinois

Please send your free folder on MALLSAWS and other Portable Electric Power Tools.

Name .....  
Street .....  
City ..... State .....

*It's Really New!*



**WALKER-TURNER RADIAL**

*Nothing Like It At Any Price!*

Gives you a combination of features found in no other Radial Woodworking Machine . . . features that meet ALL your needs . . . that eliminate ALL troubles. Here are the big ones:

★ 2 H.P. performance from 1 H.P. motor—4 from a 2 H.P., 6 from a 3 H.P.—revolutionary design actually doubles rim force delivered at teeth of saw!

★ In addition to fast, smooth cut-off and ripping, it does Beveling, Tenoning, Shaping, Routing and Dadoing quick-

ly and accurately.

★ Has an ingenious "Shock-Absorber" which absolutely prevents overload of the gears (patent applied for).

★ Unbelievable capacity! Example—2 1/4" with 8" blade, 4 1/4" with 12" blade. Priced complete \$265, F.O.B. Plainfield, N.J., with 1 H.P. motor. Send for full description and name of local dealer who will demonstrate. Walker-Turner Co., Inc., 10119 Berckman St., Plainfield, N.J.

**WALKER-TURNER WOODWORKING MACHINES**

**PULLMAN**  
*the Sash Balance that IS Adjustable*

**NO WEIGHTS CORDS OR PULLEYS**

The most perfect window for any home is the double-hung window equipped with PULLMAN UNIT SASH BALANCES. Pullman Sash Balances assure perfect window control, easy and quiet operation. They are entirely encased, all pressed steel construction, light in weight and non-breakable. A set can be installed in 10 to 15 minutes. They save you time and money. Guaranteed for the life of the building.

**THE ADJUSTABLE FEATURE**

Tension of the inside coiled spring in the Adjustable type is quickly changed with an ordinary screw driver, without removing the Balances or the sash.

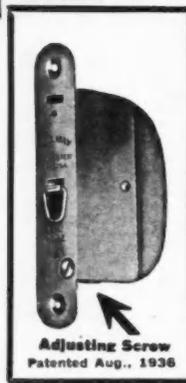
**PULLMAN MFG. CORPORATION**

Established 1886

A Half Century of Progress

1180 University Ave.

Write for **FREE LITERATURE**



Adjusting Screw Patented Aug., 1936

Rochester, N.Y.

**NEW INFORMATION—CATALOGS OFFERED**

Readers Wanting to Receive Any of the Catalogs and Data Sheets Listed in This Department Should Write on Their Business Stationery Direct to the Manufacturer. When Writing, Mention This Department of American Builder and State Your Occupation or Business Connection.

"NOW!—MENGEL-BORD!"—An attractive folder illustrating and describing this new hardwood resin-bonded plywood—a gum wood product of low cost; comes in big sheets, 4' by 8' and 4' by 6' 1/4" thick. Some interesting suggestions for a beautiful interior effect in large hardwood panels are presented.—MENGEL CO., Inc., Louisville, Ky.

"PALCO INSULATION WOOL COLD STORAGE MANUAL"—A 16-page handbook very clearly and interestingly illustrated to show numerous details of insulated construction. A table of insulating values of various materials is included together with simple rules on how to figure overall heat loss.—THE PACIFIC LUMBER CO., San Francisco, Calif.

"HIGHWAY ICE CONTROL—METHODS, MATERIALS AND EQUIPMENT"—A 32-page resumé of present ice control practices with particular reference to the use of calcium chloride. This handbook is full of good facts for those in charge of highway maintenance under winter conditions. Building contractors doing winter work also will find useful the data on freezing point and concentration of calcium chloride brine.—SOLVAY SALES CORP., 40 Rector St., New York City.

"OUT OF THE LABORATORY COMES AN EVEN LONGER LIFE FOR WOOD"—A 6-page technical bulletin well illustrated presenting the story of toxic treatment of wood and explaining the "Seal of Approval" of the National Door Manufacturers Assn. A list of the firms manufacturing sash and doors bearing the Association's Seal of Approval for toxic preservation is included.—THE NATIONAL DOOR MANUFACTURERS ASSN., 332 S. Michigan Ave., Chicago, Ill.

"FOR LUXURIOUS LIVING—BEAUTIFUL DRI-BILT INTERIORS"—A 12-page booklet in full color telling how to finish Douglas fir plywood in many attractive colors. The finishing formulae presented are a result of careful research and will serve as a valuable guide to anyone planning the decoration of Douglas fir plywood paneling.—DOUGLAS FIR PLYWOOD ASSN., Tacoma, Wash.

"CERTAIN-TEED STRUCTURAL INSULATION"—A new 48-page manual of interior finish application explaining in detail the most successful methods of using Certain-teed insulating board, tile board, finish plank, etc. The illustrations are particularly clear and well handled, making clear the recommended procedure both in pen and ink drawings and in close-up photographs. Many very attractive paneling schemes and decorative effects both for side walls and ceilings are presented in great detail.—CERTAIN-TEED PRODUCTS CORP., 100 E. 42nd St., New York City.

"BETTER HEATING, AIR CONDITIONING, BETTER PLUMBING MAKE BETTER HOMES"—A 54-page portfolio, many pages in full color, discussing in a popular way the entire line of heating equipment and of plumbing fixtures comprising the "Standard" line. This is a helpful manual for those planning on building homes and will prove a strong selling tool with prospective home owners.—AMERICAN RADIATOR & STANDARD SANITARY CORP., Pittsburgh, Pa.

"YOUNG STREAMLINE CONVECTORS"—Catalog No. 4039 has just been issued, a 24-page manual very well illustrated and very thoroughly presenting this extensive line of radiation Convectors are included that are fully recessed, partially recessed, free standing, wall hung and plastered-in. Practical installation details are included with a helpful tabulation of sizes, dimensions, capacities, etc.—YOUNG RADIATOR CO., Racine, Wis.

(Continued to page 104)



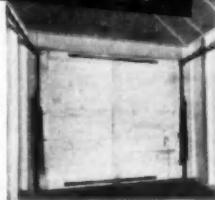
FRANTZ ANNOUNCES

# Junior

OVER-THE-TOP<sup>®</sup>  
LIGHT  
DOOR EQUIPMENT

Here is big news! "Over-the-Top" Door Equipment has a baby brother! Yes, the device that startled the building field back in 1930 with its radically new principle and amazing simplicity has an "understudy." Frantz introduces JUNIOR "Over-the-Top" Light Door Equipment . . . a lighter, inexpensive, yet none the less efficient model . . . especially designed for doors weighing up to 150 lbs., within the limits of 6'-6" to 7' high and up to 8' wide. It sweeps away the last vestige of overhead door sales resistance of the mass market. Strike while the iron is hot. Write!

FRANTZ MANUFACTURING COMPANY  
Sterling, Illinois



Though weight and cost have been reduced, "JUNIOR" has what it takes for light doors.



Simple, yes! That and its cost are what make it a "natural" for the vast small-home market.

# FRANTZ

Guaranteed BUILDWARE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of American Builder and Building Age published monthly at Chicago, Illinois, for October, 1939.

State of Illinois }  
County of Cook } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Bernard L. Johnson, who, having been duly sworn according to law, deposes and says that he is the editor of the American Builder and Building Age and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912 as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Simmons-Boardman Publishing Corp., 105 West Adams Street, Chicago, Ill.; Editor, B. L. Johnson, 105 West Adams Street, Chicago, Ill.; Managing Editor, R. E. Sangster, 105 West Adams Street, Chicago, Ill.; Business Manager, Robert H. Morris, 105 West Adams Street, Chicago, Ill.

2. That the owners are: Simmons-Boardman Publishing Corporation, 80 Church Street, New York, N.Y. Stockholders of 1 per cent or more of the total amount of stock are: I. E. Kerfoot, 15 Hillcrest Drive, Pelham Manor, N.Y.; P. A. Lee, Hopatcong, N.J.; Henry Lee, Hopatcong, N.J.; E. G. Wright, 398 N. Walnut Street, E. Orange, N.J.; S. O. Dunn, 105 West Adams Street, Chicago, Ill.; C. E. Dunn, 3500 Sheridan Blvd., Chicago, Ill.; L. B. Sherman, 375 Sheridan Road, Winnetka, Ill.; M. E. Howson, 105 West Adams Street, Chicago, Ill.; B. L. Johnson, 6949 Bennett Avenue, Chicago, Ill.; The Chase National Bank of the City of New York and Prudence Whitney Mallory, as Trustees under the last will and testament of Robert Mallory, Jr., deceased; Spencer Trask & Company, 25 Broad Street, New York, N.Y. General Partners of Spencer Trask & Company are: Edwin M. Bulkley, Walnut Street, Englewood, N.J.; Acosta Nichols, Cold Spring Road, Oyster Bay, N.Y.; Cecil Barret, Carlyle Hotel, New York, N.Y.; C. Everett Bacon, 16 Erwin Park, Montclair, N.J.; F. Malbone Biedget, 65 Patterson Ave., Greenwich, Conn.; Arthur H. Gilbert, 440 Park Ave., New York, N.Y.; Henry S. Allen, 407 Highland Ave., Orange, N.J.; William B. Basset, Old Church Road, Greenwich, Conn.; William Kurt Beckers, South Salem Road, Poundridge, N.Y.; Reginald C. Foster, 464 Charles River St., Needham, Mass.; Edwin M. Bulkley, Jr., 21 Sturges Road, Bronxville, N.Y.; S. Bayard Colgate, Center Street, Orange, N.J. Limited Partner, Henry A. Colgate, New Vernon, N.J., Limited Partner.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

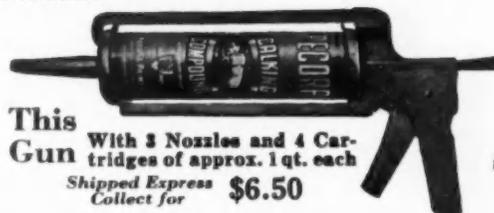
BERNARD L. JOHNSON, Editor.  
Sworn to and subscribed before me this 28th day of September, 1939.  
(SEAL) ANNE A. BOYD,  
(My commission expires Dec. 19, 1939.)

# CALK all Joints

## WITH PECORA COMPOUND



Be sure you use Pecora, the time-tested 30 year old Calking Compound. You cannot buy better quality or more satisfactory performance. Pecora will not dry out, crack or chip when properly applied. Available in bulk, or in non-refillable metal cartridges for use with improved High Pressure Calking Gun illustrated below.



This Gun With 3 Nozzles and 4 Cartridges of approx. 1 qt. each  
Shipped Express Collect for \$6.50

Write for illustrated folder

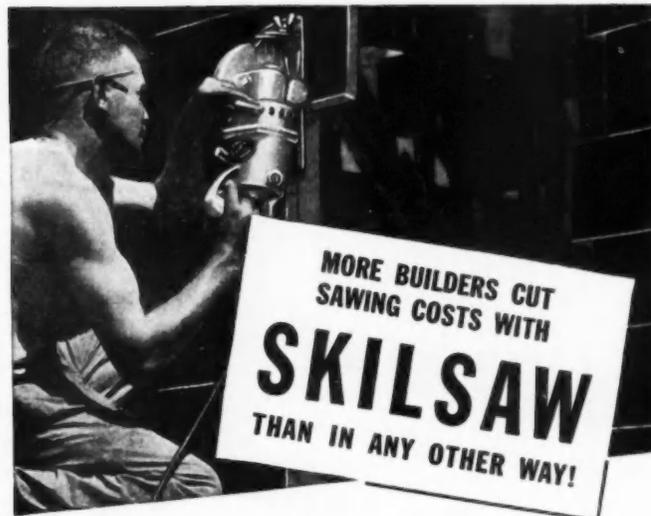
## Pecora Paint Company, Inc.

Member of Producers' Council, Inc.  
Established 1862 by Smith Bowen



Fourth St. & Reading R. R. Philadelphia

ALSO MORTAR STAINS • SASH PUTTIES • ROOF COATING  
• PECOMASTICS FOR STRUCTURAL GLASS INSTALLATION



What better proof of SKILSAW superiority than the simple fact that more SKILSAWS are in use than all others combined! SKILSAW leads the field because it leads in profit-making performance . . . because it represents 19 years of constant improvement on the original electric handsaw!

SKILSAW is lighter, more powerful, will do more sawing jobs. Has a simple adjustment for depth and bevel cutting. New improved gears for quieter running and longer life. All ball bearing construction. Works from light socket. 9 POWERFUL SIZES for wood, metal, stone and compositions.

SKILSAW, INC., 5031 ELSTON AVE., CHICAGO  
36 East 22nd St., New York—182 Main St., Buffalo—  
52 Brookline Ave., Boston—15 South 21st St., Phila-  
delphia—2124 Main St., Dallas—918 Union St., New  
Orleans—29 North Avenue, N.W., Atlanta—1253  
South Flower St., Los Angeles—2065 Webster St.,  
Oakland—Canadian Branch: 85 Deloraine Ave., Toronto.

Sold by leading distributors of misc. mill, hardware and contractors supplies.

HOW TO CUT COSTS IN SMALL HOMES



SEND FOR THIS INTERESTING BOOKLET!

**SKILLED WORKMEN demand EMPIRE LEVELS**

Empire Interchangeable Vial Cases Save Time and Money on the Job. They offer accurate, precision, adjustment and provide quick repairs. You will appreciate your highly polished Empire Level Model 151-E 28" \$5.25 24" 4.50

Postpaid or at Good Dealers Everywhere



**EMPIRE NO. 151-E ALUMINUM LEVEL**

A popular model with 6 glasses. Strong Aluminum Alloy frame, precision machined. A perfectly balanced tool . . . the pride of skilled workmen.

**EMPIRE LEVEL MFG. CO.**  
707 S. Sixth Street Milwaukee, Wisconsin  
"LEVEL SPECIALISTS"



MR. KEES SAYS:

"WHY LET CORNERS SLOW YOU DOWN?"

When you're building houses with drop or lap siding, don't let corners slow you down. Take them in your stride. Make them faster . . . neater . . . stronger . . . without mitering or sawing siding to exact length. Use Kees Metal Siding Corners. Write for complete details, Free Kees Catalog.



**F. D. KEES MANUFACTURING CO.**  
Box 193 Established 1874 Beatrice, Nebraska  
Distributed Thru Wholesale Hardware Trade



**KIMBALL HAND POWER ELEVATORS**

A complete line of efficient Hand Power and Electric Elevators built to suit any requirement. Fitted for rapid installation in your building. These straight-line-drive machines are little giants of lifting power and are surprisingly nominal in costs.

**FREE Engineering Data**  
Give us your problems and let our engineers help you. Full descriptive literature on request.

**KIMBALL BROS. CO.**

915-989 Ninth Street Council Bluffs, Iowa

**Set of Blue Prints and Free BOOK "HOW TO READ BLUE PRINTS"**

**FREE TRIAL LESSON**

This Free Trial Lesson on "How to Read Blue Prints," and a set of blue prints plans,—sent to show you how this 36 year old School for Builders makes it easy for men in the building industry to lay out and run jobs, read blue prints, estimate costs, superintend construction, etc. Drawing of plans included if wanted.

**LEARN AT HOME IN SPARE TIME**  
Men with this training are needed now to handle expanding business in building construction. This knowledge leads to promotion. Building contractors urge employees to get this training. For Free Trial Lesson address:

**CHICAGO TECH COLLEGE**  
P-127 Tech Building, 118 East 26th St., Chicago, Illinois

**CATALOGS—**

(Continued from page 102)

**BECKETT BOILER-BURNER UNIT**—A 4-page illustrated circular gives full information regarding the Beckett Commodore automatic boiler-burner unit and tells how it provides "carefree comfort for the home." These boiler-burners are equipped with the Beckett Commodore oil burner, complete details of which are included.—**THE BECKETT ENGINEERING CO., Elyria, Ohio.**

**"ST. CHARLES STEEL KITCHEN CABINET"**—A 16-page illustrated handbook on kitchen planning, showing how the St. Charles cabinets are detailed and arranged for most popular and satisfactory results. Since these cabinets are being used in both new homes and for remodeling old kitchens, there is a wide demand for the information contained in this new manual.—**ST. CHARLES MANUFACTURING CO., St. Charles, Ill.**

**"METALBESTOS GAS VENT & FLUE PIPE"**—Catalog No. 339A is an 8-page data sheet on these space saving, safe and durable vent pipes for all gas appliances. Several styles of pipe and all necessary fittings are included.—**WILLIAMS-WALLACE CO., San Francisco, Calif.**

**"AJAX SHEATHING AND ROOFING BRACKETS"**—A new 8-page data sheet has been issued describing these folding metal brackets which provide a safe, comfortable staging for all roof work. The "Universal" scaffold brackets and the new idea "hook-type" scaffold brackets are also included.—**AJAX BUILDING BRACKET CO., 1551 Rydal-Mount Road, Cleveland Heights, Ohio.**

**PEERLESS GAS-FIRED FLOOR FURNACES**—A new 12-page portfolio with illustrations tells exactly how to install the Peerless floor furnace designed for use with natural, mixed or manufactured gases. Bound into the same covers is also an 8-page section, "Selling Peerless Gas-Fired Floor Furnaces." This illustrates and describes the equipment and gives interesting proofs of its efficiency. Supplemental sheets are also included on "Estimating Heat Losses and Operating Costs for Gas Heating Equipment." A quick method is given for figuring heat loss of house for approximate results.—**PEERLESS MANUFACTURING CORP., Louisville, Ky.**

**WALKER-TURNER RADIAL WOODWORKER**—Two big, attractive broadsides present new information regarding the new Walker-Turner radial woodworker offered as "a modern machine for today's needs." These broadsides illustrate the many uses of this machine, "five machines in one." Examples are shown of cost-cutting, mitering, ripping, dadoing, shaping, rotting and tenoning. The portable character of the machine is demonstrated, with an ingenious mounting on a two-wheel automobile trailer.—**WALKER-TURNER CO., Inc., Plainfield, N.J.**

**STERLING SPEED-BLOC SANDER**—An air-driven sander for shop use, refinishing automobiles, furniture, etc., is nicely described in a little 6-page folder. It makes the point that a little power machine of this type replaces expensive hand sanding and cuts sanding time in half, or better. A new circular describes and illustrates the machine and numerous examples of the work that it does.—**STERLING PRODUCTS CO., 2457 Woodward Ave., Detroit, Mich.**

**NEW MODEL MALL SAW**—A new data sheet for the Mall Tool Company loose-leaf catalog gives information on the new Model No. 65 electric hand saw which has a 6½-inch blade and 1⅞ inch capacity. This new model is "one of the smallest, lightest, most powerful saws ever built," the circular states. Complete specifications are included.—**MALL TOOL CO., 7740 S. Chicago Ave., Chicago, Ill.**

**THE MASTER WOODWORKER**—A 24-page catalog illustrates and describes this "complete woodworking shop—12 machines in 1," and illustrates the various types of work that it does. Common operations on this machine are ripping, cross cutting, jointing, bevel ripping, jack rafter cutting, stair routing, boring, tenoning, mitering, grinding, gang ripping, dadoing, moulding and rabbeting. Some interesting letters from contractors and builders tell of experiences with this handy machine.—**THE MASTER WOODWORKER MFG. CO., Detroit, Mich.**

# A one page portfolio of STEEL WINDOWS BY TRUSCON



TRUSCON  
RESIDENTIAL  
CASEMENTS



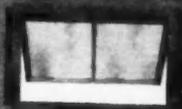
TRUSCON  
RESIDENTIAL  
DOUBLE-HUNG  
WINDOWS



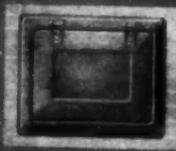
TRUSCON  
SECURITY  
WINDOWS



TRUSCON  
COMMERCIAL  
PROJECTED  
WINDOWS



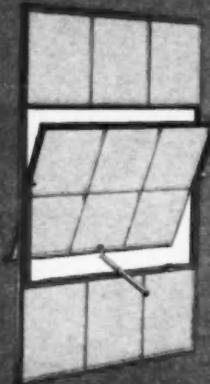
TRUSCON  
BASEMENT  
WINDOWS



TRUSCON  
COAL CHUTES



TRUSCON  
UTILITY  
WINDOWS



TRUSCON  
PIVOTED  
WINDOWS



TRUSCON  
ARCHITECTURAL  
PROJECTED  
WINDOWS



TRUSCON  
FORMED STEEL LINTELS

In one source, TRUSCON, you can have prompt shipment on the widest range of standard residential and commercial types of steel windows available anywhere. • Truscon's 27 strategically located warehouses and more than 5500 dealers make possible Truscon's nation-wide coverage of all steel window requirements. • Write for YOUR set of Truscon Steel Window Catalogs which contain data and details helpful in your work.

## TRUSCON

*Steel Company*

27 SALES ENGINEERING OFFICES • 27 WAREHOUSES  
YOUNGSTOWN • OHIO  
SUBSIDIARY: REPUBLIC STEEL CORPORATION



## THEY THOUGHT SUCH PLUMBING COULDN'T BE HAD in a Low-Cost Home



*The step-saving efficiency and modern charm of Crane-Equipped kitchens can also be had in low-cost homes. Let Crane Kitchen Planning Service help you design kitchens with greater sales appeal.*

**I**T DIDN'T take long for the Joneses to decide on this home. In it they sensed a value they couldn't afford to pass up—an extra value they didn't expect to find in a low-cost home.

The fact that the plumbing was by Crane gave them assurance of up-to-date bathroom styling... of modern comforts and conveniences... of safe, dependable plumbing. But more, it inspired confidence in the builder's judgment of quality in every part of the house.

Many of your prospects feel the same way about Crane-Equipment. To them it stands for something extra fine in bathrooms—for quality that's ordina-

rily associated with high priced homes.

This is a point on which you can capitalize. Because, actually, Crane plumbing can be had in every price range—for modest as well as costly homes. Yet, even the lowest priced fixtures in the line are genuine Crane-Quality throughout—give both you and your customers maximum dollar value. These are reasons why many of the most successful low-cost housing developments are completely Crane-Equipped.

Convince yourself that Crane-Equipment can help you sell your properties faster—at better profit. Visit your local Crane Display Room.

# CRANE

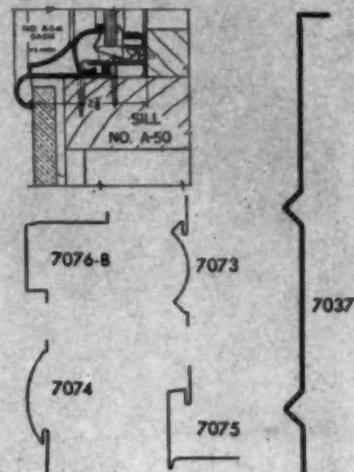
CRANE CO., GENERAL OFFICES  
836 S. MICHIGAN AVE., CHICAGO

VALVES • FITTINGS • PIPE  
PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS



Austin B. Murray, Contractor and Designer



Quarter size details show standard Kawneer mouldings used on these fronts. Many useful shapes are available.

# UNLIMITED DESIGN POSSIBILITIES-

with standard KAWNEER MOULDINGS!



COMPLETE  
3" SCALE DETAILS  
AVAILABLE

The two store fronts illustrated show how easy it is to obtain striking effects with a few of the many standard Kawneer mouldings and shapes, available in aluminum, bronze and stainless steel. Such mouldings may be used alone, or in a wide variety of combinations—offering the designer great freedom in the development of his ideas.

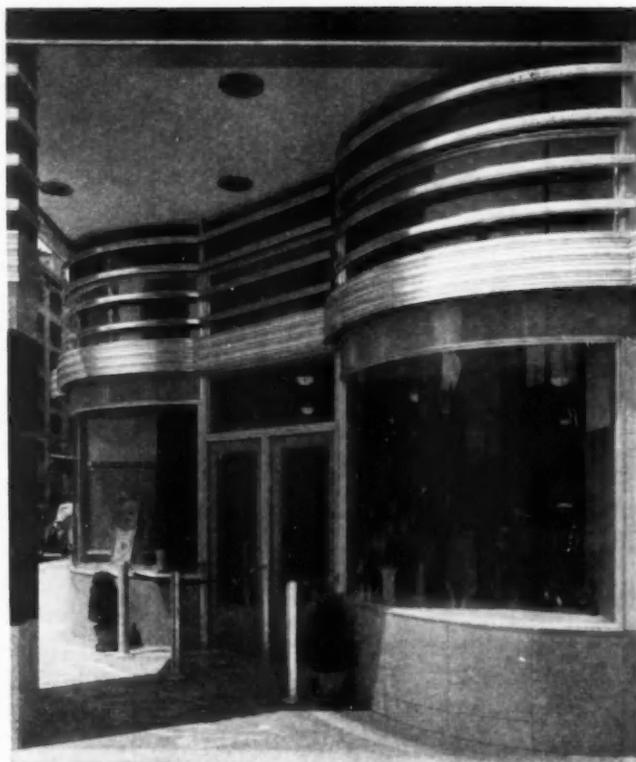
In the Kawneer front above, Shape No. 7037 (face piece of the Kawneer Concealed Awning Bar) has been used to form an unusually attractive cornice and light box. In the store front shown at right, Shapes No. 7076-B, 7073, 7074, and 7075 have been used very effectively in combination.

### PLATE GLASS PROTECTION

Show window glass in these fronts is securely and safely held by Kawneer RESILIENT EXTRUDED SASH and BARS. This type of sash, as well as the Kawneer Rolled Sash, provides a strong yet resilient grip evenly distributed along surface of plate glass—for maximum protection against glass breakage.

### PORCELAIN ENAMEL IN 27 MODERN COLORS

K.Z.S. Architectural Porcelain Enamel also offers interesting possibilities for modern design. Adaptable to all types of store fronts. Panels are individually suspended. 27 appealing, modern colors! Standard or special shapes to meet all design requirements! WRITE FOR COLOR CARD AND BOOKLET.



# Kawneer

# Only DOUGLAS FIR PLYWOOD does ALL 4 of these jobs!

1. Insulates for greater comfort
2. Protects against condensation
3. Deadens and absorbs sound
4. Builds more rigid houses

## HERE'S ACTUAL DATA

Comparisons shown below are taken from actual Government reports)

*Plywood* WITH 2 COATS OF ASPHALT PAINT  
ONLY 3 DROPS OF WATER

MOIST AIR

*Insulation Fibre Board*  
185 TO 240 DROPS OF WATER

MOIST AIR

*Lath and Plaster*  
79 DROPS OF WATER

MOIST AIR

See complete results of tests at U. S. Forest Products Laboratory on next page.

# dri-bit WITH PLYWOOD

is the better way to build!

**INSULATION** Wood is a natural insulator—and so is Douglas Fir Plywood. That is why a wood handle on a coffee pot doesn't burn your hand. Plywood has the added merit of providing insulation against zero winds as well as cold. A 5/16" panel of Douglas Fir Plywood, with an air-space, provides about the same insulation as a 7/16" fibre insulation board. Because plywood wall lining is air-tight, it creates a truly dead air-space and greater room comfort.

INSULATION VALUES (U) in B.t.u.'s For Several Types of PLYWOOD Wall Construction			U
Inside Lining	Outside Wall		
1/4-in. Plywall	2 x 4-in. studs and air space between	5/16-in. Plyscord, Building Paper, Siding	.293
3/8-in. Plywall	2 x 4-in. studs and air space between	5/16-in. Plyscord, Building Paper, Siding	.280
1/4-in. Plywall	2 x 4-in. studs and air space between	5/16-in. Plyscord, Building Paper, Furring Strips, Wood Siding	.233
1/4-in. Plywall	1/2-in. Bat Insulation	7/16-in. Exterior Plywood	.183



**VAPOR BARRIER** Government experts and other scientists say that when average outdoor temperatures get down to 20° F., condensation may occur within walls and roof, especially if humidifiers are used inside the house. This condensation can be prevented by the use of Douglas Fir Plywood wallboard (Plywall), with 2 coats of asphalt paint on the back, or with glossy-surfaced, asphalt-impregnated building paper weighing 50 lbs. per roll of 500 sq. ft. between the Plywall and studding. This forms a vapor barrier 7 to 10 times as effective as some materials which are claimed to act as "seals" against vapor and moisture.

**COMPARATIVE RESISTANCE OF VARIOUS MATERIALS TO VAPOR TRANSMISSION**

(From Tests at U. S. Forest Products Laboratory)

NOTE: The lower the figure, the more effective the vapor barrier.

Material	Loss in grains per sq. ft. per hour
A. Plywood, 1/4-in. Douglas fir, 2 coats asphalt paint	0.308
B. Plywood, 1/2-in. Douglas fir, 5-ply	1.920 to 1.975
C. Plywood, 1/4-in. Douglas fir, soybean glue, plain	3.080 to 4.520
D. Insulating Sheathing, surface coated (asphalt both sides and aluminum paint on one side)	2.190 to 3.050
E. Plaster-wood lath	7.900
F. Insulated lath and sheathing-board type (1/2 and 3/4 in.)	18.50 to 24.65
G. Plaster, fibreboard or gypsum lath	14.20 to 14.90

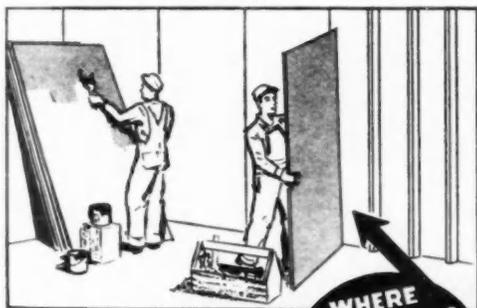
**ACOUSTICAL PROPERTIES** Douglas Fir Plywood walls and partitions compare favorably with other standard construction from the standpoint of sound insulation—are definitely superior from the standpoint of sound deadening and sound absorption. Tests on Douglas Fir Plywood recently conducted at the Riverbank Laboratories, Geneva, Ill., by Dr. Paul E. Sabine show that the coefficients of sound absorption at different frequencies are as follows:

**COEFFICIENTS**  
(at various frequencies)

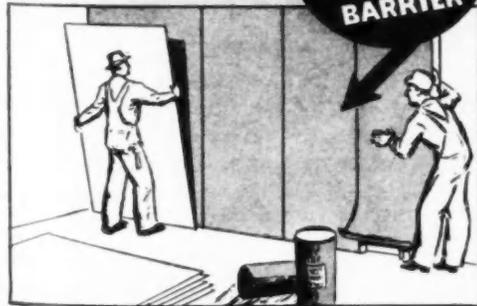
	128	256	512	1024	2048
A. 1/4-in. Douglas Fir Plywood on both sides of 2 x 4-in. studs (Face of test side varnished) Test No. 39-44.	.31	.11	.14	.12	.10
B. Ditto, but with 3/4-lb. deadening felt and wallpaper over plywood Test No. 39-45.	.35	.18	.16	.11	.13

NOTE: Figures below are from "Official Bulletin of the Acoustical Materials Association", June, 1939.

	128	256	512	1024	2048
Plaster, gypsum or lime, smooth finish on lath	.02	.03	.04	.04	.05
Ditto, rough finish wood paneling	.04	.06	.05	.05	.05
Linoleum, asphalt, rubber or cork tile on concrete floor	.03	.08	.08	.08	.08



Vapor barriers should be placed on inner walls. Plywall plus asphalt paint (above) or asphalt-impregnated paper (below) is an effective vapor barrier.



**PLYSCORD**  
is the best structural sheathing!

Government tests at U. S. Forest Products Laboratory show 5/16" Plyscord superior to any other sheathing material.

	1.0
HORIZONTAL LUMBER	
	3.0
25/32" FIBRE BOARDS	
	4.2
1" x 4" LET-IN BRACING	
	4.3
1" DIAGONAL SHEATHING	
	5.9
1/4" DOUGLAS FIR PLYWOOD	

**GREATER STRENGTH**

Dri-Bilt with Plywood means better building construction through the use of the proper grades of these big panels for sheathing, sub-flooring, interior walls and ceilings, cabinet-work, exterior siding and concrete forms.

Dri-Bilt homes are not only warmer, windproof, dustproof, vaporproof and quieter. They're stronger, too. 5/16" Plyscord sheathing makes walls 5.9 times as rigid as horizontal board sheathing—minimizes handling, fitting, cutting and nailing.

For more details about Dri-Bilt construction, write Douglas Fir Plywood Association, Tacoma Bldg., Tacoma, Washington.



**SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"**

PLYPANEL D.F.P.A.

EXT. - D.F.P.A.



# Your Prospects Perk Up

when they see you've given them

## G-E Automatic Heat!

...AND G-E NOW COSTS NO MORE

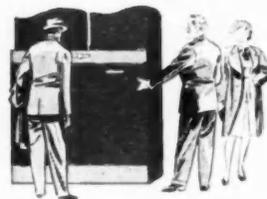
than you'd ordinarily pay for other automatic heating equipment. No wonder builders everywhere have been quick to take advantage of General Electric's new low prices on Oil Fired Automatic Heating Equipment. They know from experience that thrifty, dependable G-E home heating immediately appeals to house-hunting prospects and, in many cases, is the deciding factor in clinching the sale.

Now...at no extra cost...you can give your houses G-E's extra sales appeal. Find out about G-E's new low prices and the special cooperation offered builders. Learn how the plus value of G-E can help sell your houses. General Electric Company, Division 190-411, Bloomfield, N. J.

When prospects see this monogram, they know you built the house not just to sell, but to be LIVED IN!



A complete line of G-E Gas and Oil Furnaces for radiator heated houses provides clean, trouble-free heat plus abundant hot water, winter and summer. Prospects will be glad to hear how little G-E units cost to run.

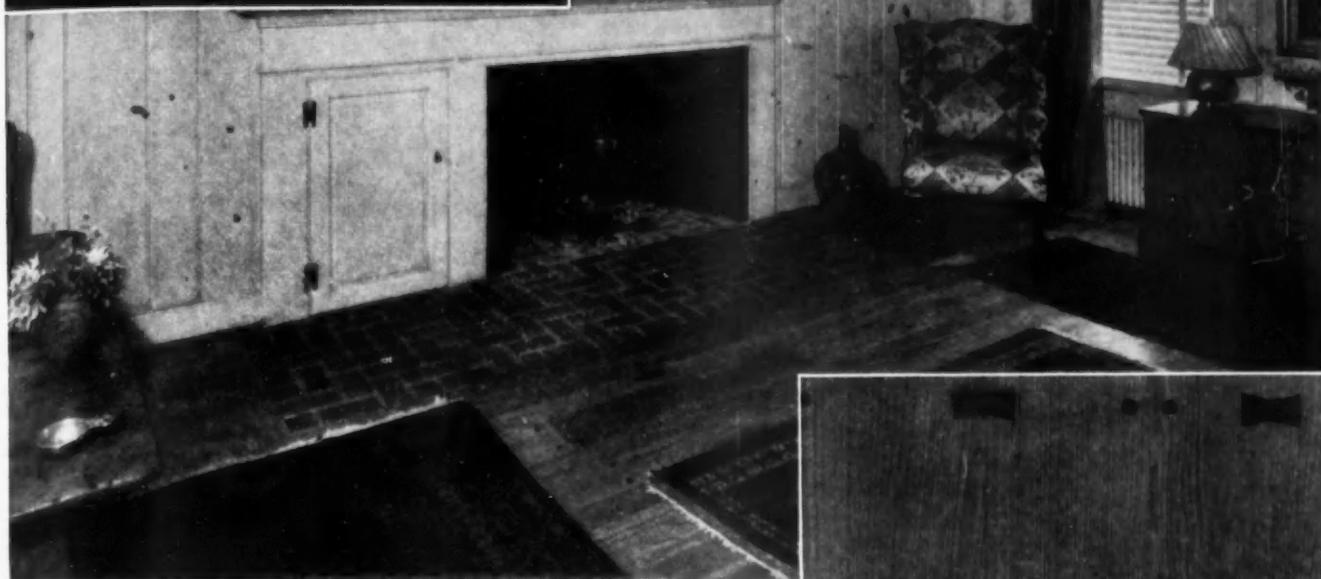


Warm air heated houses get economical heating from the G-E Winter Air Conditioner (Oil or Gas). It also provides winter air conditioning at no extra cost—humidifying, filtering and circulating warmed air.



*Yes, we bear down on the importance of Seasoning in*

**BRADLEY  
OAK PLANK  
FLOORING**

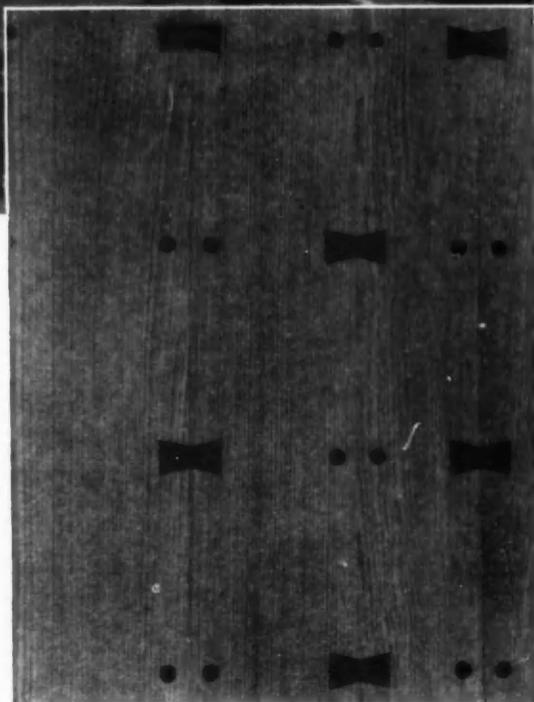


*This living room is floored in Bradley's "Rustic" Grade.*

**B**ECAUSE experience (more than 35 years of it) has taught us that correct seasoning is the secret of lasting good appearance... which, as you know, Mr. Contractor, is important to your reputation. For there's no better advertisement for your skill as a builder than the recommendation of a satisfied homeowner.

In this matter of drying and seasoning, Bradley's methods and equipment have undergone constant improvement in step with increasing knowledge developed through practical research. Thus, today these processes are so conducted that the texture, warmth and figure natural to virgin oak, are conserved in the finished floors. Moisture content is determined to an accurate degree, minimizing the hazard of shrinking and swelling after the flooring is installed.

"BRADLEY BRAND" Oak Plank Flooring is produced in both end-matched and plain end; V-joint or square-edge with plugs and butterflies optional in grades specified as "Clear", "Colonial" and "Rustic". Thickness of 25/32" is the same in all,



*Bradley's "Clear" with Plugs and Butterflies*

with random widths ranging from 3 1/4" up to 8". Available through local distributors everywhere, plainly marked on the reverse side of each plank with the name "Bradley". For further information and literature, address:



**BRADLEY LUMBER COMPANY**  
OF ARKANSAS

WARREN, ARKANSAS



**Carey**  
**BUILDING PRODUCTS**  
**SAVE MONEY**  
*for*  
**YOUR CUSTOMERS**



**T**ODAY, home owners pay for new homes like paying rent; for every 70 cents they can afford to pay each month, \$100 worth of house may be bought and owned in 20 years.

This market places upon the builder the responsibility of using materials that serve and save; that avoid unnecessary upkeep costs in the future, and that prevent the monthly charges from piling up later.

With these requirements in mind, far-sighted builders are closing contracts on a basis of supplying long-wearing, Carey Cork-Insulated Shingles to provide roof protection plus roof insulation, at one cost. These builders are also recommending Careystone Siding to minimize upkeep expense; and they are using Carey "Rocktex" Rock Wool Insulation, not only to provide increased

comfort, both summer and winter, but also to reduce the monthly fuel bills.

You serve the best interests of your customers by suggesting their use of these Carey Building Products; and at the same time you are building good will and better business for yourself. Send for details about these Carey Products. Address Dept. 10.



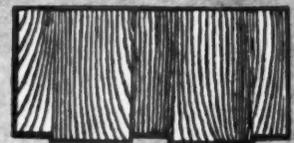
**CAREY CORK-INSULATED SHINGLES**

The shingle with outside mineral surface for weather protection; cork underside for insulation. Provides roof and roof insulation for roof cost. Keeps homes warmer in winter—cooler in summer. Saves fuel.



**CAREY ROCKTEX HOME INSULATION**

Provides maximum control of room temperature the year 'round. Will not shrink, bulge, rot or burn. Vermin and termite proof. Available in Bat, Wool, and Granulated forms.



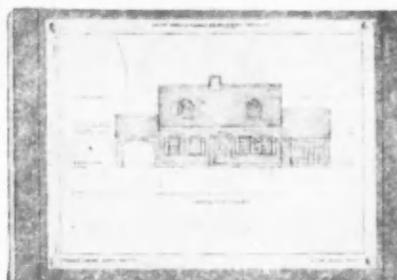
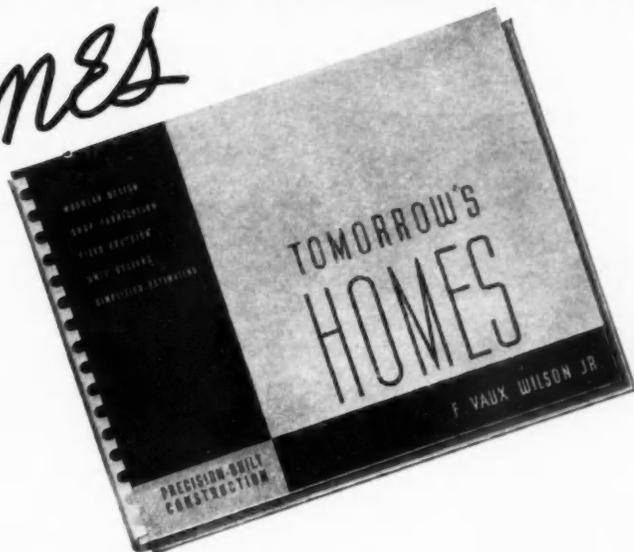
**CAREYSTONE SIDING and SHINGLES**

Made of asbestos and cement. Fire-proof, rot-proof, wear-proof. Never needs paint protection or other upkeep. Available in Thatch Butt and Wave Line Units, in random widths.

**THE PHILIP CAREY COMPANY · LOCKLAND · CINCINNATI, OHIO**

# PRECISION-BUILT

# Homes



17 to 30 days from plan to finished house



Precision-Built construction starts in the shop—where all lumber is pre-cut

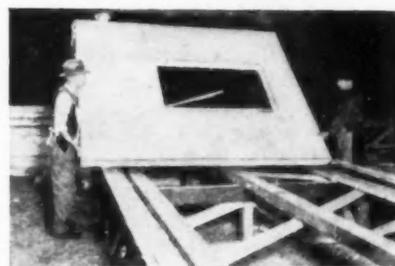
## CONTROLLED COSTS *mean* ASSURED PROFITS

WHEN YOU have complete control of your construction methods—and your costs—you are always sure of profits. And that's just what the Precision-Built method offers the contractor.

\$3,000,000 of Precision-Built Homes, already erected, prove that this is the one sound, thoroughly tested, profitable method of home construction. You use local labor; standard quality materials bought from your local lumber dealer. You give your customer all the economies expected from pre-fabrication, yet the house is completely his own. You work with your local architect or with our architect-designed plans.

TOMORROW'S HOMES tells the full story of the Precision-Built method, shows how all its advantages have been made possible—how you are sure of your profits in advance. This book, written after 15 years of research, tells how to sell, fabricate and erect houses—in 17 to 30 days. The book contains more than 300 pages and is fully illustrated. It includes a complete and accurate estimating system—with area, lineal foot and cubic yard tables from 1'0" x 1'0" to 50' x 50'.

This valuable new book—priced at \$10 per copy—is *privileged* to established builders at \$5 per copy. Write today—to be certain of your copy. Homasote Co., Trenton, N.J.



Wall and partition units are framed from working drawings, with doors and windows integral



Complete sections are delivered by truck to the location

Homasote Big Sheets (up to 8' x 14') mean one-piece, crackproof walls

Outstanding architects acclaim Homasote the perfect surface for paper or paint



In 2 hours all partitions are up; the job is ready for roofing with pre-cut rafters

*Weatherproof*  
**HOMASOTE**  
*Insulating and Building Board*





# Leading

## NU-WOOD

COMPARE Nu-Wood with other types of insulating interior finish and you'll soon know why *builders prefer Nu-Wood*. For Nu-Wood has the **STYLE** that others try vainly to duplicate . . . the exclusive charm of appearance that people want for their homes today.

And Nu-Wood Interior Finish gives you more opportunity to capture the home buyer's interest . . . to attract him more strongly to the homes you build. That's because Nu-Wood has a *combination* of quality features and advantages not duplicated in other interior finish materials available on the market today. Nu-Wood creates interiors of outstanding distinction . . . provides that "different" appearance which is such a big advantage in giving you the edge on competition. Only Nu-Wood is "like" Nu-Wood. Yet Nu-Wood, with all its advantages is low in cost . . . easily applied.



### WOOD CONVERSION COMPANY

Dept. 119-12, First National Bank Bldg., St. Paul, Minn.

WOOD CONVERSION COMPANY  
 Dept. 119-12, First National Bank Bldg., St. Paul, Minn.  
 Gentlemen: Please send me information and illustration on Nu-Wood  
 for  New Construction  Remodeling

Name .....

Address .....

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

# The Style parade

## INTERIOR FINISH

### More Interesting Colors

Others have tried vainly to duplicate the soft subtle colors of Nu-Wood... available in seven shades, to fit every decorative need and taste. Nu-Wood colors are always appropriate.

### More Charm of Texture

No other interior finish has the texture of Nu-Wood... a texture not too pronounced, yet not too faint... outstandingly beautiful and appealing. Another exclusive Nu-Wood advantage that helps you sell homes.

### A Pattern Combination for Every Purpose

Nu-Wood is available in tile, plank and board. In addition, Nu-Wood Wainscot, with its unique texture and better-wearing qualities, adds still further to the almost endless variety of pattern combinations obtainable with Nu-Wood.

### Kolor-Trim Moldings

Only Nu-Wood offers you these pre-decorated wood moldings—available in glowing shades of color to harmonize with Nu-Wood interior finish, and in a number of patterns. Kolor-Trim moldings make the interior decorating job complete.

### Nu-Wood Sta-Lite

A high light-reflecting Nu-Wood product with 74% light reflection. Sta-Lite actually grows lighter with exposure... ties in with the "better sight" movement. Available in tile, plank and board.



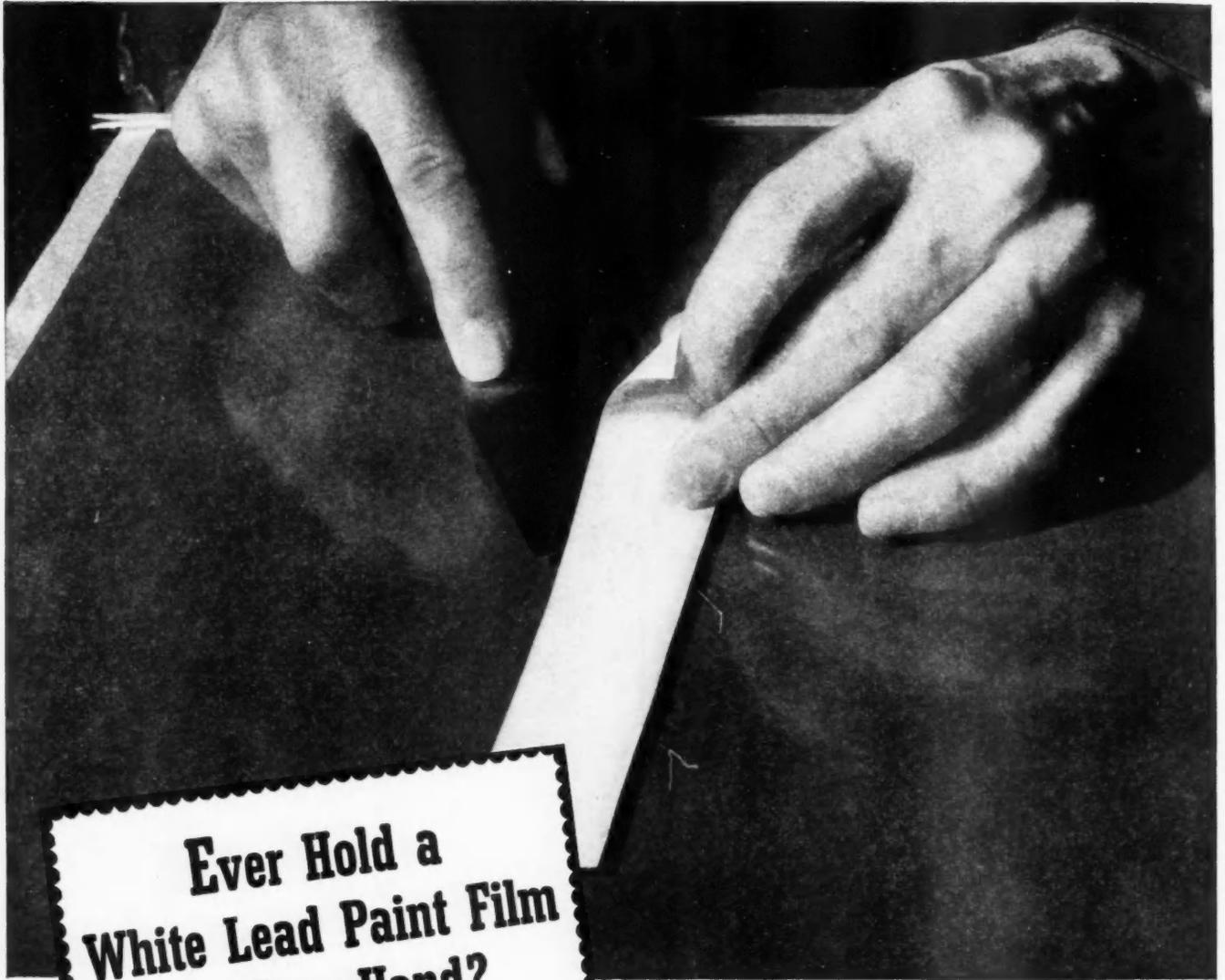
### Superior Utility in Nu-Wood

#### Nu-Wood Insulating Sheathing

Here's a sheathing with an entirely new type of surface treatment, providing a better and more efficient moisture barrier—a coating which does not foul or clog tools. In this sheathing all the high original insulating value of Nu-Wood is preserved. In addition, Nu-Wood Sheathing is exceptionally wind-proof—offering greater bracing strength and rigidity. It is available in large units with square edges or 2' x 8' with shiplap edges.

#### Nu-Wood Insulating Lath

An insulating lath that takes plaster readily and holds it with a lasting grip. Plaster cracks are reduced to a minimum. Dirty lath marks are eliminated. The superior V-joint assures a continuous unbroken insulating and plastering surface—trowel pressure does not open a gap at the joint. Assure customer satisfaction with Nu-Wood Insulating Lath—available in 1/2" and 1" thicknesses in standard sizes. Mail the coupon for details.



**Ever Hold a  
White Lead Paint Film  
in Your Hand?**

**H**ERE'S a way to demonstrate to yourself the tough, elastic properties of white lead paint.

Brush a layer of this paint on a piece of glass.

Let it dry—and then peel it off.

The white lead film will be tough, elastic—*rubbery*. You can actually stretch it, fold it, bend it.

You'll see why it *gives* with every change in weather, why it doesn't crack and scale and keeps moisture away from wood.

Of course you knew all this from your experience.

But here you have a proof of the pudding *before* the eating—a definite, tangible demonstration you can *see, feel* and *understand*.

• • •  
We shall be glad to send the booklet, "What to expect from white lead paint," upon request.

**LEAD INDUSTRIES ASSOCIATION**  
420 Lexington Avenue, New York, N. Y.



**INSULITE**  
*The* **ORIGINAL**  
**WOOD FIBRE**  
**STRUCTURAL INSULATION**

**THE PIONEER IN THE INSULATION FIELD**  
**1914 - 1940**

**WHEN**, in the summer of 1914 just at the beginning of World War No. 1, the Minnesota and Ontario Paper Company introduced INSULITE, the original wood fibre building board, it started a new era in building which has spread to the far corners of the globe.

INSULITE has always led the way.

Year by year INSULITE engineers have solved building problems with these modern building materials.

A quarter of a century of hard usage under every conceivable condition has proven INSULITE'S durability and adaptability in solving problems of insulation, acoustics, decoration, upkeep and permanent investment.

If you are a modern builder — and we know you are — let INSULITE help you. Re-check your files today. See that your samples and specifications are complete. Feel free to write us. The Insulite Company, Dept. AB129, Minneapolis, Minnesota.



Bildrite Sheathing fits tightly against all house joinings and keeps cold drafts away from floors and windows.



Lok-Joint Lath fits directly to the house studs and makes a smooth, safe, crack-proof base for plaster.



Graylite walls and tiled Ins-lite ceiling blend to create the charming atmosphere of this living room.



Smoothcote ceiling and Graylite Plank walls carried out perfectly the cottage style of this breakfast nook.



Insulite materials made this cafe modern as tomorrow. The ceiling is Ins-lite Tile Board, walls are plain Ins-lite.



A happy combination for an amusement room! Graylite Plank walls and plain Graylite wainscoting. Ins-lite covers the ceiling.

**INSULITE**

MINNEAPOLIS



MINNESOTA

Copyright 1939, by Insulite

**INSULITE PRODUCTS INCLUDE:**

**Insulite Interior Finishes:**

INS-LITE • GRAYLITE  
 ACOUSTILITE • SATINCOTE  
 SMOOTHCOTE • HARDBOARDS

**Structural Insulite:**

LOK-JOINT LATH  
 BILDRITE SHEATHING

**THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD**



# On job after job, winter or summer this contractor makes profitable savings

When M. C. Foy & Son, used Lehigh Early Strength Cement for winter-time concrete in the Wolcott Bldg., Hutchinson, Kansas, quick curing reduced their normal costs by \$1500. Since then, winter and summer, they have continued to profit by the cost cutting ability to get service strength concrete in one-third to one-fifth the usual time. A notable summer job was the Little River High School and Grade School—here savings came from reduced working time, lower form costs, continuous working schedule, and lower overhead.

Here is news of another Foy job done in midwinter. On the Hutchinson Junior College, using Lehigh Early Strength Cement, heat protection costs were materially reduced. Forms were stripped in 12 to 16 hours. This eliminated idle waiting time, permitted continuous construction, and delivered the job 3½ weeks sooner. Overhead costs were reduced \$800.

Whether the job is large or small, these same relative savings result. At any season, Lehigh Early Strength Cement produces concrete with a 24-hour strength equal to that of normal cement at 7 days, when used under similar conditions. Use it this winter for economy and safety—it quickly cures beyond the danger of freezing. Use it at any time for the time and money savings you can make. It also makes better, denser concrete.



**LEHIGH  
EARLY STRENGTH  
CEMENT**

**LEHIGH PORTLAND CEMENT COMPANY**

Allentown, Pa.

Chicago, Ill.

Spokane, Wash.



HUTCHINSON JUNIOR COLLEGE, Hutchinson, Kansas  
 ARCHITECTS: McCrackin & Hiett, Hutchinson, Kansas  
 CONTRACTORS: M. C. Foy & Son, Hutchinson, Kansas  
 Lehigh Early Strength Cement was used for all concrete in the structure. For sidewalks and drives, reduced curing time was of no advantage and Lehigh Normal Cement was used.

# Look!

## Installing KIMSUL is usually a "One Man Job"

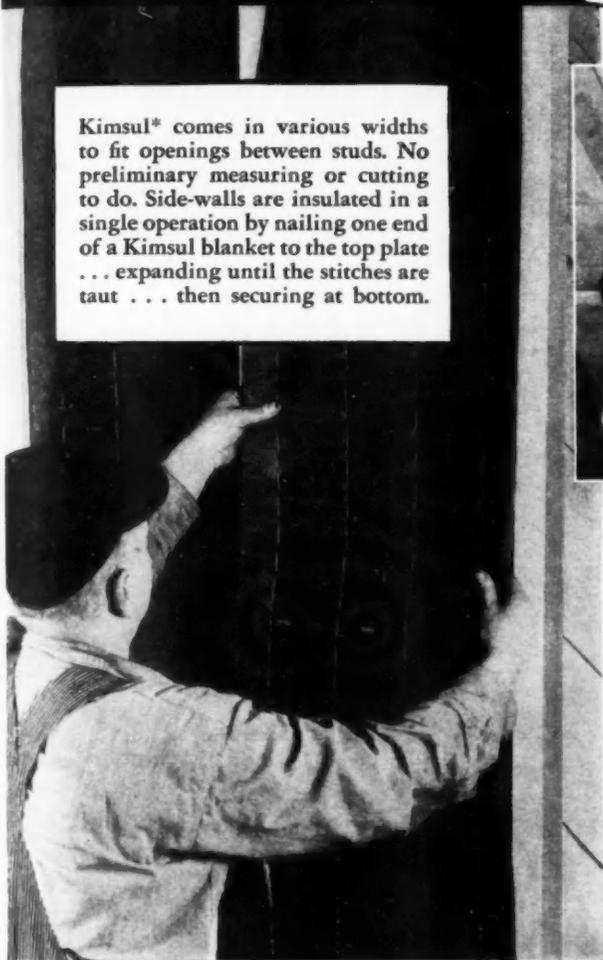
# Presstitched KIMSUL Expanding Blanket INSULATION

REG. U. S. & CAN. PAT. OFF.

Kimsul\* comes in various widths to fit openings between studs. No preliminary measuring or cutting to do. Side-walls are insulated in a single operation by nailing one end of a Kimsul blanket to the top plate . . . expanding until the stitches are taut . . . then securing at bottom.



Even sloping roofs are easy to insulate with Kimsul. All that is required is to fasten an expanded blanket to the rafter plate, pull taut to the ridgepole, and nail.



Piping and wiring cause no difficulty in a Kimsul installation — because, being flexible as cloth, Kimsul can be drawn around corners and woven thru or under pipes or wires. Even an inexperienced man can install a snug job that is free from heat leaking joints.



As these photographs show, no special tools, nor special skill are required to apply Kimsul. A saving in construction costs which you can't afford to overlook! But even more important, Kimsul

applied this easy way provides as perfect a job as you or your customer could ask for! One in which heat leaking joints are minimized . . . in which the continuous unbroken blanket, essential to real efficiency, is obtained.

\*Reg. U. S. & Can. Pat. Off.



### Ask for these INSULATION BOOKS

"Controlled Insulation Value" and "Greater Comfort" contain many facts about building insulation. If you have not received your copies, mail coupon today.

KIMBERLY-CLARK CORPORATION (Kimsul Division), Neenah, Wis.  
Established 1872  
NEW YORK, 122 East 42nd St. CHICAGO, 8 South Michigan Ave.  
AB1239

Mail me copy of booklet describing Kimsul, also a full sized sample. Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_  
PLEASE CHECK: ARCHITECT  BUILDER  DEALER

# Do You Know What



# Holds for Building?

Business is better. Freight car loadings, steel output, power production and other indices say so. Increased national prosperity is on the way. What will be the building industry's share in 1940?

This year 315,000 new single-family dwellings will be erected. The 1929 total was 316,000 new single-family dwellings. Residential construction in 1940 is expected to run ten to fifteen percent ahead of this year.

The building industry will enjoy a sizable share of increased national prosperity in 1940. It will be responsible for much of that prosperity through increased employment, the manufacture and distri-

bution of building materials and equipment.

The January AMERICAN BUILDER—1939 Review and 1940 Forecast—will present the who, what, when, where and why of the building outlook. All indicators show that building is on a long-overdue upswing. This means that 1940 advertising and promotion campaigns in AMERICAN BUILDER will be addressed to an expanding market.

Advance proofs of the AMERICAN BUILDER 1939 Review and 1940 Forecast will be sent to manufacturers of building products, and those who plan their advertising, on request.

**AMERICAN BUILDER**  
AND BUILDING AGE

A Simmons-Boardman Publication

**ABP**

105 W. Adams Street  
Chicago, Illinois

30 Church Street  
New York City

**ABC**

**THE WORLD'S GREATEST BUILDING PAPER**

# WHAT A DOGGY HOSPITAL!



For this modern animal hospital at Manhasset, N. Y., exterior and interior walls are of factory-mixed Mohawk Stucco, made by C. A. DeLevante, Rockville Center, N. Y., with Atlas White portland cement. Architect, Arthur Coote; contractor, Peter McBride—both of Great Neck, N. Y.



**WHAT DO YOU EXPECT?  
IT'S A STUCCO JOB!**



**A FACTORY-PREPARED STUCCO IS PREFERABLE**

**Y**ES . . . Long Island, N. Y., household pets can now boast of having the swankiest hospital in the country! This modern, distinctive-looking building in metropolitan New York has been finished *inside and out* with Mohawk Stucco—made with Atlas White portland cement. Why? Because stucco fits in so well with modern architecture . . . because it's so remarkably economical in first cost and upkeep.

It can pay you, too, to take advantage of the outstanding features of stucco. Use it—either completely or in conjunction with other materials—on your next job—no matter what it is—animal hospital, imposing office building, or friendly home. You'll find stucco made with Atlas White cement . . .

. . . provides a sturdy, fire-safe and weather-resistant outside finish . . . can be successfully applied in a wide range of colors and textures . . . is low in first cost and needs practically no upkeep . . . endures in *any* climate.

Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

AB-8-9

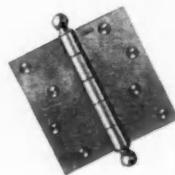
STUCCO MADE WITH **Atlas White** PORTLAND CEMENT



**SATISFACTION** . . . a door that hangs straight and true . . . hinges that stay carefree . . . a lock that clicks to a perfect fit . . . you get them all with the *third hinge on every door!*

Wood warps! Doors will bow out! The small investment for the third hinge will pay for itself many times over. The Stanley Works, New Britain, Connecticut.

Stanley 241  
Standard Of The  
World For Over  
Fifty Years;



# STANLEY

Trade Mark

HARDWARE FOR CAREFREE DOORS



# HERE'S THE LINE OF INSULATION THAT'S SWEEPING FAST ACROSS THE NATION

HEAT, COLD, MOISTURE...LOCKED OUTSIDE  
FINEST BOARD I EVER TRIED!



**GOLD BOND INSULATION SHEATHING:** Made from tough wood fibres. Asphalt coated for extra moisture protection. Aluminum painted for reflective insulation. Shiny surface stops radiant heat. Tiny air cells insulate against conducted heat. Large strong panels cost no more than ordinary wood sheathing.

BIG, WIDE PANELS GO UP FAST,  
TOUGH AND RIGID...BUILT TO LAST



**GOLD BOND INSULATION LATH:** Multi-Seal processed against moisture. V-lap joints on long edges. Beveled all around for extra plaster thickness over joints. Big, sturdy panels, quickly applied, insulate against heat and cold, cut room-to-room noise. Supplied with or without special metal reinforcing on the edge.

SMART, LIGHTWEIGHT...NO FEATURES LOST  
THEY DO 4 JOBS AT ONE LOW COST



**GOLD BOND INSULATION BOARDS:** Board, plank or tile, in three surface finishes. Variegated blends in plank and tile. Insulate, decorate, absorb sound, cut room-to-room noise. Lightweight, sturdy, made from southern hardwoods—no waste materials. Applied quickly right over old walls and ceilings.

THIS STRONGER LATH AND BETTER WOOL  
KEEP YOUR PROFITS RUNNING FULL!



**GOLD BOND ROCK WOOL:** Fire-proof, lightweight, vermin proof, moisture resistant, permanent. Supplied in batts, granulated or loose.

**GOLD BOND GYPSUM LATH** with Aluminum Foil: A permanent, insulating plaster base. Combines reflective insulation with fireproof gypsum lath.

# Gold Bond

WALL & CEILING PRODUCTS

OUR INSULATION DIVISION will be glad to answer inquiries on any insulation problems, and recommend Gold Bond products best suited to your job. Samples may be obtained from your local Gold Bond representative.

NATIONAL GYPSUM COMPANY, BUFFALO, N. Y.

**WHERE CAN YOU FIND WINDOWS  
So Attractive at Such Low Cost?**



**ONLY \$6867 NET  
FOR ALL FENESTRA CASEMENTS  
IN THIS \$3800 HOUSE**

**READ WHAT THE BUILDER  
*Says***

W. L. GREER  
DEVELOPER AND BUILDER  
SHEFFIELD LAKE • OHIO

"Fenestra Casements  
save installation costs.  
They add 43% more day-  
light. They help me  
interest prospects."

Note carefully the clean, trim lines of the Fenestra Steel Casement Windows in this low cost house—the beauty which attracts buyers both from the outside and the inside. Think of the added comfort—easier opening, safer cleaning, more daylight, better ventilation, superior weather-tightness, better screens, etc. Realize the economies of lower first cost and lower upkeep... Mail the coupon—get the facts on why there's a big rush by builders to Fenestra.

***Fenestra***  
BONDERIZED STEEL CASEMENTS  
INSIDE INSULATING WINDOWS... INSIDE SCREENS

Detroit Steel Products Co.  
2250 E. Grand Boulevard, Detroit, Mich.  
Please send free literature, as follows:

New Portfolio of plates by Architects for Builders, illustrating "Window Ideas" for Colonial Houses.

New Fenestra Catalog of Residence Casements.

Name \_\_\_\_\_

Address \_\_\_\_\_

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

San  
Lee.  
H.  
Pre.  
Roy  
son,  
Tre  
Sub  
Pos  
year  
tries  
\$10.  
H.  
30 C  
Men  
(A.  
Circ