



COOL modernism in stair treatment in the "Chicago American" model home in Beverly Hills—Ronald F. Perry, architect.

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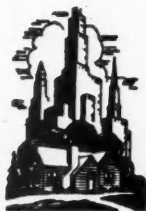
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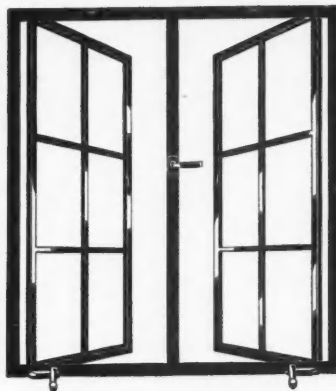
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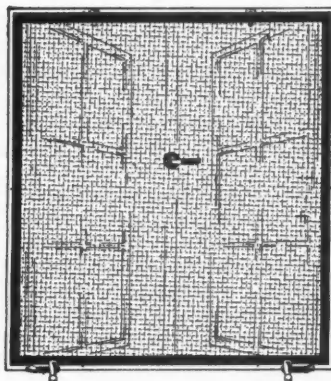
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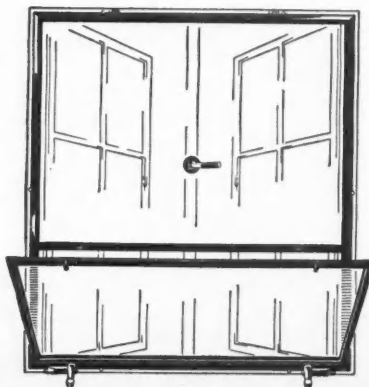
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Replaces screen in winter. Extruded rubber weathering around handle and around perimeter of frame seals opening tight. Provides 3/4" insulating, dead-air space. Double strength glass. Tilt-in sill ventilator admits fresh air. "Fixed light" types also available.

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ECONOMY OF SCARCITY— OR ABUNDANCE?

THERE is not an act of our lives relating to earning or spending that is not based on some economic theory. We are all theoretical and practical economists—consciously or otherwise.

The economics most important to us in the long run are those relating to the *total national* production and distribution of income. They determine both how much will be produced and largely what share of it each of us will get.

Total contracts for residential construction increased from about \$230,000,000 in the first half of 1935 to about \$369,000,000 in the first half of 1936, or 61 per cent. But they were still less than one-third as large as in the first half of 1929.

The country vitally needs a continued and expanding increase of housing construction to provide more employment, and more and much better places for the people to live. The extent to which it will have it will be determined by policies determining the *total national* production and distribution of wealth and income.

TWO great theoretical and practical national systems of economics are now struggling for the mastery. *We cannot avoid supporting one or the other.* One is an "economics of scarcity". It assumes that the depression was caused by general over-production, and that production in agriculture and industry must be restricted to prevent continued depression and unemployment. The other is an "economics of abundance". It recognizes that there has been and can be *unbalanced* production—temporarily too little of some things in proportion to others; but assumes that there never has been or can be *general over-production*—that the welfare of every class of the people is promoted by balanced *maximum* production of all useful things.

WHICH economics is sound? Apply them to building. Is there any danger or prospect that too many light, airy and roomy houses and apartments, equipped with all modern comforts, conveniences and luxuries—including air-conditioning, for example—will be built? The "economics of scarcity" says there is—that if we work full time we will produce more of everything, including good housing, than the people can use, and cause unemployment. The "economics of abundance" says there is no such danger—that the way to provide full employment is year after year to save and invest billions of dollars in order to provide the American people, among many other desirable things, with much roomier and better equipped housing than a large majority ever had, or even dreamed of having.

The "economy of scarcity"—of restriction of work and production—is plainly unsound. We plainly cannot increase the national income by policies of government, agriculture, business or labor restricting production—the only source of the total divisible national wealth and income. And we cannot adequately increase and improve housing except by increasing, through increased production, the incomes of the vast majority of the people who need and want better housing.

Samuel O. Drinn



Before and After pictures showing remarkable rehabilitation of Commercial Museum, 34th and Spruce Streets, Philadelphia, using stucco made with Atlas White portland cement. Plans and specifications prepared by the Department of City Architecture, Philadelphia.

Presto!

Look what Stucco did!

● Twelve thousand square yards of stucco, and the dingy Commercial Museum of Philadelphia was changed into a beautiful building that ranks in attractiveness with the city's finest! *Atlas Gray* was used for the base coats. *Atlas White* for the finish coat.

White portland cement stucco has certain definite advantages that you should be thoroughly familiar with when you are planning either modernizing or new construction:

1. *It is a durable finish.* A thin but sturdy wall of concrete, with the permanence, weather resistance, and fire resistance of concrete.
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Write for detailed information on Atlas White . . . plain or waterproofed, and facts on the newest developments in stucco. You'll be interested in other outstanding modernizing jobs, big and small, in which this good stucco has figured.

UNIVERSAL ATLAS CEMENT CO.

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STUCCO MADE WITH **Atlas White** PORTLAND CEMENT

AMERICAN BUILDER AND BUILDING AGE

Finding the One Per Cent

IT IS estimated that some 250,000 homes or family "housing units" will be built this year; which means not quite one for every hundred of the 30 million families which now constitute the population of the United States. In other words, taking folks on the average this year, a little less than one per cent of all families are interested in building a new home or are in the market for a newly built house or apartment.

In most lines of business this would classify as a *thin market*. However, when it is realized that each sale in the housing market averages about \$5,000, the importance of locating and selling this one per cent is apparent.

Building contractors, architectural planners, building material dealers, are the principal salesmen of the home building idea and of home building service to the general public. The volume of building work—or the lack of volume—in any community very largely depends on the enterprise, resourcefulness and salesmindedness of these local building men.

"Industrial Clinic" Method Recommended

In another part of this magazine there is outlined a very simple and easy method by which building industry men can quickly and cheaply locate the live prospects for new homes. This method not only discovers the man who is interested and wants a home, but also it automatically reveals those financially qualified to undertake a building or buying program.

This method has been tested out by FHA directors in northern Ohio and has made good. It is now turned over to *American Builder* readers to use in locating interested and qualified prospects. It is sponsored and endorsed by FHA.

As James G. Caffrey, author of the plan and director of the Ohio test, has said: The Federal Housing Administration, as a government bureau, has promoted home building, it has created favorable public opinion toward building at this time, and has restored the people's confidence in home financing; it has set the stage for a big upturn in building activity; but it can't go out and actually *make the sales*; private industry must do that, and we are depending on salesminded building contractors and dealers, as the *key men* of the building industry, to follow through with this "industrial clinic" method to locate these qualified home seekers, offer them the service they

require, make these sales and turn this present general interest in home building into definite signed orders for construction.

Knowing *American Builder* readers as we do, the Editors have had no hesitation in promising *action* on this great business building program. It is all ready to use—you don't have to wait for anyone or anything. Each individual can use it in his own way in his own town or community. Let's go.

* * *

Is the System Wrong?

THE recent disastrous crash of a six-story apartment structure nearing completion in New York City, in which 18 persons were killed, has caused a great many people within and without the building industry to do some serious thinking.

Is the system under which apartment buildings and other structures of this type are built a safe and satisfactory one? The *American Builder* will not attempt to answer this question, but it believes that the comments that have followed this serious failure should be reported.

One of the first criticisms is of the financial, competitive bidding methods that were used in this building and are common to most other current construction. It is stated with great truth that competitive bidding has given rise to many pernicious practices that have resulted in the deterioration of building standards. Price alone has been made the standard of success, and the thoroughly reliable contractor who guarantees a good job and is capable of doing a good job suffers because less competent, less capable men get the work on a low-price basis.

It is pointed out that the construction of large buildings is a public operation that should call for high professional standards. Yet practically no limitation is set up to prevent the promoter interested in a low cost and a quick, high profit from getting away with everything he can.

Well trained, sincere, and high-minded professional building men rightly complain that a large part of the present building promotion methods put operations on a tooth-and-claw basis that eliminates conscientious workmanship and pride in doing a good job. It is said that anyone who can wangle a piece of land and some money, and is cunning enough to keep within loose building laws, can become a builder.

These accusations bring up again the agitation for adequate contractors' license laws. Architects, plumbers, electricians, and many other important groups in the building industry are required to show that they are qualified to operate, and must obtain licenses. Yet the general contractor who is by far the most important element in the job is not required to show any qualifications.

The various architectural and engineering societies are using the Bronx building collapse as a strong argument for strict laws requiring more rigid inspections by qualified architects or engineers. They further argue that a highly qualified professional architect or engineer should be required to be a member of the organization in constant attendance on the job.

Still another argument strongly presented by many persons is that stricter requirements by lending institutions should be set up to improve the status of construction. Clyde A. Mann, managing director of the Certified Building Registry, points out that structural ratings of the type his organization makes, which recognize sound methods and penalize lack of them by refusal to loan money, would prevent many abuses. He states that "the root cause of building failure is lack of financial discrimination that recognizes excellence by the loan amount or terms and thus reverses the pressure for cheapness which leads to just such haste and wanton disregard for good practices as has been revealed in the Bronx case." He further cites the rating methods of ship structures which have become the byword of excellence because they are classified according to merit, and builders strive to secure the highest A-1 rating.

Certain it is that a collapse such as this apartment structure—a large six-story building which was practically completed and had been dedicated only three days before at an elaborate ceremony—should make every building man stop and think. Such collapses fortunately are rare, but poor construction and irresponsibility unfortunately are not.

* * *

Ten Commandments of Home Building

TEN 1936 commandments for the family which is building a home, to save it from pitfalls which ruin the house's rating with the mortgagee, have been compiled by the National Society of Residential Appraisers. The decalogue deals with common mistakes which account for many new houses being given a lower loan valuation than the builder feels to be justified, or for their being turned down by the conservative lender of mortgage money. Here are the fateful ten:

1. Don't build too pretentious a house on a cheap lot or vice versa. The ratio of house to land value should tend toward not less than 3 to 1 and not more than 7 or 8 to 1, in order to qualify before the appraiser and before the mortgagee who depends upon the appraiser's conclusions.

2. Don't put a squatty, low house on a low piece of ground, or a tall, thin house on the crest of a hill. In this connection it is suggested that where plans for the

house have been drawn up by an architect for a site different from the one for which they are now being used, extreme care should be taken that they fit the new location. The same warning applies to stock plans—see that they suit the topography of the land.

3. Don't put a large house on a small lot, nor set the house close to the street when you have a deep lot. One of the amenities of home ownership is availability of air, open space, some yard for the indulgence of the owner's sense of landscaping and gardening. When the house takes up practically all of the lot, this great advantage of home ownership is lost at the outset.

4. Don't build a garage detached from the house; but provide an entrance to the attached garage from the inside of the house. Make the garage large enough to house two cars.

Plan from Inside Out

5. Don't plan the exterior first and then force the interior to fit the outside plan. This is often the origin of the poorly laid-out house, an uneconomic use of the space.

6. Don't put cheap or out-of-date products and equipment into a house that is otherwise well built and modern. An example of this mistake is the placing of a bathtub with the old fashioned leg base in a modern house. It is possible to save \$100 on the plumbing and deprive yourself of \$500 in value in the finished home.

7. Don't have non-matching exteriors and interiors, as to quality of materials. It costs far more to repair inconsistencies of this kind after they have been built into the house than to avoid them in the beginning.

8. Provide a convenient space in the kitchen for the installation of a mechanical refrigerator, and avoid installation of antiquated heating systems without automatic control.

9. Have windows, doors, and radiators so placed that the normal amount and type of furniture can be arranged tastefully and easily in the rooms. Watch the location of the light plugs so that most modern electric equipment can be easily used.

10. Allow for closet space on the first floor and for ample closet space in connection with the bedrooms. Closet space is one of the distinct advantages which the single-family home can usually boast over the apartment dwelling and much potential value in the house is lost if such provision is neglected.

"The value of a house, from the appraiser's and the mortgagee's standpoint, is greatly influenced by the price it can command in the market," said H. O. Walther, vice president of the Society. "Therefore, in order to get the best rating with these agencies, a newly built house should be such as to appeal to the tastes and conveniences of the largest possible number of people, because the largest number of people with purchasing power make up the largest market." These "don'ts" gathered together by the Society attempt to give the 1936 home builder a view of what suits the largest number of people in the matter of a home.



NEW IDEAS—NEW SALES APPEAL

Contractors, operative builders, architectural organizers, building material dealers... all the sales-minded men of the building industry... have a powerful sales ally this season in the exciting new materials and equipment which so definitely stamp a bathroom—a kitchen—a basement—or an entire house—as NEW or OLD.

Here we see some of these new incentives to building and rebuilding exhibited in a dramatized display at the recent Buffalo Master Plumbers' Show.

"THESE MEN WANT TO BUILD

Will YOU Consult with them and Offer them your Experience in Home Planning and Building?"

FHA invites and urges "American Builder" readers to follow up its test of the "Industrial Clinic" method of locating live home building prospects described on these pages

Experienced Contractor-Builders and Dealers seen as "Key Men" in latest FHA Home Building Program

JAMES G. CAFFREY of Ohio, special assistant to the Administrator, FHA, has been testing out a method for locating individuals who want to build and who have a steady income sufficient to qualify under FHA rules for mortgage insurance. It is a practical way to convert the present widespread general interest in home building into specific qualified prospects for definite home building jobs; and, according to Mr. Caffrey and other FHA officials, it is "made to order" for *American Builder* readers as the natural salesmen and planners (as well as the *makegooders*) of the home building industry.

This new method of reaching the interested and qualified home building prospects is known as the Industrial Clinic method. It is so simple and easy in its operation that it's a wonder more use has not been made of it.

As is well known, most factory and plant executives favor home ownership and are willing to co-operate in plans to help their men acquire homes. At the present time, especially when there is so much interest in home building and social security and so much talk of higher rents and housing shortage, industrialists are, in general, eager to back up the FHA campaigns for better housing

and more home ownership among their plant workers and office staff men.

Mr. Caffrey in his position as head of FHA promotional activities in Ohio has utilized this friendly interest on the part of plant executives to make a test of the method of working through them to reach the men in the shops and offices. For this test he has prepared simple questionnaire forms (like the one reproduced on the opposite page) and has arranged to have them passed out by the personnel officer or superintendent to all employees of industrial plants in Northern Ohio. These forms are passed out with the request that anyone interested in building or buying a home and wanting information from *qualified local consultants* in regard to financing, planning or building should fill out the questionnaire and return it to the plant office. The answers to the questions on this form indicate clearly both those individuals who are live prospects for building and also whether or not their income is sufficient and steady enough to qualify for FHA mortgage insurance.

The questionnaires are returned to the plant office and under the plan recommended by Mr. Caffrey would then be turned over to the contractor-builder or supply dealer who furnished them, so that the individuals indicating an interest in building could be contacted and sold on going ahead immediately.

The results of the test campaign in Ohio have been so encouraging that *American Builder* readers are now invited and urged to pick it up and make it nation-wide, extending the distribution of these questionnaire forms into every industrial plant and group of wage earners in the United States.

Contractor-builders experienced in home building and also retail lumber and supply dealers are recognized by FHA officials as the logical men to do this consulting and selling job, to follow through with these questionnaire prospects and give them the sound advice and constructive service that is required to capitalize on their interest and turn each of these prospects into a building contract.

Do These Look Worth While?

In the Ohio test campaign early this summer about 200,000 questionnaires were distributed and more than 600 live building prospects were discovered. Picking some of these at random shows the wide range of interest that there is today toward home building. Low cost homes, medium cost homes, and expensive homes are all encountered in these returns. Here are summaries of 16 questionnaires filled out in this Ohio test:

Mr. C., for 11 years mechanical engineer with the Surface Combustion Corp., Toledo, wants to build a \$10,000 home in suburban location. Is now paying \$35.00 a month rent. Can make

INDUSTRIAL CLINIC QUESTIONNAIRE
FOR PROSPECTIVE HOME OWNERS

IF INTERESTED in building or buying a home under present favorable conditions,
please jot down items requested and return to office
for guidance of Federal Housing Administration
and of local building consultants.

Name _____
Home Address _____
Street _____
City _____

Business Address _____
Street _____
City _____
Name and Business of Employer _____

1. Do you want to build or buy a home? _____
2. What is the value of the home that you think you desire, or can afford? _____
3. What is your monthly rent? _____
4. Do you own a lot; if so, what value do you place upon it? _____
5. How much of a down payment can you make? _____
6. In what section of the city do you prefer to live? _____
7. Have you negotiated for the purchase or plans of a home, and if so, with what result? _____
8. Have you made an application for a loan from anyone? If so, please give full information. _____
9. What is the character of your employment, and how long have you been so employed? _____
10. What is the amount of your income? It is not our desire to inquire into the earning power of the prospective home owner, but if a statement can be made which would indicate that you earn over a certain amount, without definitely stating how much, it will help to determine what value home you should build in order to be eligible for an insured mortgage under Federal Housing Administration rules. _____

"American Builder" in co-operation
with the Federal Housing Administration

This form has the approval of FHA. "American Builder" readers may have it reproduced in any needed quantities by any convenient method—typewritten, multigraphed, planographed, or printed. The Secretary of the Ohio Association of Retail Lumber Dealers, Xenia, Ohio, has printed a quantity of these forms for shipment (at cost) to dealers or builders desiring to distribute them to local groups.

a down payment of \$1,000. Has an annual income of about \$4,000.

Mr. D., an electrical operator for the Owens-Illinois Glass Co., Toledo, wants to build a \$5,000 home in West Toledo. Is now paying \$30.00 a month rent. Can make a down payment of \$750 to \$1,000. Has an income of \$130 a month while his wife, also employed, makes \$100 a month.

Mr. R., with Purchasing Department, Owens-Illinois Glass Co., Toledo, for 17 years, states that he wants to build a \$20,000 house. Is now paying \$115 a month. Owns a lot valued at \$2,500 and can make a down payment of \$15,000.

Mr. L., a foreman for 11 years with Libbey-Owens-Ford Glass Co., Toledo, wants to build a home at about \$10,000. He owns a lot valued at \$1,500. Can make a down payment of about \$2,000. Has an annual income of about \$3,500.

Mr. E., another Libbey-Owens-Ford Glass Co. employee, living at Rossford, O.; 18 years in the Maintenance Dept. Wants to build a \$5,000 home. Now paying \$25.00 a month rent. Owns lots in two different locations valued at \$1,200. Can make a down payment of \$1,000. Is earning \$160 a month.

Who Will Make This Easy Sale?

Mr. F., a glass worker employed for 8 years with Libbey-Owens-Ford Glass Co., Toledo, wants to build a \$3,500 home. Is now paying \$35.00 a month rent. Owns a 2-acre building site valued at \$1,000 and has \$1,000 in cash for a down payment. Already has building plans. Salary \$175 a month.

Mr. S., for 8 years with Owens-Illinois Glass Co., Toledo, in engineering and sales work, wants to build a \$10,000 home. Owns a \$2,000 lot in the Eagle Point Colony. Also has \$1,500 for down payment. Annual salary over \$5,000. "Just starting plans," the report states.

Mr. R., a mechanic for 30 years with the Fisher Body Co., Cleveland branch, wants to build a \$7,000 house. Present rental \$40.00 a month. Has \$1,500 for down payment. Wants to locate in one of the eastern suburbs. Annual earnings in excess of \$1,800.

Mr. H., another Fisher Body, Cleveland Division, employee, a metal finisher for 5 years. Would like to build a home costing from \$3,000 to \$4,000. Is paying \$32.00 a month rent. Has \$500 for a down payment. Is earning \$150 a month.

Mr. W., for 11 years with the Engineering Department of the Carnegie-Illinois Steel Corp., Youngstown, wants to build a \$6,000 home. Is now paying \$40.00 a month rent. Has a well located, improved lot valued at \$1,600. Can make a down payment of \$1,000. Salary \$250 a month.

Mr. H., for 5 years refrigeration service engineer with the Robinson Music Co., Steubenville, Ohio, would like to build a house of from \$3,000 to \$4,000. Now paying \$25.00 a month rent. Has \$300 for a down payment. Earnings average \$1,700 a year.

Plans Ready for Dream House

Mr. F., a draftsman connected with the Seneca Lumber & Millwork Co., Tiffin, Ohio, wants to build a \$5,000 home. Now paying \$25.00 a month rent. Can make a down payment of \$900. He already has plans for the house of his dreams.

Mr. T., rubber factory foreman, 21 years service with the Miller Rubber Co., Akron, Ohio, wants to build a \$4,500 home. Is now paying \$21.00 a month rent. Can make a down payment of \$1,000. Prefers a suburban location. Salary \$180 a month.

Mr. K., for 16 years a department manager for B. F. Goodrich Co., Akron. Would like to build a \$6,000 home. Has a lot valued at \$1,200 and can make a down payment of \$500. His salary is over \$3,600.

Mr. N., general inspector for the East Ohio Gas Co., East Akron, wants to build a \$3,000 home. Now renting at \$18.00 a month. Could make a 20% down payment. Salary about \$150 a month.

Mr. G., also with the East Ohio Gas Co., Akron, employed for 13 years. Wants to build a \$3,600 home. Paying \$31.00 a month rent. Can make a down payment of \$500. Annual earnings about \$1,400.

Live Building Prospects in Every Town

In going over such questionnaire returns as these, you wonder why these home seekers do not go ahead

and build; they evidently have the desire, the necessary steady income, and the needed cash in hand to qualify under FHA terms for insured mortgage loans. Why do they hesitate? Why isn't the building industry today getting the benefit of this piled up "demand" in the form of new building contracts?

The answer is that these men are *waiting to be sold*. They want some experienced building industry man to come to them with an offer of service and the assurance that for a stipulated and reasonable price a modern, satisfying home will be planned, financed and produced, and turned over complete, "key in lock," without any of the extras, worries and disappointments that home builders—so called—have been known to suffer.

The automobile industry goes out and does a *selling job*. So does the refrigerator industry, and the radio. The men of these up-and-coming businesses don't wait for their prospects to come in and buy. They go out after them, offering service, low prices and convenient payments. Only the building industry has been content to sit back and wait for "demand" to absorb its materials and put it back to work.

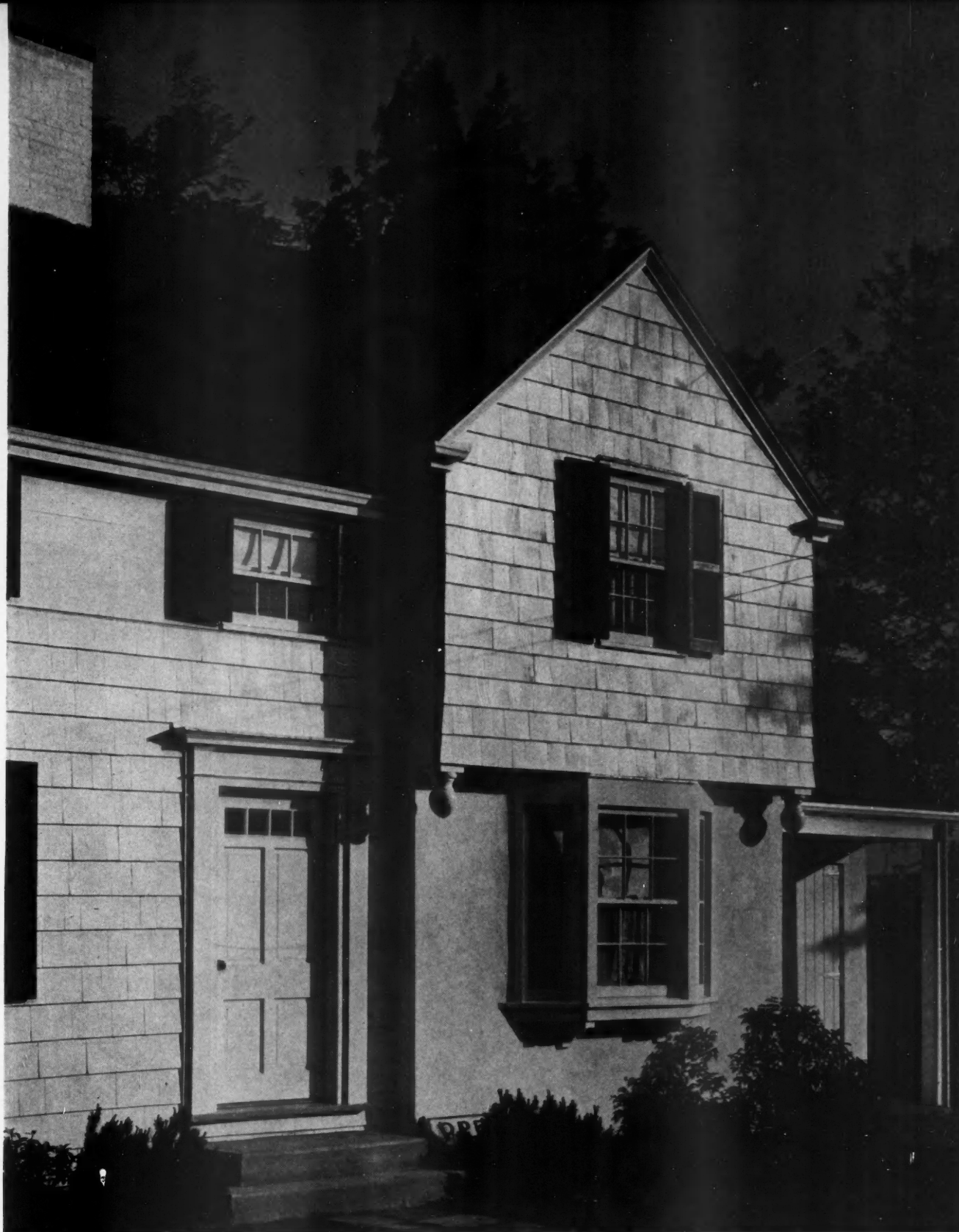
This Industrial Clinic Questionnaire for Prospective Home Owners is an easy and direct way for any and every contractor-builder or material dealer to get in touch with interested prospects for new homes. Arrange for a supply of these questionnaire forms and call on the plant executives in your community. Every town has one or more factories, shops or stores employing a number of people on steady payrolls; and the managers will be glad to help you distribute these forms to all who might be interested in home building. They will pass them out for you with the request that those interested fill out the form and bring it back *the next day*. Then you pick these up at the plant office and follow up those employees who show an interest in, and ability to finance, a new home.

The fact that this method of contacting industrial wage and salary workers has the endorsement and backing of the Federal Housing Administration gives building contractors and dealers the proper introduction in going to plant executives to arrange for this service to the employees. Readers of this publication are urged to supply themselves with these questionnaire forms and then to interview local plant managers and arrange for the distribution of these forms.

In the Ohio test it was found that department store clerks, street car men, school teachers, etc., were interested. In fact wherever a *group* of wage earning or salaried people can be reached through some central office, this questionnaire form can be distributed to advantage and will discover the interested and qualified home seekers in those groups. Once the names and addresses of those interested to build are obtained the important next step is to call and offer any needed advice or service, including help in planning, financing and in general shaping the proposition up to the place where a building contract is signed and the construction job goes ahead.

BUILDERS—Go after this waiting MARKET—Here are 3 steps!

1. Determine which groups in your locality can be reached by this method. Check with local FHA.
2. Get some of these forms made; show this article to company executives and explain benefits.
3. Then do a real selling job to these prospects.



Randolph Evans, Architect; Gustav Anderson, Photographer

Good Materials Well Used

The materials used in this house by Architect Randolph Evans are not new or unusual. They are familiar to every builder. But they have been put together with imagination, skill and attention to detail. The result is a beauty and a sales appeal that is an important asset. The successful builder today is the one who keeps abreast of the trend, as indicated in the following design pages.



VARIATIONS ON A GOOD PLAN

AN INTERESTING study in the effect of different materials on the same plan is shown in the two houses above, designed by Architect Randolph Evans and built by the Harmon National Real Estate Corporation, of New York. The house done entirely in wide siding has approximately the same plan as the one with the brick exterior at right, except that a two-car garage and extra bedroom have been added.



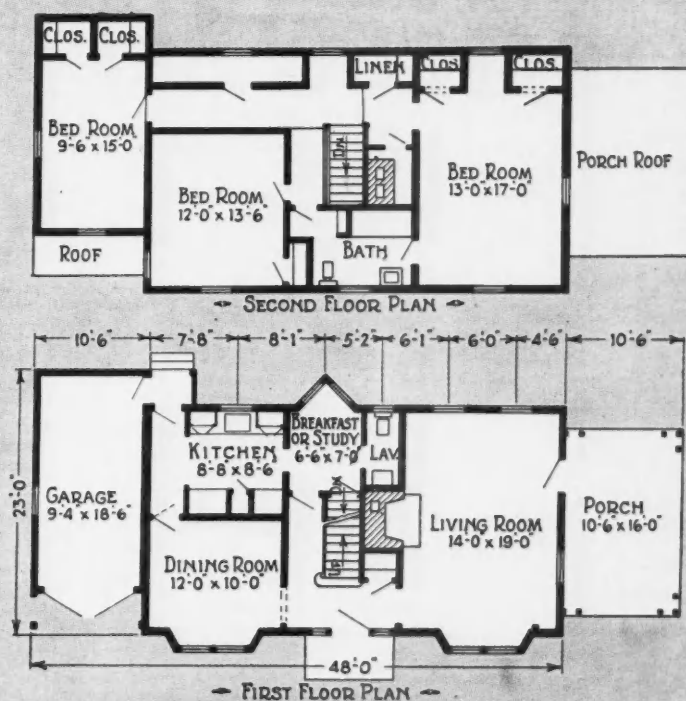
DETAILS of the entrance, at left, are handled with unusual skill and attractiveness. The door is set back and nicely spaced between the two bay windows. The simple iron railing gives an added touch that is very attractive.



Cost Key is 2.068-144-
824-36-27-19

THE OUTSTANDING feature of this floor plan is the excellent light and cross ventilation provided by the long, narrow design. The main part of the house is only 20 feet across, so that rooms can extend clear across. The length of the house makes it present an imposing front.

OTHER features of the plan that have much appeal are the wide center hall, the breakfast room or study, with lavatory, and the attractive bay windows in both dining room and living room. The bathroom upstairs has a direct door to the master bedroom but is also accessible by a hall to the other bedrooms. There is ample closet space throughout the house, and the rooms are spacious and well proportioned.

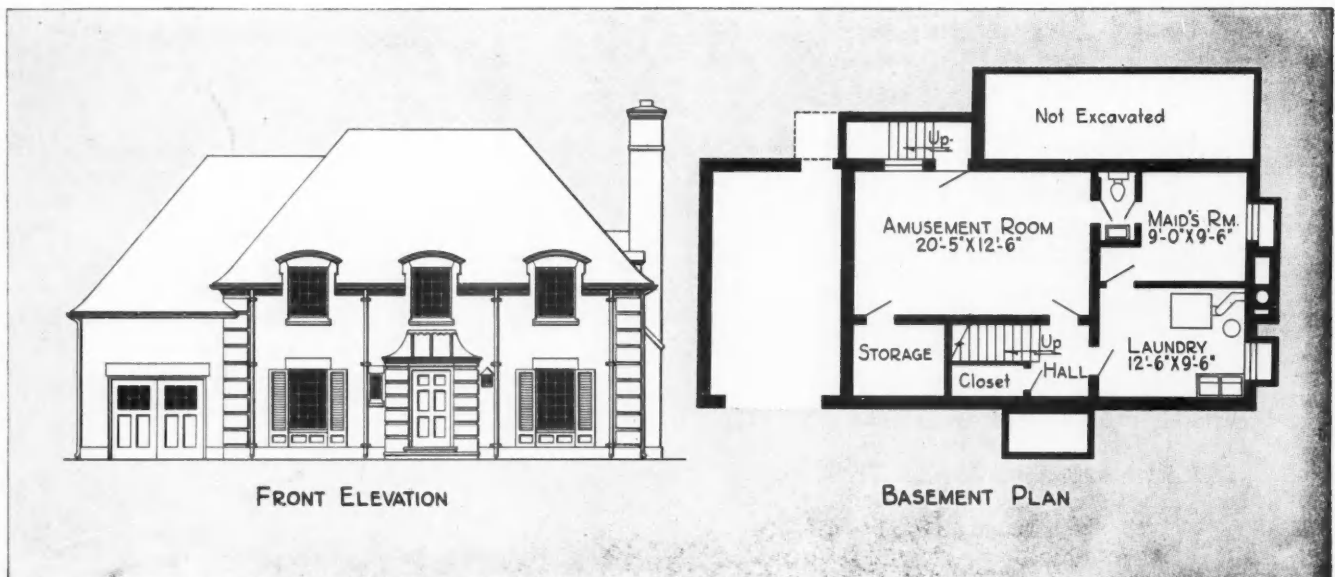




FRENCH PROVINCIAL HOUSE IN DENVER, COLORADO

Designed and Built by
Writer Bros., Inc.

Cost Key is 1.852-138-
774-34-21-18

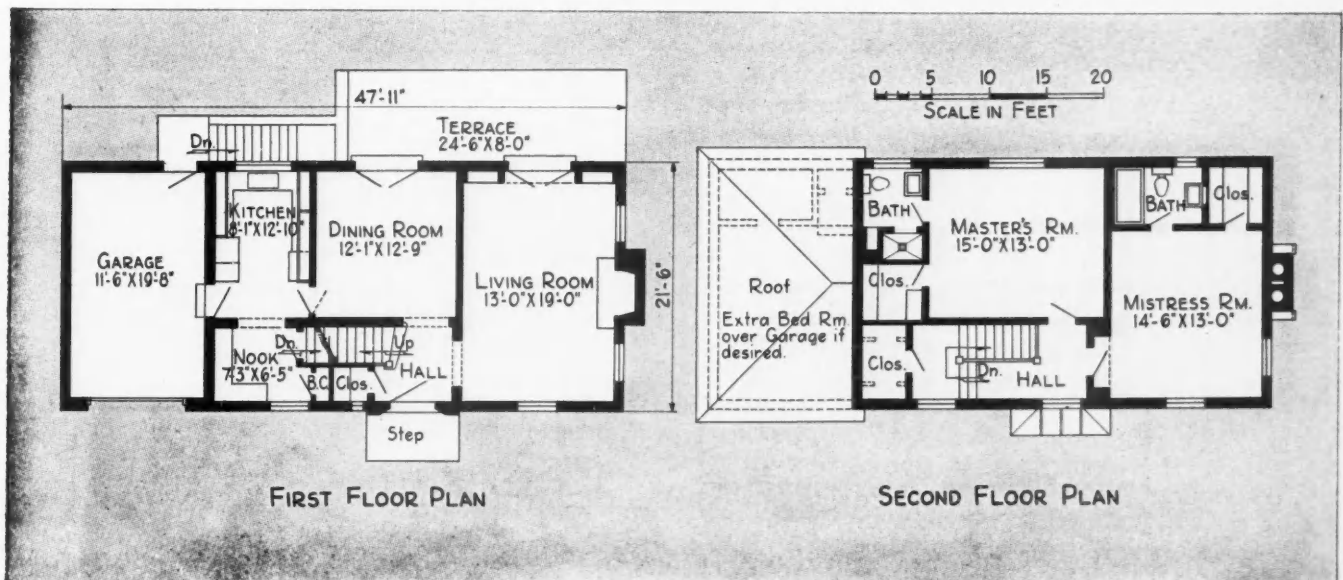


TYPICAL of the better current work in the Rocky Mountain metropolis is this 6-room and garage French Provincial house in Denver's East Side "apple orchard" project by Writer Bros. Inc. The houses in this subdivision, numbering 30 for this year's program, are being built to sell at from \$6,000 to \$15,000.

These houses have that touch of quality combined with artistic beauty, that makes it entirely unnecessary to use any high pressure selling or advertising methods. The houses actually sell themselves and in almost every instance, are sold before they are entirely completed. Some of the interesting details that produce this much wanted result are brick work painted with the modern cement type water mixed bonding paint in white, off white and cream. Roofs and exterior wood work in browns, red, blue, blue-green and green with dummy shutters, in some styles, to add to the touch of color. All houses have the garage built as an integral part of the architectural plan.



ABOVE, LEFT: View across the back lawn of the French Provincial house, showing how the lawns run together when no alley is there to separate them. This is a typical Writer Bros. arrangement. ABOVE, RIGHT: Stairway showing use of wall paper for interior decoration, in the French Provincial house.



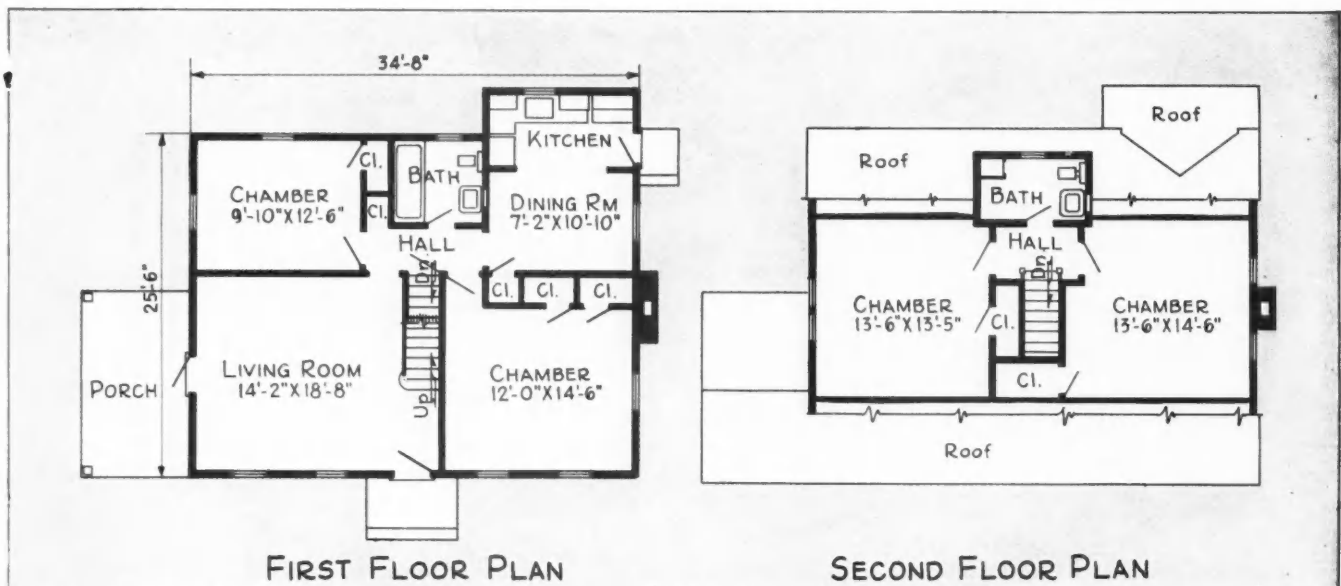


CAPE COD COLONIAL

**Built at Hewlitt Point, L. I.
Benj. Driesler, Jr., Architect
James Dorment, Contractor
Both of Brooklyn, N. Y.**

Cost Key is 1.532-128-922-39-20-16

THIS HOUSE has five rooms and bath on the first floor plus a large colonial porch. The second floor is unfinished; but a future floor plan is definitely indicated. The house is built in a location which suggests strikingly the original Cape Cod in Massachusetts. The specifications call for shingles, clapboard, poured concrete foundations, copper gutters, leaders and flashings, brass plumbing throughout, heavy plaster, brick chimney, concrete walks and driveway, 3x8 beams, colored tile bath and fixtures. Hardware by Sargent, Armstrong linoleum, built-in kitchen cabinets, etc.



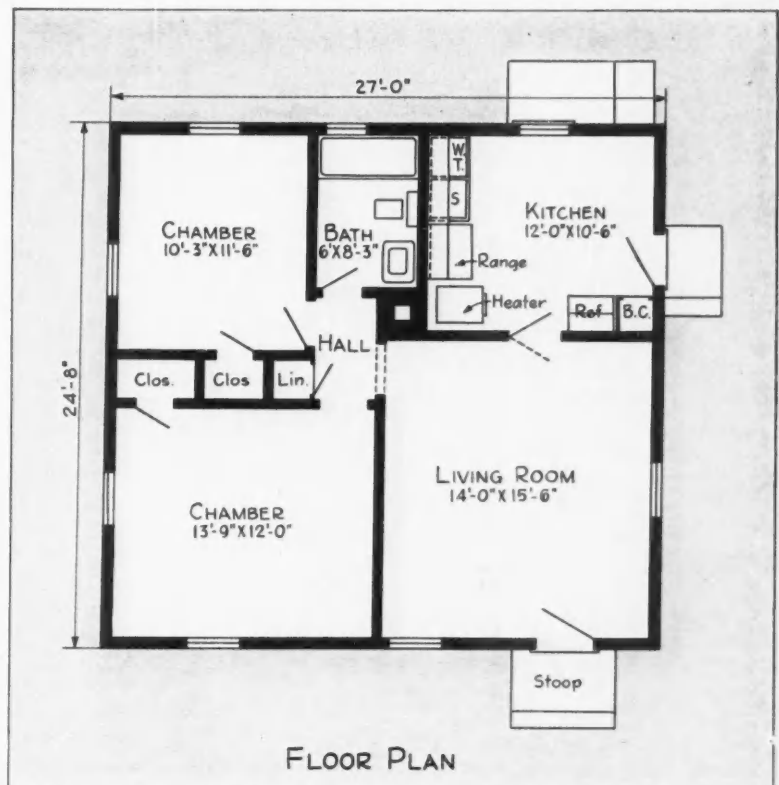


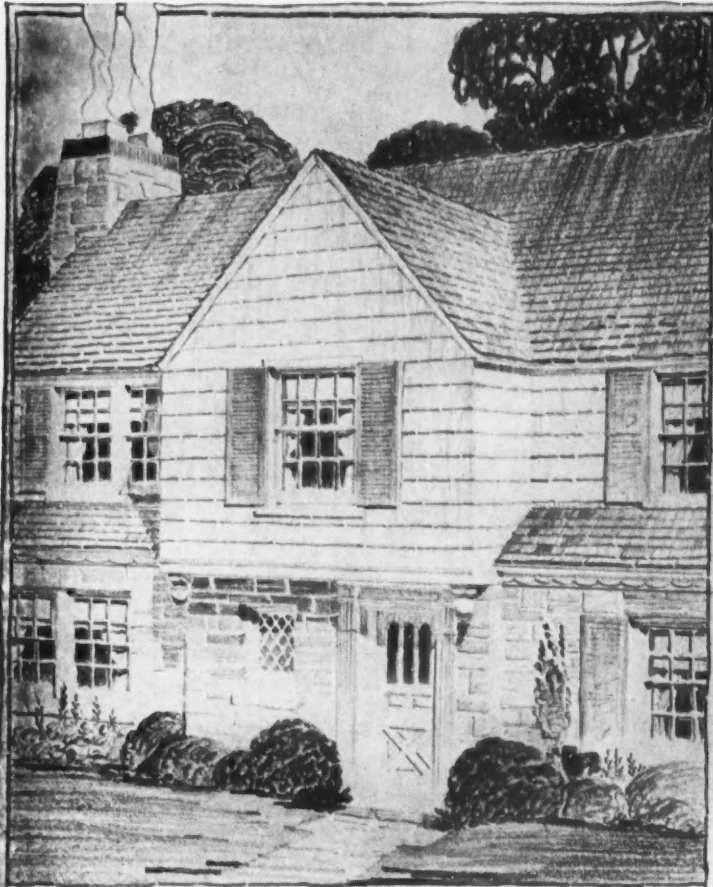
"LOWEST PRICE FHA HOME IN THE UNITED STATES"

**Built at Hillside Heights, L. I.
Benj. Driesler, Jr., Architect
Realty Associates, Inc.
Contractor
Both of Brooklyn, N. Y.**

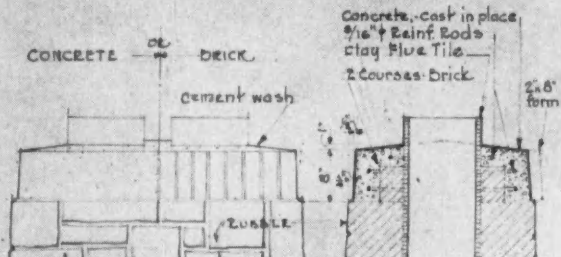
Cost Key is .798-104-666-28-13-10

THE BUILDER states "This is the lowest price FHA home in the United States. The complete price including land is \$2500. The monthly carrying charge including taxes, principal and interest, insurance, and water is \$22.07. The plot is 40x100". Specifications call for Standard plumbing, Pembroke tub, shower, Armstrong linoleum, double flooring, Certain-Teed two-coat plaster, hot water heater, built-in kitchen cabinets, $\frac{7}{8}$ " sheathing, ceramic tile in bath, finished flooring $\frac{7}{8}$ " oak, deluxe clapboard, 10" bevelled siding.

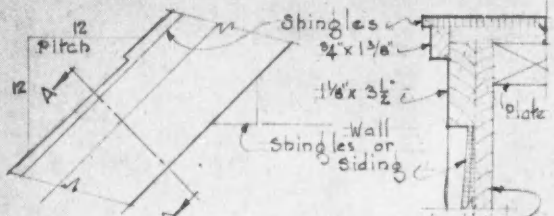




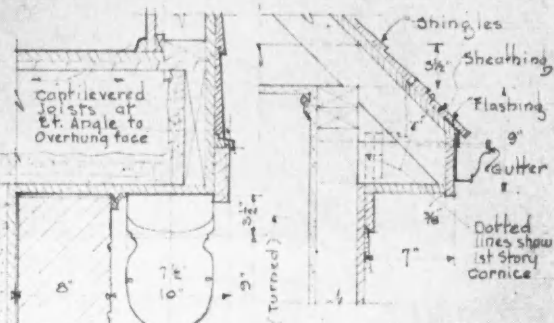
• AN EARLY AMERICAN •
• ENTRANCE & GABLE •



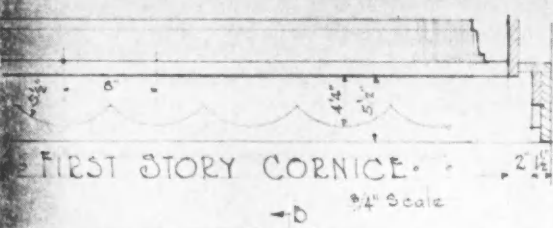
• ELEVATION • CHIMNEY TOP • SECTION •
Scale, $\frac{3}{8}$ " = 1 foot



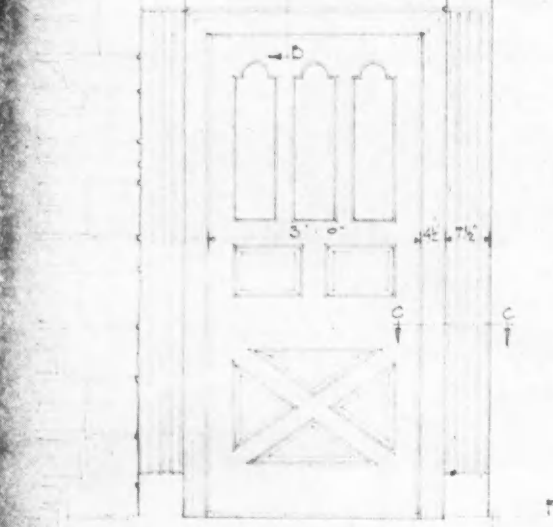
• ELEVATION • GABLE RAKE • SECTION •
Scale, $\frac{1}{2}$ " = 1 foot



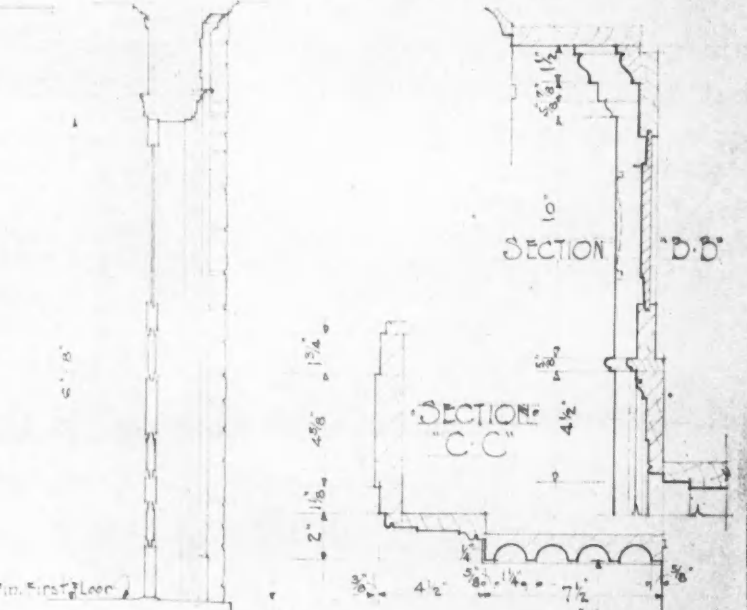
• SECTION • AT OVERHANG • CORNICE SECTION •
Scale, $\frac{3}{4}$ " = 1 foot



• FIRST STORY CORNICE • SECTION •
Scale, $\frac{3}{4}$ " = 1 foot

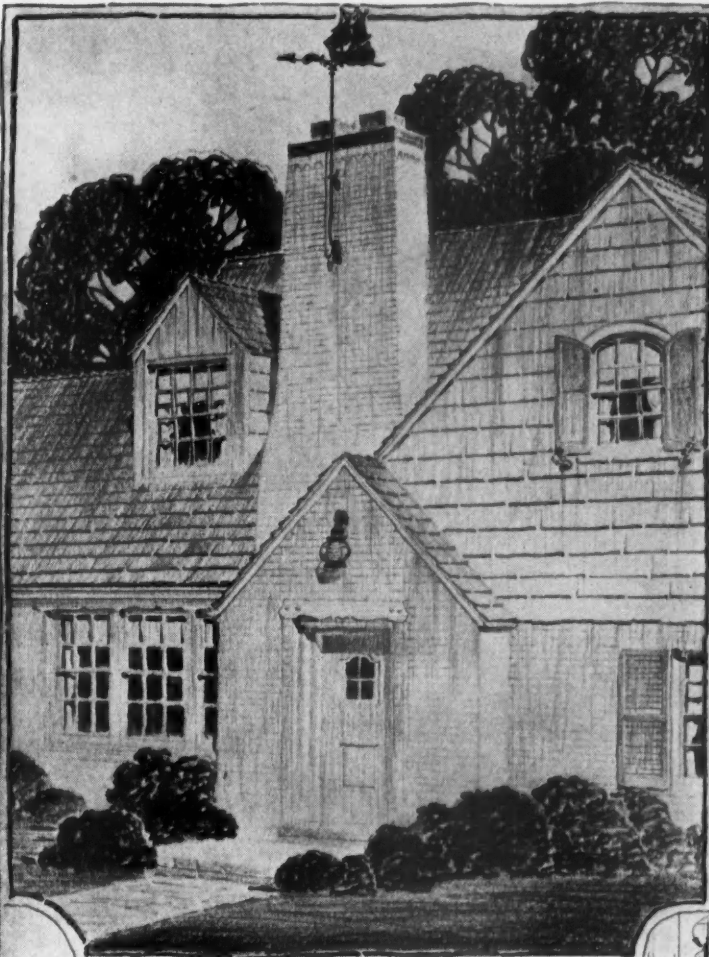


• ELEVATION •
Scale, $\frac{3}{8}$ " = 1 foot

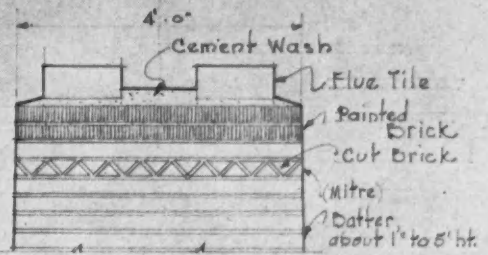


• SECTION •
Scale, $\frac{1}{2}$ " = 1 foot

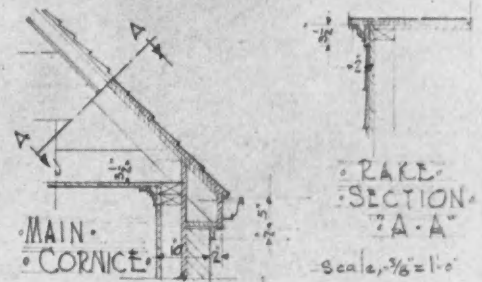
• DETAILS OF FRONT ENTRANCE •
J.J. Falkenberg
Architectural Engineer



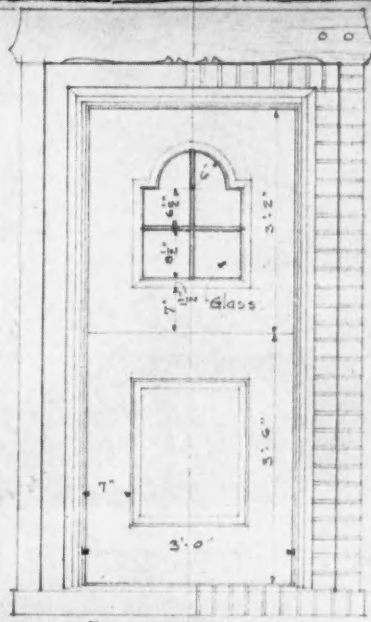
EARLY AMERICAN SHOWING ENGLISH ORIGIN



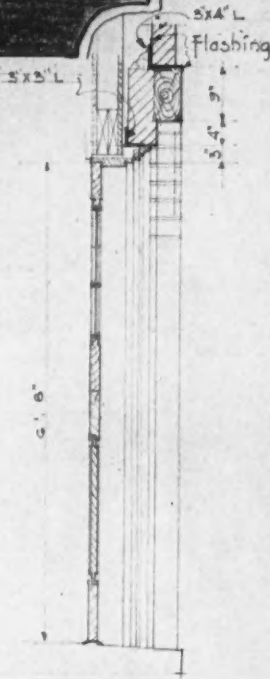
ELEVATION OF CHIMNEY TOP
Scale 3/8" = 1'-0"



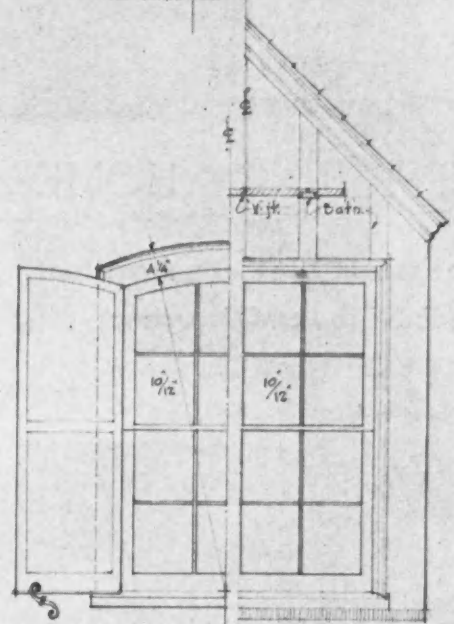
RAKE SECTION 'A-A'
Scale 3/8" = 1'-0"



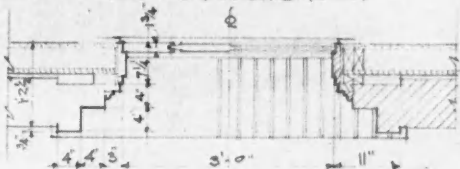
ELEVATION



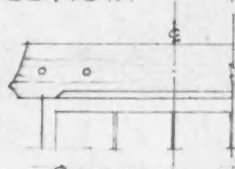
SECTION



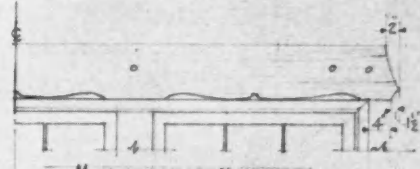
1/2 ELEVATION GABLE WINDOW
1/2 ELEVATION DORMER
Scale 3/8" = 1'-0"



PLAN DETAILS OF ENTRANCE
Scale 3/8" = 1'-0"



SINGLE ELEVATION



MULLION ELEVATION

FIRST STORY WINDOW HEADS
Scale 3/8" = 1'-0"

J. J. Falkenberg, Architectural Engineer.

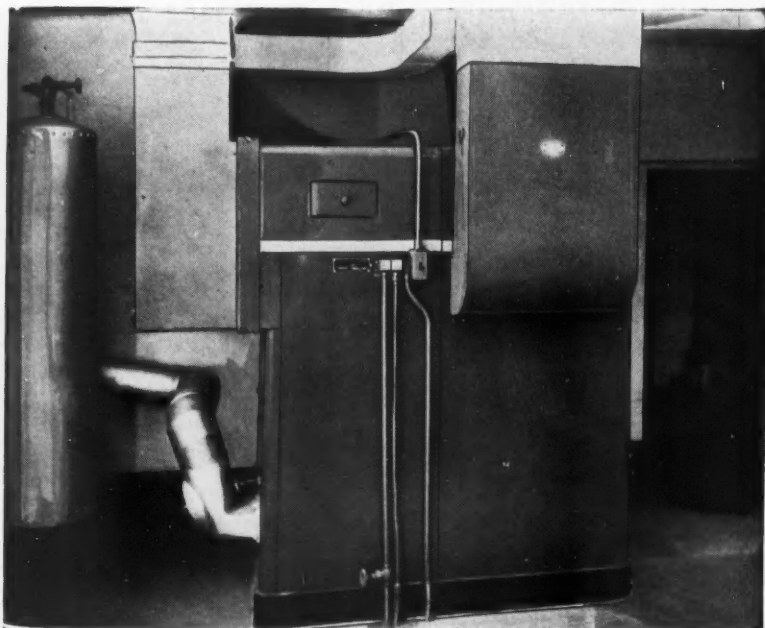


CONCRETE
"EFFICIENCY HOME"

Carlton S. Crothers, Architect

M. R. Gibbons, Contractor

Both of Cleveland, Ohio



AN ALL-ELECTRIC, basementless, flat-roof concrete house, the first of its type seen in northern Ohio, has been completed in Cleveland.

This home is built of pre-cast Haydite concrete blocks and is stuccoed. Carlton S. Crothers is the architect and M. R. Gibbons the builder. It is in the \$14,000 class. According to present plans the entire subdivision will be devoted to this type of house.

The house was designed to provide the utmost in compact efficiency. The rooms are exceptionally large for the cubic footage involved. Instead of the usual 65 percent of usable space, 85 percent of the space is utilized.

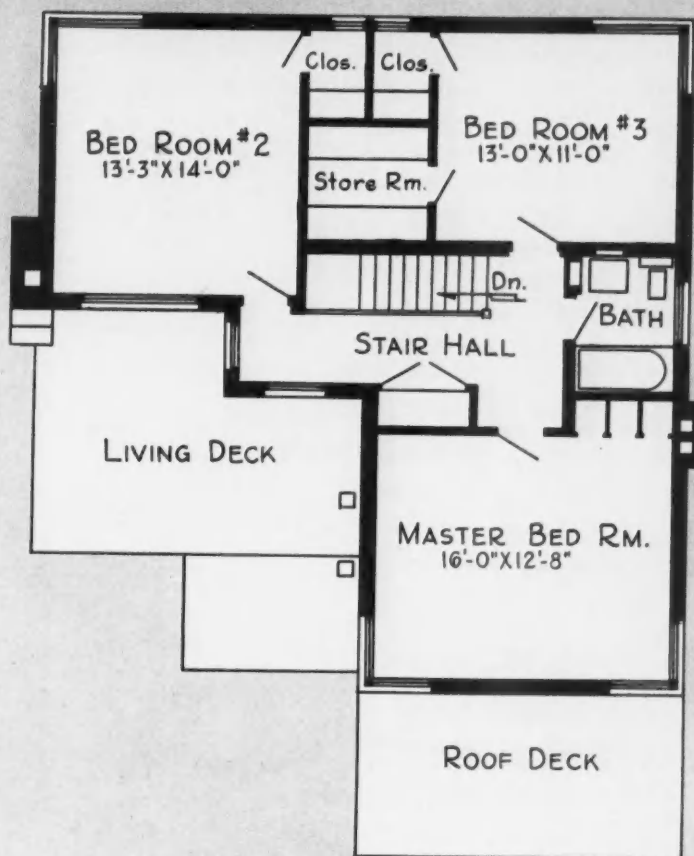
There are seven rooms, including a large living room, dining room and alcove, complete electric kitchen, laundry and the utility room on the first floor.

The second floor provides three bedrooms with separate bath for the master chamber and connecting bath for the other two. A sun deck is accessible from the second floor.

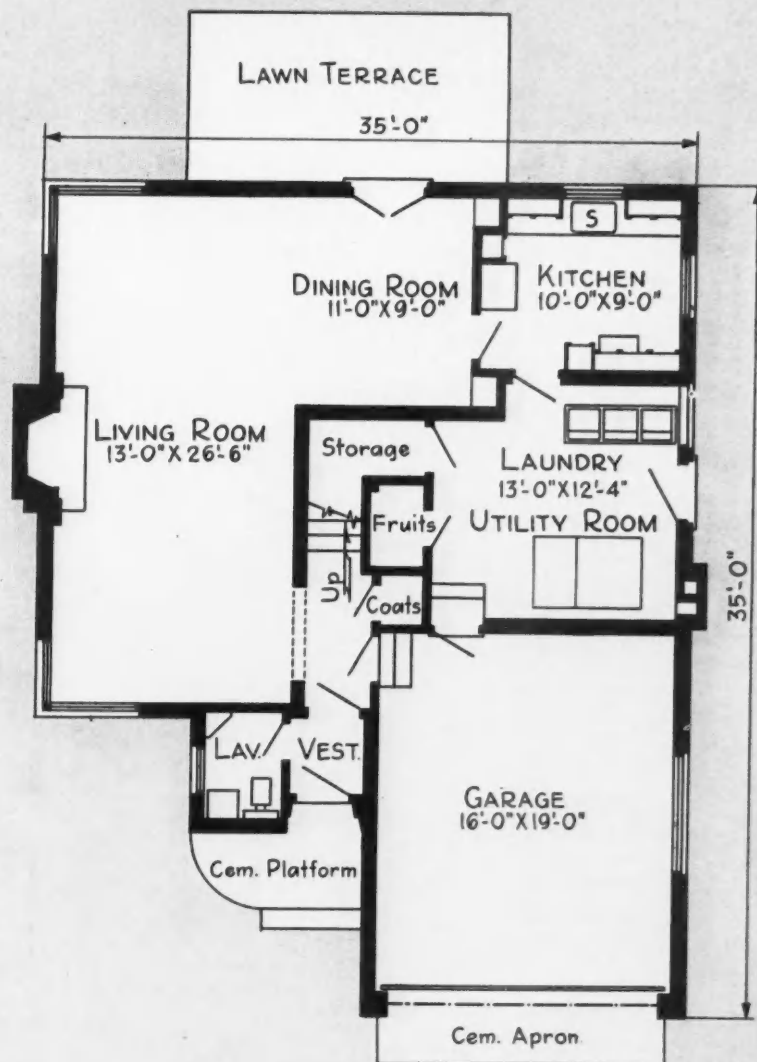
Construction features are indirect lighting, all-metal doors, two-piece all-steel stairway, built-in wardrobes and center-drain roof.

The heating system is automatic and centrally controlled, using a G-E oil burner, and providing winter air conditioning. Insulation is by aluminum foil in the walls and rock wool in the roof.

The complete G-E Kitchen contains electric refrigerator, range, dishwasher, garbage disposal unit, fan for ventilation, and electric clock.



SECOND FLOOR PLAN



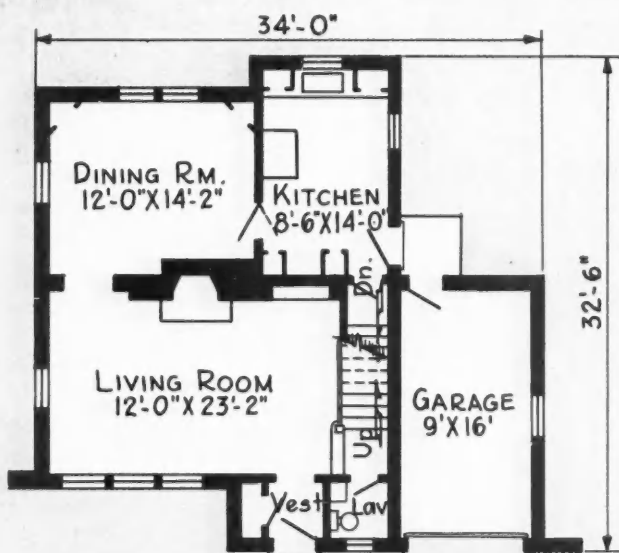
FIRST FLOOR PLAN



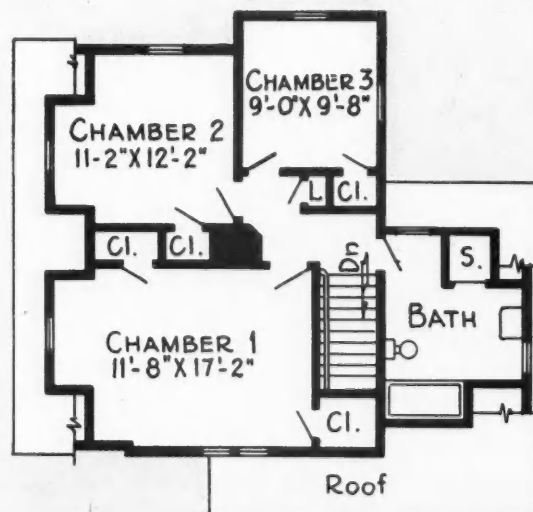
EARLY AMERICAN ATTACHED GARAGE

Cost Key is 1.583-133-704-31-21-15

MACK KANNER & Sons, Inc., operative builders of Freeport, Long Island, N. Y., opened the Colonial above and the French Norman house at right last year as model homes. They are popular, moderate-priced houses, featuring such products as Arco Petro oil burners; Johns Manville bat insulation; Kohler bathroom fixtures; Bangor slate roofs guaranteed for 40 years. Good sized bath arranged in space over garage.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

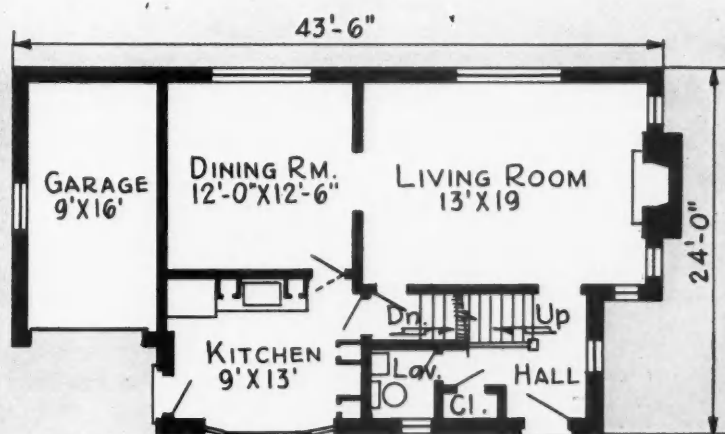


47

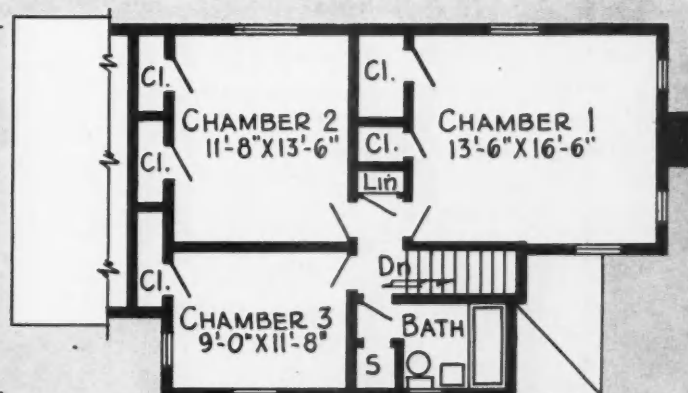
FRENCH NORMAN type above has lots of architectural appeal, and the builders have made the most of the floor space. They feature ample closets, attached garage, bay window in kitchen, Tudor doors. Other features of the Kanner houses include copper leaders and gutters, copper flashing, steel girders, electric ventilating fan, shower door of chromium plate and glass, decorative hardware and electric fixtures.

FRENCH NORMAN AT MODERATE COST

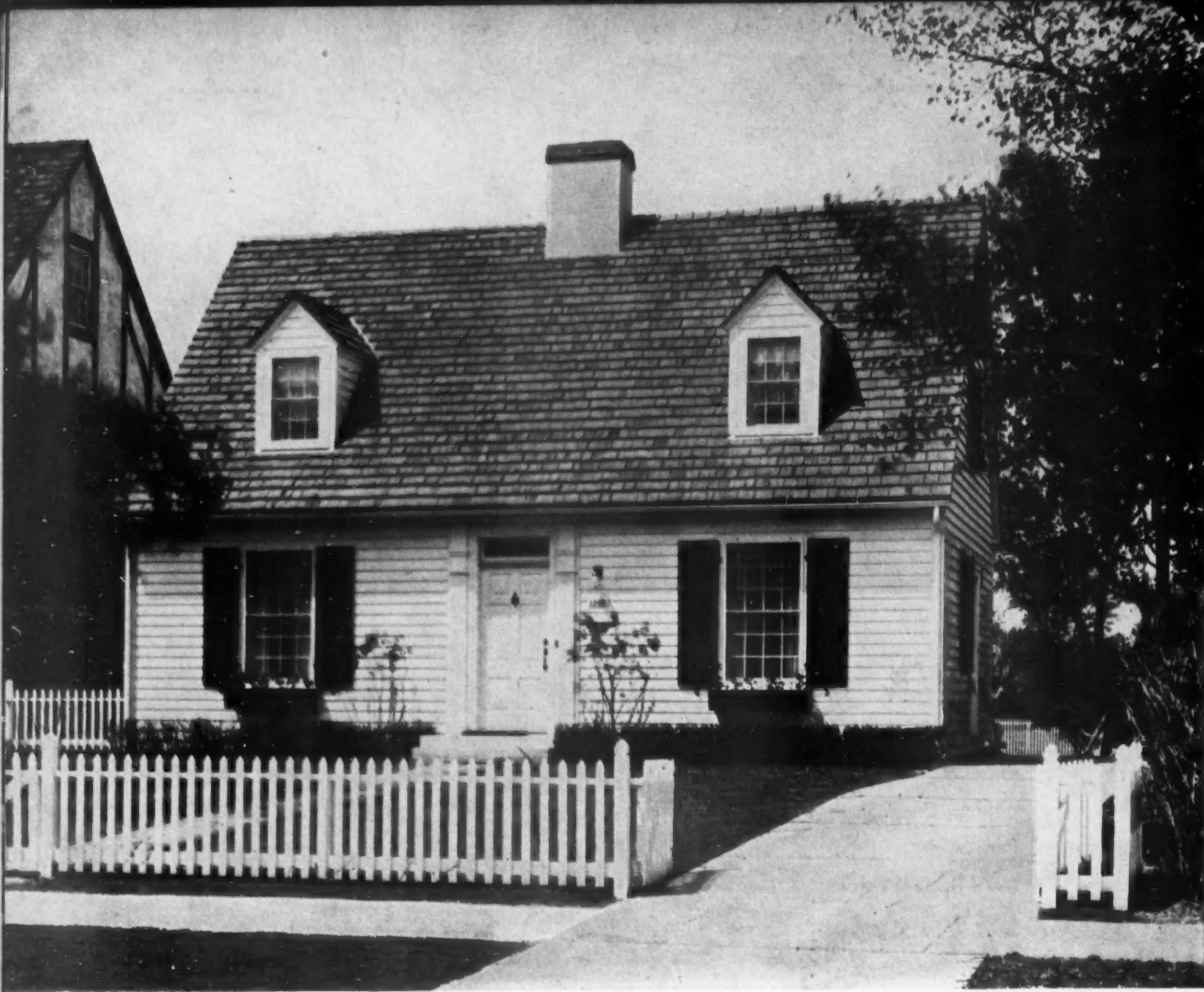
Cost Key is 1.623-135-776-34-22-16



FIRST FLOOR PLAN



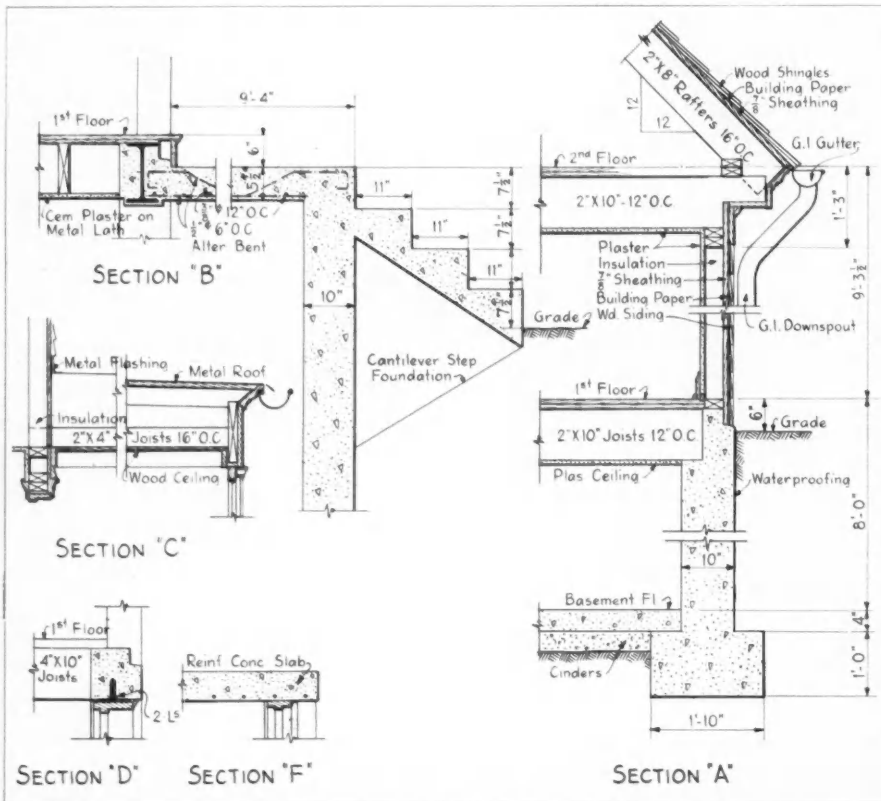
SECOND FLOOR PLAN



IDEAL CAPE COD DESIGN

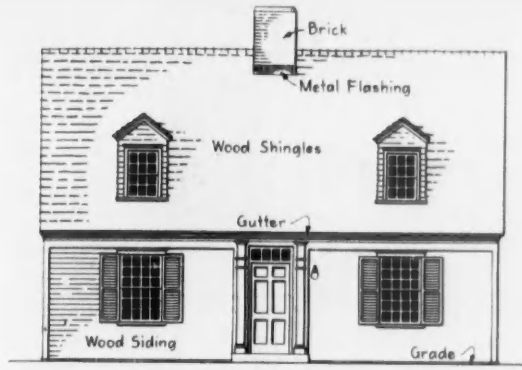
Cost Key is 1.751-124-936-39-19-17

R. P. Travelletti, Chicago, Architect
Charles Waterton, Builder and Owner

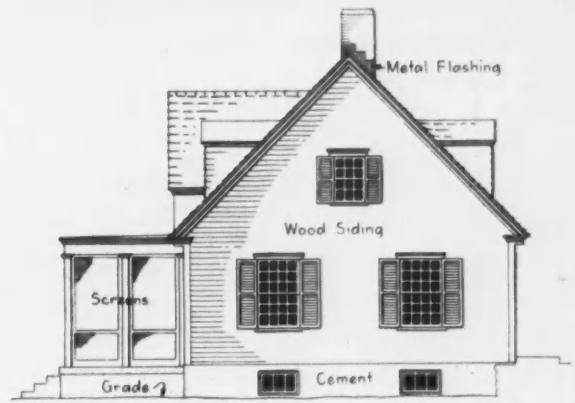


THE AUGUST House of the Month and Front Cover Design, built in Winnetka, Ill., represents ideal planning in the traditional and popular Cape Cod style by Architect Travelletti. Fine proportions and balance found in all elevations are well related to the efficient interior layout. A good sized living room, dining room and screened porch are grouped for a pleasant outlook to rear garden. First floor bedroom and bath are separated from other functions and serve as guest or maid's room.

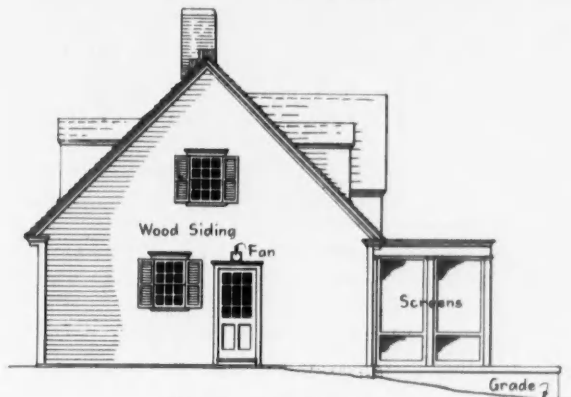
Lumber is featured in the construction—the hand hewn shakes on the roof and the clapboard siding are red cedar, knotty pine is used on fireplace wall in living room, floors are oak. Sisalkraft and glass wool in exterior walls, Standard plumbing Juneair winter conditioning, Vitrolite tile bath, 3-coat plaster on USG Rocklath for walls and on metal lath for ceilings are other features. Some of the fine interior detailing in this home is shown on page 50.



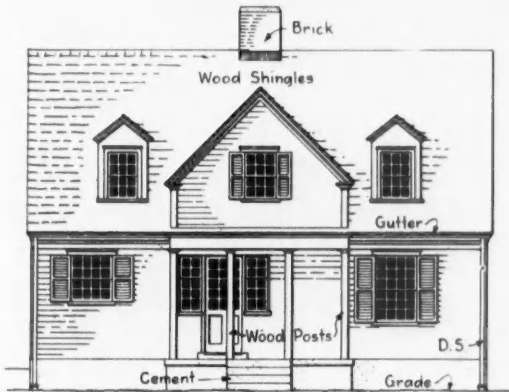
SOUTH ELEVATION



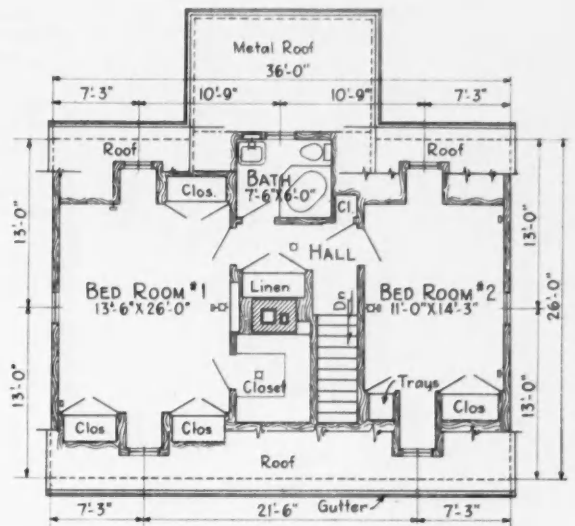
WEST ELEVATION



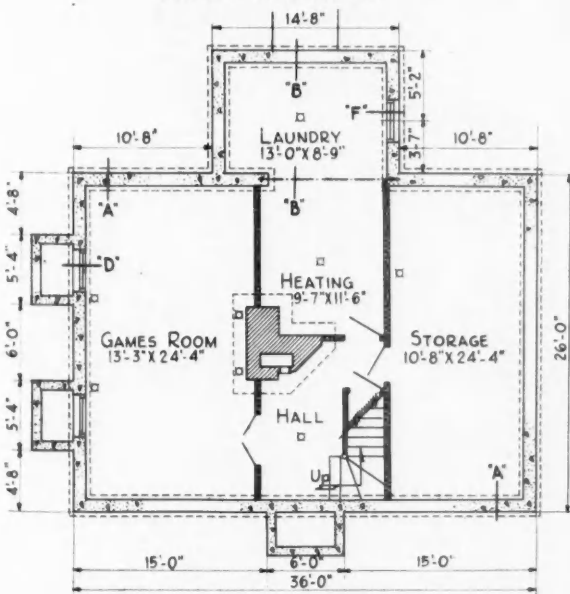
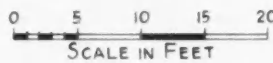
EAST ELEVATION



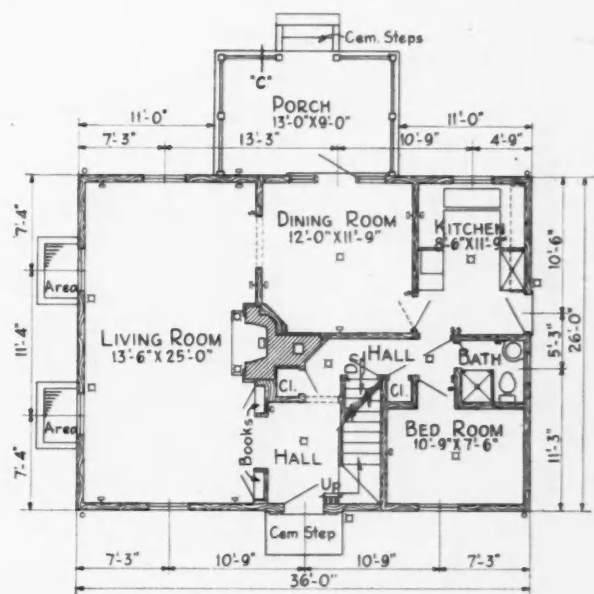
NORTH ELEVATION



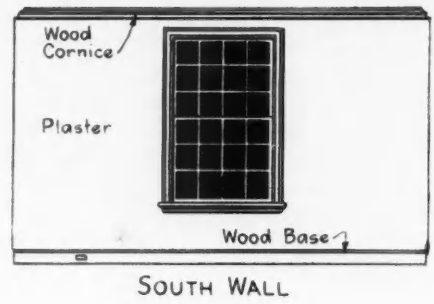
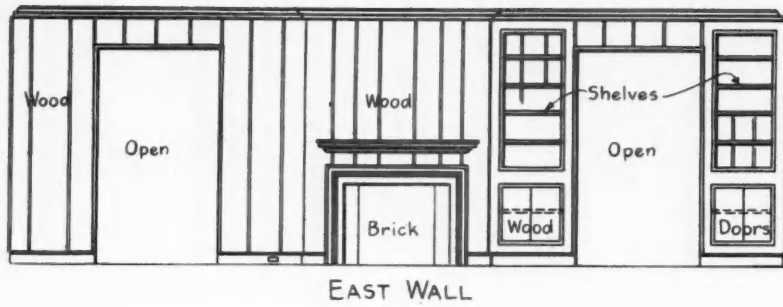
SECOND FLOOR PLAN



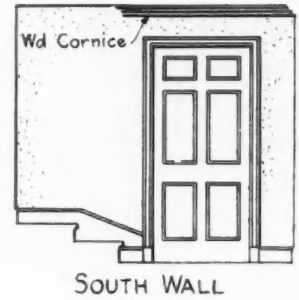
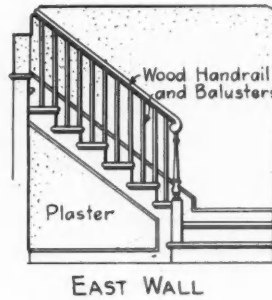
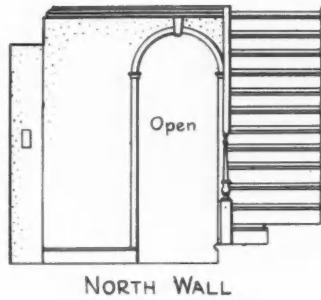
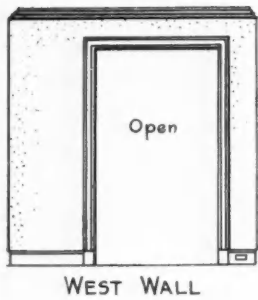
BASEMENT PLAN



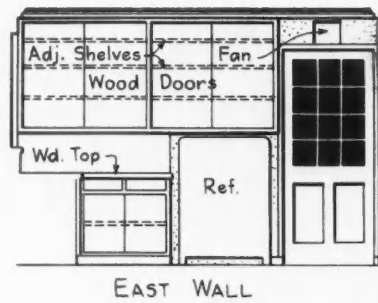
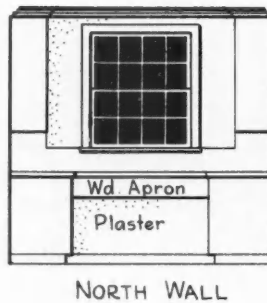
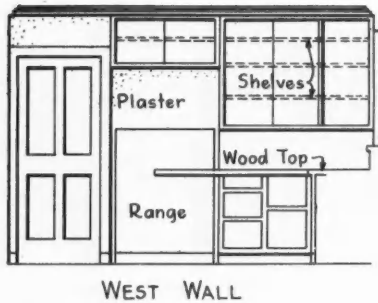
FIRST FLOOR PLAN



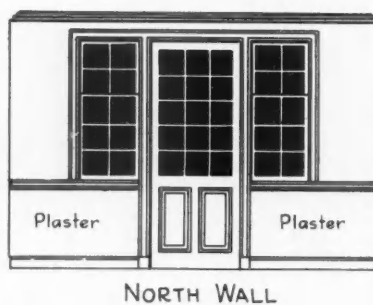
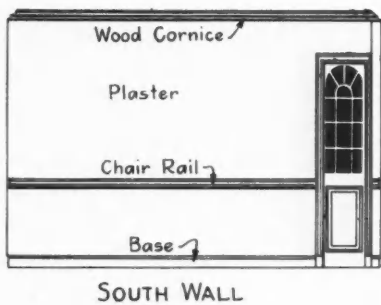
LIVING ROOM



ENTRANCE HALL

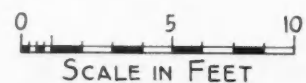


KITCHEN



DINING ROOM

INTERIOR DETAILS



SCALE IN FEET

Forest Service Offers 2-Story Plywood Panel House*

THE Forest Products Laboratory, as a part of its research program on modern structures and wood fabrication, designed and built during 1935 an experimental prefabricated house (see *American Builder*, pp. 34-35, May, 1935), in which plywood was the principal material of construction. This house is of a one-story type with a flat roof and has casement windows throughout. Like most prefabricated structures, the house has as its basic structural unit a panel. Each panel consists of two plywood faces glued to either side of an inner structural framework to form what is virtually a box girder. With this type of construction the load is immediately distributed through the framework to the plywood faces so that the joists or studs actually support only about one-quarter of the bending load. This action is possible because of the complete and continuous rigid joint formed by the glue between the plywood faces and the framework.

This panel system of prefabricated construction can easily be altered to permit many types of construction. As an illustration of its flexibility of design a new wall section including double-hung windows was recently constructed and is described here for the first time. Details of design whereby panel construction can be used for two stories and pitched roofs are also shown.

Figures 1 and 2 are exterior and interior views of

*By R. F. Luxford, Engineer, and August Smerda, Jr., Junior Forest Products Technologist, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture, Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

the new wall section. The overall thickness of the wall panel is $2\frac{3}{4}$ inches. The window sash are only one inch in thickness whereas the minimum thickness in usual commercial windows is $1\frac{3}{8}$ inches. For relatively small windows, however, they should prove satisfactory with reasonable care in manufacture. Details of these windows are shown in figure 4. The weight pockets were eliminated by the use of one of the new types of window balances.

Each of the vertical mullions that form part of a door or window frame has two parallel grooves into which the edges of the plywood panels are fitted as shown in the sketch of the side jamb (fig. 4). The part marked "B" is $2\frac{7}{8}$ by $3\frac{1}{8}$ inches in cross-section. This part is continuous the full length of the wall panel, and carries the load from the floor above to the foundation (fig. 1). The parts marked "A"

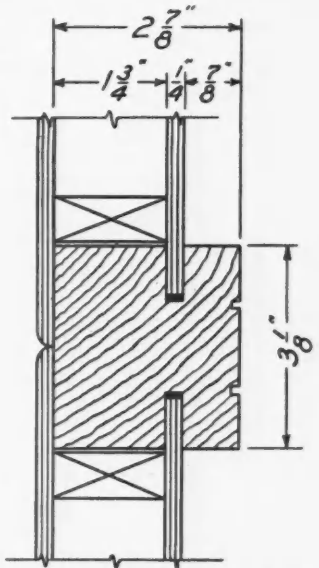


FIG. 3—Connection of two wall panels and mullion.



FIG. 1—Exterior view of prefabricated wall section.

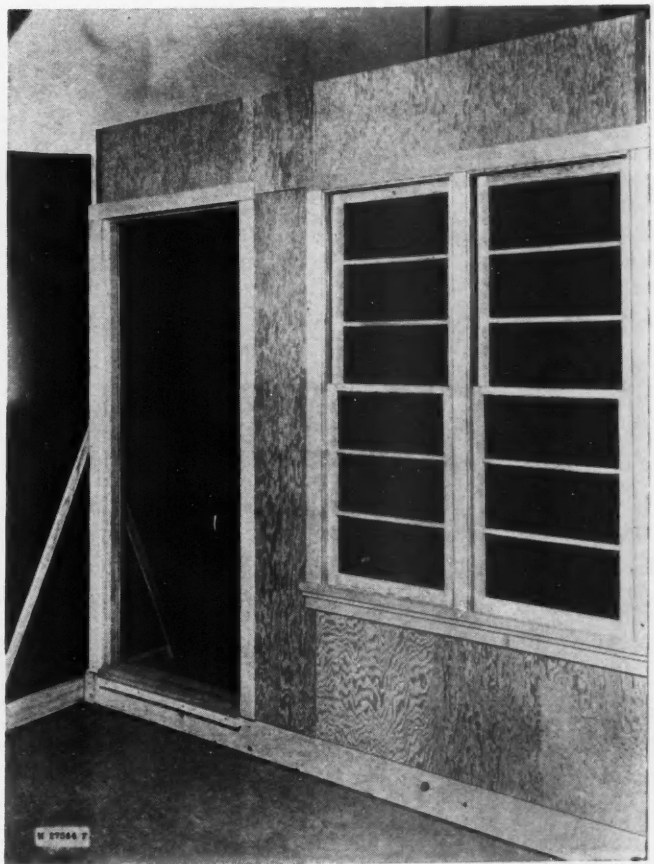


FIG. 2—Interior view of prefabricated wall section.

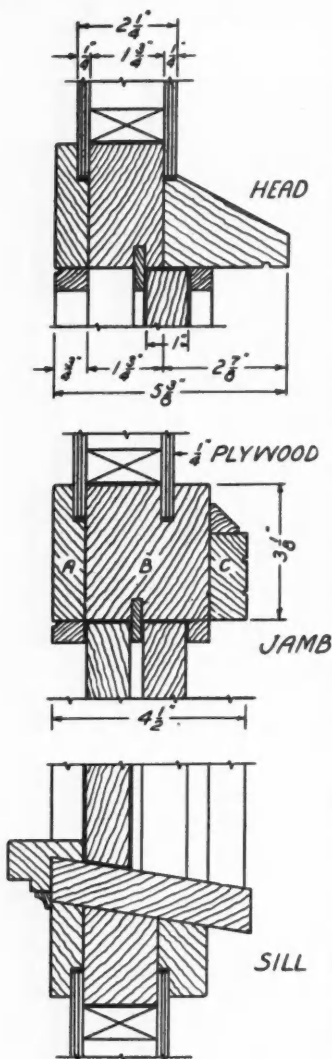


FIG. 4—Window details.

and "C" in figure 4 are necessary to give the required thickness of frame to accommodate double-hung windows and storm sash or screen. The center parting strip is made of hardwood rather than of the usual soft pine and thereby affords the use of a thinner piece which reduces the required overall thickness of the window frame. The door frame has the same overall thickness as the window frame and is sufficient to accommodate a 1 3/4-inch inside door. There is also space for a 1-inch screen door provided the inside door is equipped with a special short knob.

The mullion at the junction of the two panels extends from the unexposed face of the interior plywood to 7/8 inch beyond the outer face as shown in figure 3. Consequently no part of the mullion extends into the room and hence the edges of the plywood sheets are adjacent to each other. This arrangement eliminates the batten-strip effect and when the edges of the panels are rounded the attractiveness of the rooms is increased.

Since the mullions do not project into the room it was necessary to extend them 7/8-inch beyond the outer surface of the building in order to obtain mullions of sufficient size to support the floor loads. This gives the appearance of more structural strength than when the mullions extend partly beyond both the inner and outer wall surfaces with a less extension from the outer surface.

By filling the wall opening, which is 1 3/4 inches wide, with a loose insulating material a wall very resistant to the transfer of heat or cold is obtained. In fact, it is somewhat better than the conventional type of construction consisting of wood siding, wood sheathing, paper, lath and plaster, plus 1/2-inch of blanket insulation. A house constructed of plywood panels is also more resistant to air infiltration than the conventional construction because there are no cracks through which the wind can pass.

Most prefabricated houses are modernistic in design with the usual flat roofs. Houses constructed with prefabricated panels lend themselves more readily to modern design than do houses with pitched roofs and they are also more economical. However, the inclusion of both flat and pitched roofs in the field of prefabricated construction makes possible a wider range in architectural effects. A pitched roof with the resulting attic also provides storage space which is considerably lacking in a flat-roof house and particularly so when the house is without a basement.

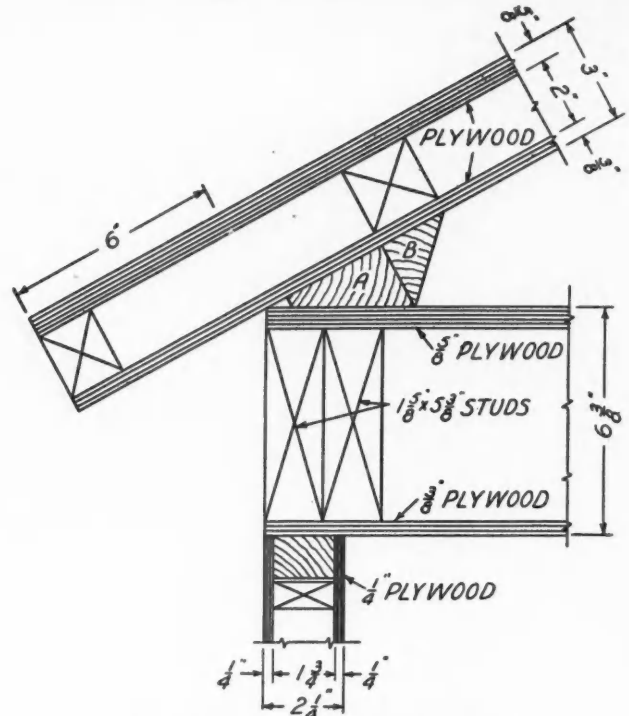


FIG. 5—Joint connections for pitched roof.

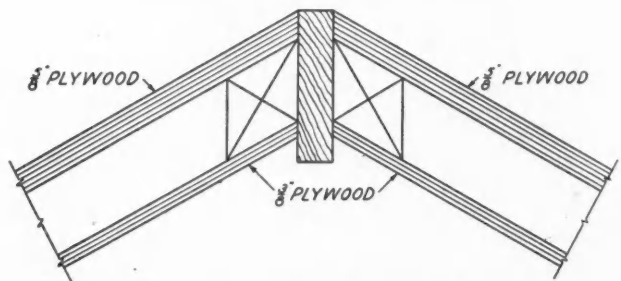


FIG. 6—Connections of roof panels at ridgeboard.

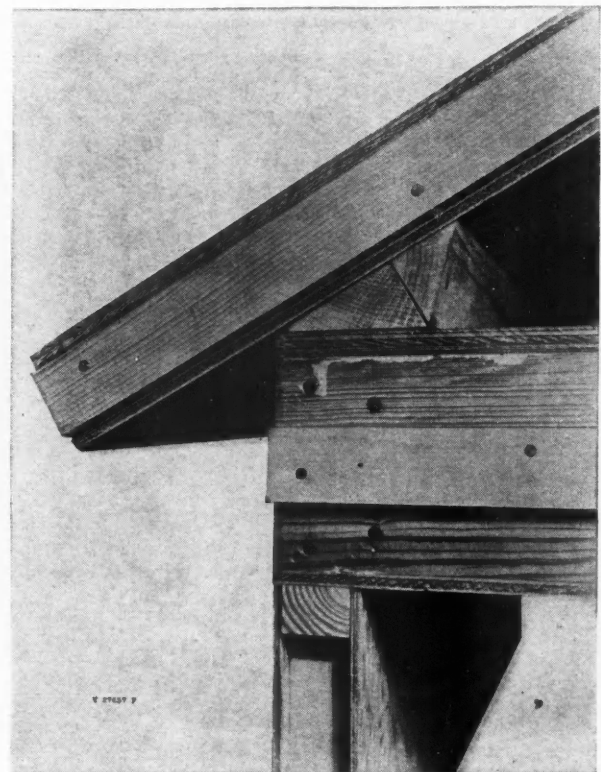


FIG. 7—Connection between roof panel and attic floor panel.

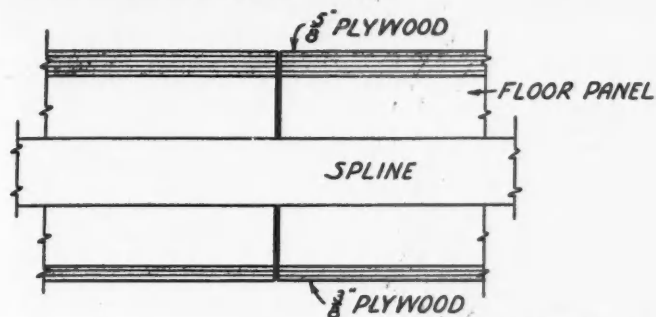


FIG. 8—Tie between two floor panels by means of a spline securely nailed to resist horizontal thrust.

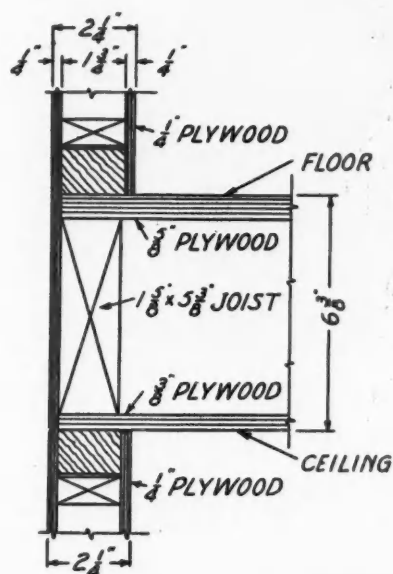


FIG. 9—Joint detail between first and second floors.

Houses with pitched roofs can be easily constructed with the type of panels employed by the Forest Products Laboratory. Figures 5 and 7 illustrate a suggested joint between the roof and attic floor panels. This joint consists essentially of a triangular strip "A" approximately 2 by 3 by 3½ inches in cross sections securely nailed to the top story ceiling panel, and a triangular strip "B" approximately 2 by 2 by 2¾ inches in cross section securely nailed to the roof panel. After the roof panels are assembled strip "B" bearing against strip "A" keeps the roof panels firmly in place. When the erection is completed strip "B" is nailed to strip "A" to prevent the roof from being lifted by heavy winds. The connection at the roof board is of the conventional type as illustrated in figure 6.

The thrust exerted by the roof loads must be resisted through the floor panels. Since the panels are not continuous from roof line to roof line but extend only from one roof line to a bearing partition, it is necessary to have a tie between the panels. Splines are used between all panels to cause them to deflect together under load. Through adequate nailing these same splines are utilized to obtain the proper tie in the direction of the thrust. The placement of the splines is shown in figure 8. The splines extend ½-inch into the floor panel joists and are 1 7/8 inches high.

In prefabricated houses there is a decided tendency toward one-story homes. It is, however, both practical and feasible to erect two-story houses with prefabricated panels as constructed by the Forest Products Laboratory. A connection between the first and second stories at the outside wall is shown in figure 9. This figure includes portions of the wall of the first floor, the floor panel between the first and second stories and a portion of the wall of the second floor. The individual parts of a built-up section are better shown in figure 10

in which the several parts are slightly separated.

Essentially the construction resembles the platform type of conventional frame construction in that the second-story panel rests upon the first-story wall panels and the second-story wall panels are placed directly on top of the floor panels. The wall panels are grooved by extending the plywood faces beyond the edges of the framework 1¼ inches forming a groove 1¼ by 1¾ inches. A strip which will exactly fit this groove is nailed to the top and the bottom of the floor panel along its outer end, and the wall panels fitted over these strips as shown in figure 10. The second-story wall panels differ from the first-story panels in that the outside plywood face is extended sufficiently beyond the framework of the wall panel to cover the exposed end of the floor panel. After erection this extended portion of the outer plywood face is nailed to the floor panel to tie securely the two units together. The tie between the first-story wall panel and the floor panel is accomplished by nailing together the plywood faces and the strip fitted into the groove of the wall panel.

The joint between the outside plywood of the first and second stories is cut at an angle to shed the water.

Sample Demonstrated at Exposition

Adaptability of the Forest Products Laboratory's prefabricated wood panel system to the erection of houses of more than one story and of conventional architectural design was demonstrated by the exhibit of a one-fourth section of a house so constructed at the Wisconsin Centennial Industrial Exposition, June 27 to July 5, at Madison.

The house section was assembled from the prefabricated units by four carpenters within two working days.

The sectional house display, with construction details, interior finish, and suitable furnishings clearly shown, proved a strong center of interest and inquiry to more than 20,000 exposition visitors.



FIG. 10—Portions of first story wall panel, floor panel and second story wall panel which are slightly separated to show how parts fit together.



LARGE LOTS, beautiful trees and country atmosphere provide a setting for fine small homes.

"White Collar" Country Homes Tap

WALLACE B. GOODWIN, real estate man and builder of Hartford, Conn., is proving that city people will drive beyond the city limits to get attractive moderate-cost homes in real country surroundings.

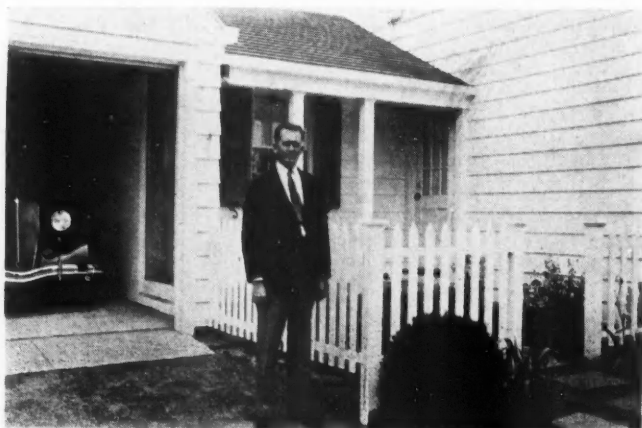
Goodwin's development is called "Fernbel" and is located four miles from the center of Hartford. A model home was put up early this year and immediately sold. Two more homes were built and sold, and now four more are under construction, one of which will be used as an exhibit house by The Hartford Gas Company.

Wallace Goodwin is a tall friendly man who understands what people in his community want in a home development. He decided that he would "do something different" at Fernbel. It is a small project, with space for only 17 houses, but the street is curved in an interesting fashion among the trees. Houses are not placed in any standardized form—they are purposely staggered and grouped to give a definite character. The country atmosphere is studiously maintained. There are no sidewalks. Streets are of inexpensive asphaltic type. The lots are large; the average size being 70 by 200 feet. A trout brook that meanders through the property is being carefully protected.

The land was originally purchased at "depression values," with the thought of putting up low-cost houses for factory workers. But when a more thorough study of the buying power of Hartford was made, it became apparent that "white collar" class people were the ones most interested in country homes. That is, they were interested if they could get the right kind of a home in the right kind of a country environment. In creating Fernbel a highly artistic standard has been set up, but the prices have been kept in the \$7,000 to \$8,000 class. The people who are buying these houses are office workers and executives, professional men and clerical employees of the Hartford insurance companies. Many of these are peo-



FLOOR PLAN of Fernbel Colonial at right above.



WALLACE B. GOODWIN on the job. The attached garage, "breezeway" and picket fence make an attractive feature of his model home.



THE SMALL COLONIALS have great appeal in the Hartford area.

Big New Market

By JOSEPH B. MASON

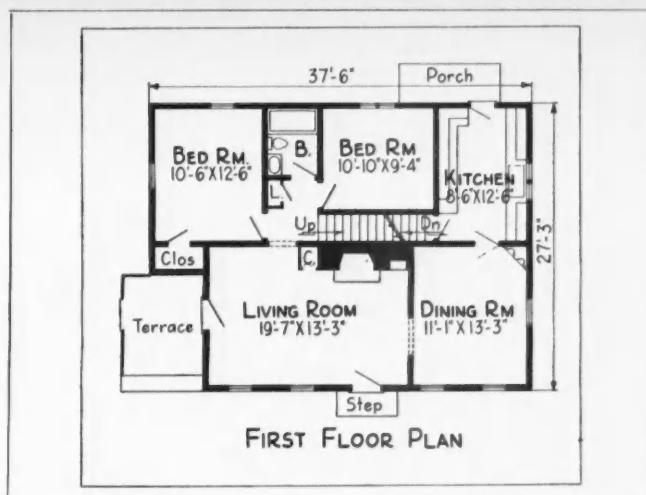
Hartford, Conn., Builder "Does Something Different" in Small Colonial Homes Four Miles from Town. Large Lots in Country Appeal to Active Buying Group

ple who were formerly the type that purchased \$12,000 to \$15,000 houses but are now more interested in a lower priced house out beyond the city limits, where upkeep costs and taxes are low and where living is on a simple, inexpensive scale.

The architecture of the houses was planned to appeal to people of this class. The houses are of exceptionally good Colonial style, with many appealing features. The three designs illustrated with this story were done by Walter P. Crabtree, Jr., a young Hartford architect who has distinguished himself in small home work.

A number of features in the houses are particularly outstanding. Vertical molded pine boarding, painted oyster white, was used in several places including the living room mantel walls. In some of the bedrooms, instead of a closet that consumes much space, a good-looking wardrobe, wall high, 18 inches deep and 5 feet long, was built of this same material with a simple flush door hung on Colonial strap hinges. The actual closet storage space is the same as for a large closet, but the floor area consumed is much less. In addition the vertical pine gives an attractive touch to the room.

Kitchen cabinets in the Goodwin houses are built on



FLOOR PLAN of Cape Cod Colonial at left above.

the job and a very modern effect is achieved by using three-quarter inch flush plywood doors. The work areas are covered with colorful linoleum, and the entire kitchen is done in pleasing shades of cream or white with colorful contrasts in red or blue.

Another cost saving feature that also gives much charm is the use of colorful linoleum on the bathroom floors and walls instead of tile. Inexpensive recessed lighting is used.

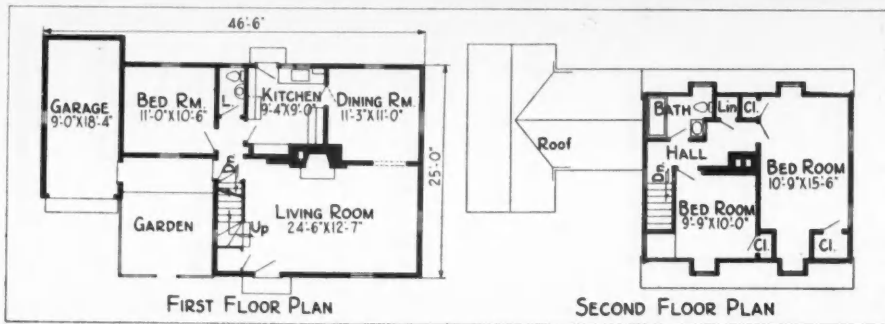
Architect Crabtree has shown his ingenuity by finding space for little built-in cupboards, bookcases and storage cabinets that appeal to the housewife. An attractive niche for the telephone, with the interior painted dark blue, is provided in the model home in the center hall.

An effort has been made throughout to keep the price of the houses down, but much effort has been expended to make them livable and attractive. The garage in most cases is attached to the house by what Goodwin calls a "breezeway"—usually an open porch with a flagstone floor. In several of the houses there are flagstone terraces enclosed with a picket fence in a manner that is most appealing. Fernbel Model Home is shown on page 56.



"White Collar" Model Home

THIS little Colonial was opened by Wallace B. Goodwin in Fernbel, his Hartford, Conn., country home development. It was designed by Architect Walter P. Crabtree, Jr., and has many attractive features, including the "breezeway" connecting house and garage. The development is located four miles from the center of town, where inexpensive land permits use of large lots.



FLOOR plans of the Fernbel model home show a very compact arrangement. Main part of house is only 25 ft. 6 by 25.



LIVING room of the Fernbel model home is unusually attractive with its Colonial stairs and mantel and built-in cupboard. Wall at right is done in vertical molded pine sheathing, painted oyster white. Lighting fixture is set into ceiling.

THE WORKSHOP on the first floor of the Yale Apartments was the center of operations during modernization of this building. Power equipment for salvaging seen at the right; note the floor sanding machine mounted upside down used for resurfacing trim.



POWER SHOP EQUIPMENT SPEEDS UP APARTMENT MODERNIZING

THE ORIGINAL solid bronze hardware was usable after years of service. However, it was first necessary to remove the many layers of paint, repolish it and finally spray with lacquer. W. G. Michel is seen at the right doing this latter operation.



THE IMPORTANCE of good planning—both as to the completed project and the methods used to do the job—are emphasized in a recent apartment modernizing program now being completed to rehabilitate the Yale Apartments in Chicago. William G. Michel and Raymond Sovet, two enterprising young contractors with a background of practical experience and talent, are in charge of the work. The former has been chiefly concerned with the designing and replanning of the interiors; the latter's specialty is with the heating and re-equipment phases of the work; together they have devised numerous time- and money-saving methods.

First floor space which had formerly been used as a club dining room was changed into a workshop handily located in the building. Here power equipment was set up and subsequently this spot became the center of operations. (See illustrations above.) Most of the original

wood trim in the building was prepared here for re-use. This involved the use of a planing and sanding machine, inverted on a block base, to remove paint and blemishes from the trim; by this process all trim appeared like new. The doors were of quarter sawed white oak and to completely refinish these was thought to be a good investment. A steel tank large enough to contain eight or ten doors at a time and partly filled with paint remover was used to strip the doors of many coats of paint, varnish and dirt. After this "strip bath" they were washed, sanded, stained, then varnished. These doors look new and represent a considerable saving. The windows were refitted and equipped with Chamberlain metal weather stripping, the sash ropes being replaced by chain.

The original bronze hardware was used on the job. This presented at first a real problem; finally a process of rejuvenation was developed where the hardware was

MODERNIZED BUILDINGS ARE MORE CHEERFUL, LIVABLE, SALABLE



ABOVE: Top view shows typical kitchen which before remodeling was large and badly outmoded. The completely modernized kitchens have steel cabinets over the sinks and built into the canvased walls, latest mechanical equipment and linoleum covered floors.

first soaked in a strong lye solution to remove the forty odd years' crust of paint and dirt. Following this, all hardware was polished on a motor driven buffer to its original luster, then sprayed with clear lacquer to preserve the finish. At times it was necessary to add to the original hardware such items as door stops, hinges, knobs, etc.

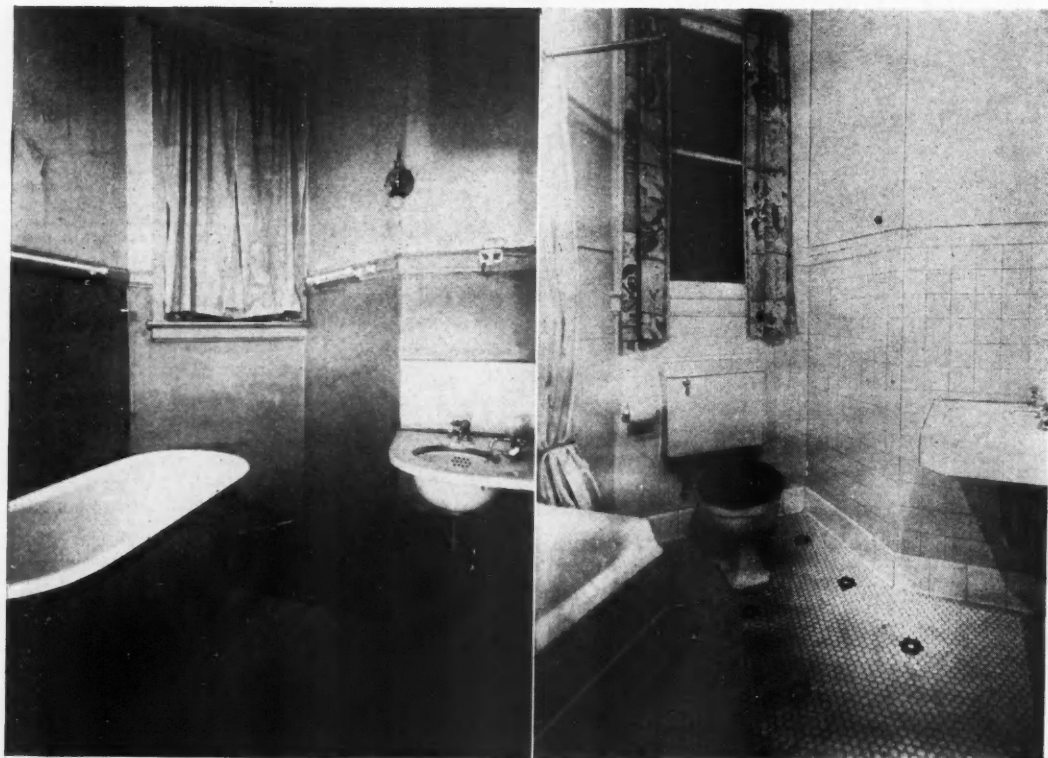
That gives some of the sidelights on the methods involved in this modernization; how the job was planned after considering basic features, the various steps in the process and the financial outlook for the property are told in this next portion of the story.

Located on the South side of the city, the building was erected in 1893, the year of the Columbian Exposition. The community consists of fifty per cent residences which, for the most part, are well maintained, twenty-five per cent apartment dwellings varying from twenty to forty years of age, which have been kept up to modern standards, and the remaining twenty-five per cent of modern structures built in the last ten years. Good transportation and shopping facilities are advantages of the location.

The building occupies an area 90 by 120 feet on a 100 by 140 foot lot. There is an enclosed court space in the center of the building 24 by 75 feet. This is completely housed over on the sixth floor with a glass skylight. Two elevators are in service, one for passengers, the other for freight.

The structure is typical of many buildings which, by necessity, were taken over by the mortgagee to face an uncertain future. Until recently little had been done to keep the apartments apace with modern building requirements.

Having decided that it was well worth the additional investment to rehabilitate the property, the job was turned over to Sovet and Michel who collaborated with the owners, the American Board of Commissioners for Foreign Missions, in obtaining the most efficient equipment and type of apartment best fitted for this particular neighborhood. Due to the change in living customs over a period of 43 years, the original floor plan



LEFT: "Before" and "After" bathroom scenes present a marked contrast in the standards of today as compared to those of 43 years ago. Changes included tile floors and bases, new fixtures, steel medicine cabinets, and out-of-the-way recessed radiators.

presented quite a problem. At this time there were 42 apartments, including three, four, five, seven and nine rooms. It was decided to divide the seven- and nine-room apartments, thus increasing the total from 42 to 54 units.

The exterior of the building being of substantial stone construction was not altered. The transformation is first seen in the lobby where the Mid-Victorian design of iron scroll-work on doors and elevators along with similar decoration has been replaced by a complete job of restyling in a modern marine design. The center of interest is the elevator doors which represent a seascape and are decorated with heavy sheet aluminum gulls on a radiating pattern in wood veneer. Recessed aquariums with goldfish swimming about in leisurely fashion and ship's lanterns placed at points of interest aid in creating an unusual atmosphere.

The engine room was equipped with a modern heating plant consisting of a type C Kewanee boiler, McAlear water control, Modern Stoker, external type hot water heater and an especially designed conveyor to load the oversize hopper on the stoker. Steam return and roof tank supply pumps were rebuilt and relocated. There formerly being no sanitary system of refuse disposal an incinerator was installed which handles all refuse in a sanitary and inconspicuous manner. These improvements effect, during the heating season, a saving of approximately \$100 per month in fuel alone.

Bathrooms were replastered and equipped with white tile floor and base, steel medicine cabinets, built-in tubs, lavatories and reverse trap closets. Recessed radiators with a steel grille in front aid in giving a maximum amount of floor space. Installation of the tile base was given particular care to assure the solid adherence of same through many years of service. Steam supply to bathroom radiators was affected by the installation of new risers concealed in the walls. Complete installation of new waste, soil and water supply pipes to replace all the old plumbing was made. Individual valves to control the water supply for each apartment were installed.

(Continued to page 100)



ABOVE: The somber old living rooms have given way to light, open areas. Long, dark hallways were eliminated to add size to other rooms; seven and nine room units were divided into two apartments; closet space was increased where storage was inadequate.



RIGHT: The new elevator doors in seascape design done in veneer and aluminum are the center of interest in the modernized lobby. Walls covered in wood block patterns, aquariums in the walls and ship's lanterns add to the marine effect replacing iron grilles.

Open Web Steel Joists for Floors and Roofs

By **JAMES H. SCHAD**

Engineer, Steel Joist Institute, Chicago

THE earliest use of what might be designated as steel joists was in 1855, in the building for the State of New York Bank in New York City. In 1908, quantity production of pressed steel joists was started on a commercial basis. These joists consisted of 16 gauge steel sheets pressed into the shape of channels and welded back to back, forming an I beam section. Open web steel joists were first used in 1923. They were made in the form of a Warren truss in which the top and bottom chords consisted of two round bars, the web being formed of a continuous bent bar. The joists were assembled by means of electric arc welding. The bearing ends were made 2½" deep in all cases by bending up the bottom chord near the support. Thereby, the joists were made inherently stable against overturning, which resulted in speedier and more economical erection. Furthermore, the open web permitted ready passage of pipes and conduits through the joists in all directions, resulting in concealed installations at lower cost.

During the following years various types of open web joists were developed and perfected. These consist of the electric pressure welded, the electric arc welded and the expanded types. Each type has its own inherent advantages and all of them can be used with complete safety, provided they are properly designed, manufactured and installed.

These were formative years in the development of open web steel joists, when each manufacturer had his own standards with the result that the rated capacities of joists of the same depth and span length, made by different manufacturers, varied to such an extent that it was difficult for architects and builders to readily utilize the economies possible through the use of steel joist construction or be assured that the product, in every

instance, conformed to sound engineering practice. Recognizing that the continuance of such conditions would be detrimental to the interests of manufacturer and consumer alike, a group of manufacturers formed the Steel Joist Institute in June of 1928.

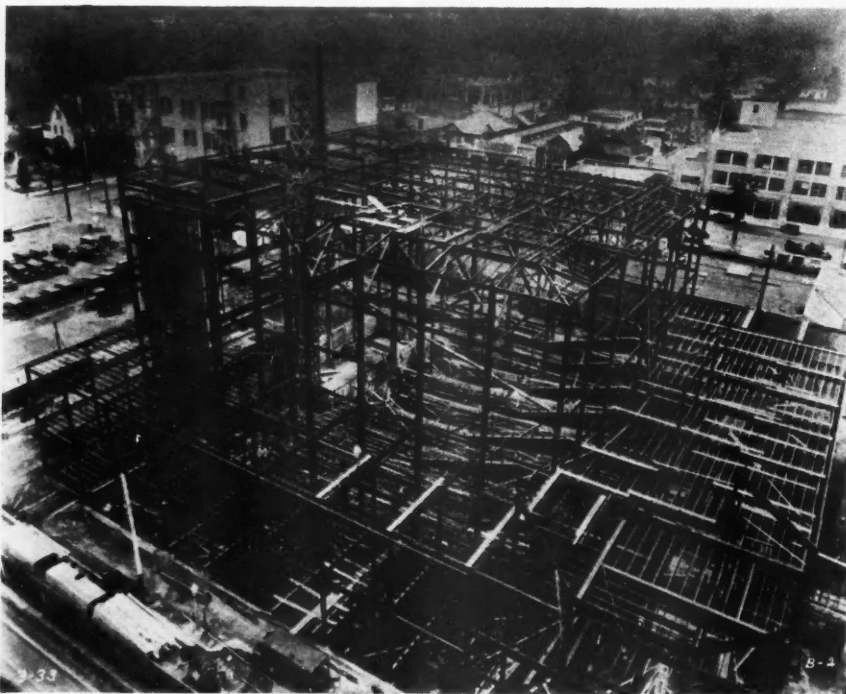
The objectives of the Institute were to standardize methods of design and details of construction, to promote proper building regulations and to disseminate information relative to the efficient use of steel joists. The steel joists manufactured by all members of the Institute comply with its standard specifications and are comparable from a strength standpoint. The designer need only select the joists of proper depths from the Standard Loading Table, specifying that they shall comply with the Institute Standard Specifications, and thus be assured that the joists furnished will be in accordance with sound engineering principles of design.

Methods of Design and Stresses

Open web steel joists are designed as trusses. The compressive stress in pounds per square inch in the top chord and diagonals does not exceed 15,000 nor

$$1 + \frac{18,000}{18,000r^2}$$

when the length, l , of the member is taken as the distance clear of welds or other attachments and r is the least radius of gyration in the case of diagonal and vertical members and the radius of gyration of the top chord or any component part thereof. The top chord is considered to be stayed laterally at panel points by the slab above. The ratio of l to r may not exceed 120. In computing the resistance of joists to construction loads, the top chord must satisfy the additional requirement that it will safely carry the required compression, using l as the distance between lines of bridging and r as the least radius of gyration around the vertical axis but the ratio of l to r in this case may not exceed 200. When the top slab has a thickness of more than one-fourteenth of the distance between supports under the top chord, no bending stresses are assumed in the top chord, but for joists supporting slabs thinner than this and for joists supporting wood floors, the theoretical bending stress for a uniform load is subtracted from the allowable stress at the center of the panel. Combined axial compression



MODERN Theatre job using open web steel joists

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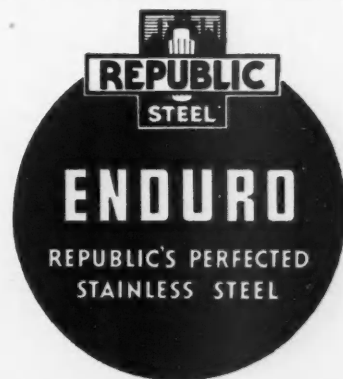
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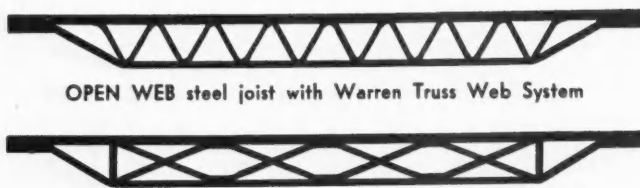


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OPEN WEB steel joist with Warren Truss Web System



OPEN WEB steel joist of expanded type Warren truss latticed web system

and bending stress at points of support of the top chord are required to not exceed 18,000 lbs. per sq. in.

The unit tensile stress in any member must not exceed 18,000 lbs. per sq. in.

The specifications provide that the span of joists having an all steel top chord shall not exceed 550 times the radius of gyration of the top chord in a plane perpendicular to the web of the joist. In the case of joists having a top chord of steel with a wood nailing strip attached, the span must not exceed 160 times the total width of the top chord. There is the further provision that the span shall not exceed 24 times the depth in feet of the steel portion of the joist.

The spacing of the joists should not, of course, be greater than the safe span of the top slab or flooring and the specifications limit the spacing to 24" for floors and 30" for roofs, except that steel joists not over 7 feet apart may be used to support wood or sheet metal roofs.

Erection of Steel Joists

The erection of steel joists is a simple matter, requiring but little skill and merely the exercise of common sense in the operation. Joists should have a bearing of at least 4" on masonry or reinforced concrete and at least 2½" on steel. The specifications provide that the unit bearing pressure shall not exceed 200 lbs. per sq. in. on masonry and concrete and 1,000 lbs. per sq. in. on steel. Every third joist is anchored to a concrete or masonry support with an anchor equivalent to a ¾" round steel bar. The ends of all joists supported on masonry walls are bedded in mortar. All joists supported on steel beams are secured by an anchor made of not less than a 3/16" round steel bar fastened over the flange of the beam, except in buildings having a height of more than twice the least dimension of the base, in which case each joist is welded to the steel beams or girders with two welds at each end, each 1" long, or by means of a ½" bolt or rivet at each end.

All joists should be fastened in place and permanent bridging installed before any construction loads, except the weight of the necessary workmen to install the bridging, are placed upon the joists.

The joists when erected and bridged are required to be capable of safely sustaining a load of 800 lbs. at any panel point on any one joist.

Adequate bridging is an essential element of steel joist construction. As soon as joists have been erected, bridging should be installed between them before the application of construction loads. The bridging must be adequate to safely support the top chord against lateral movement during the construction period and hold the joists in an approximately vertical plane passing through the end supports.

There are, in general, four different types of bridging in use by members of the Steel Joist Institute. Each of these types complies with the provisions of the standard specifications. The four types are rod, strut, beam and portal bridging.

The diagonal members in rod bridging extend both ways from the top chord of one joist to the bottom chord

of the adjoining joists and consist of round steel rods of a diameter not less than 3/16". Inasmuch as these diagonals are capable of resisting tension only, they are supplemented by a continuous strut, equivalent in area to a ½" round steel rod, extending transversely to the top chords of all joists.

In strut bridging, the diagonal members are capable of resisting both tension and compression and are made from either steel channel or angle sections. The diagonal struts are required to be capable of transferring 500 lbs. from each joist to the adjoining joists.

In beam bridging, a horizontally placed beam or angle section, capable of transferring not less than 500 lbs. from each joist to the adjoining joists without appreciable deflection, is so connected to the joists that it supports the top chords against lateral movement. Fourteen gauge wire diagonals are used to secure the bottom chord at each line of bridging of this type.

Portal bridging is furnished either in the form of light welded trusses connected to the top chords of the joists and to web members near the bottom chords or in the form of horizontally placed beam or angle sections so connected to the joists as to restrain both the top and bottom chords against lateral movement. The fourteen gauge wire diagonals are not necessary when this type of bridging is used.

The number of lines of bridging should be in accordance with the following table:

Span	Number of Lines of Bridging
Up to 14 feet.	One row, near center.
14 to 21 feet.	Two rows, approximately ¼ span apart.
21 to 32 feet.	Three rows.

Decks or top slabs of wood, concrete, gypsum or other materials are assumed to stay the top chord of the joists laterally but are not assumed to carry any part of the compression stress.

When wood or sheet metal decks are employed, it is very important that such decks be securely fastened to the top chord of the joists.

Poured structural slabs of concrete, gypsum or other material should be not less than 2" thick. The slab should be poured upon ¾" ribbed metal lath weighing not less than 4 lbs. per sq. yd. for spans up to 24" and upon ¾" ribbed lath weighing not less than 0.46 lbs. per sq. ft. for spans between 24" and 30". The ribs of the lath should be not more than 6" c.c. Other incombustible material at least equivalent in strength and thickness may be used in place of lath. The lath or other centering should be attached by substantial clips or soft wood wedges to the top chord of each joist at intervals of not over 8". When no wood top floor is placed over such slabs, they should be adequately reinforced with rods or wire mesh in addition to the centering lath.

The Standard Specifications for Steel Joists have received general acceptance throughout the country by architects, engineers and building officials. Of the ten different makes of open web steel joists manufactured by members of the Institute, eight are in the form of a Warren truss and two in the form of a modified Warren truss having a latticed system of inclined web members.

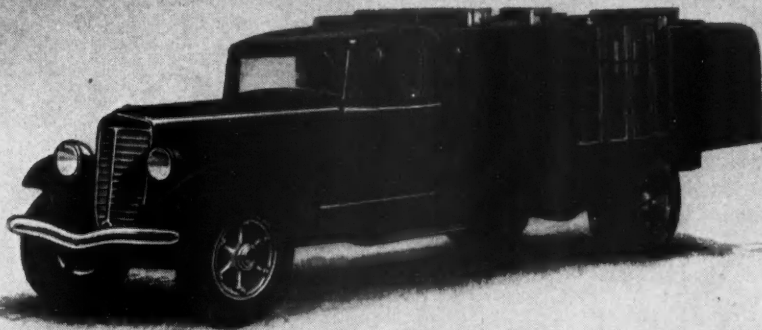
Three different types of top and bottom chord members are used, namely: angle sections, round bar sections and special sections, including expanded shapes. Web members consist of a round steel bar section or, in one instance, a U shaped steel piece, except that in the case of the expanded joists, the web system consists of the double latticed members left intact as a result of the expanding operation.

Open web steel joists are especially adaptable for use

(Continued to page 100)

Another Example of the FLEXIBILITY in the INTERNATIONAL TRUCK Line

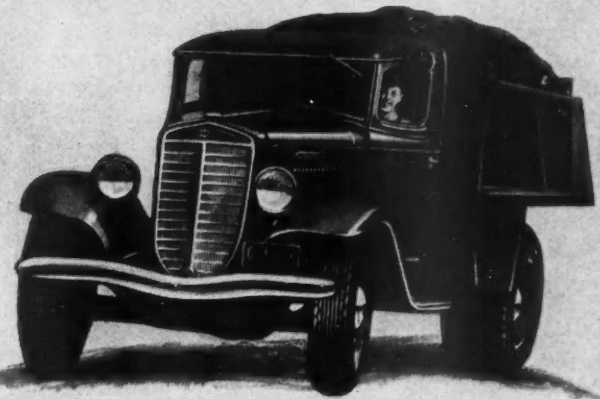
Here are 3 Popular Models,
basically the same—but VERY DIFFERENT!



This is International Model C-35, a quality truck of 1½ to 2-ton rating with a max. carrying capacity of 8,350 lb. (cab, body, payload, and equipment)—International-built throughout—the ideal unit for a thousand-and-one hauling requirements.

This is just one example of International Truck FLEXIBILITY—the full line offers a wide range of choice to make full efficiency on any job—on YOUR particular job, whatever it is. Remember that there are 28 International models—sizes Half-Ton to biggest Six-Wheelers—in 83 wheelbase lengths. Chassis prices from \$415 up, f.o.b. factory. Low time-payment rates apply on all models. International branches and dealers are always at the service of truck users. They will be glad to advise you.

INTERNATIONAL HARVESTER COMPANY
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This is International Model CS-35, same rating and capacity, but engineered throughout for hardier service. This model has an International in-built 2-speed rear axle, doubling the transmission range, providing 8 forward and 2 reverse speeds for dual efficiency on hard highway and in roadless going. Here is POWER when you need it—SPEED when you want it.

And this is International Model CS-35-T, a perfected six-wheel truck—International-built—with a greatly increased carrying capacity. If you want this trailing-axle six-wheeler without the 2-speed axle, ask for International Model C-35-T.



INTERNATIONAL TRUCKS

SHOPCRAFTER'S Corner

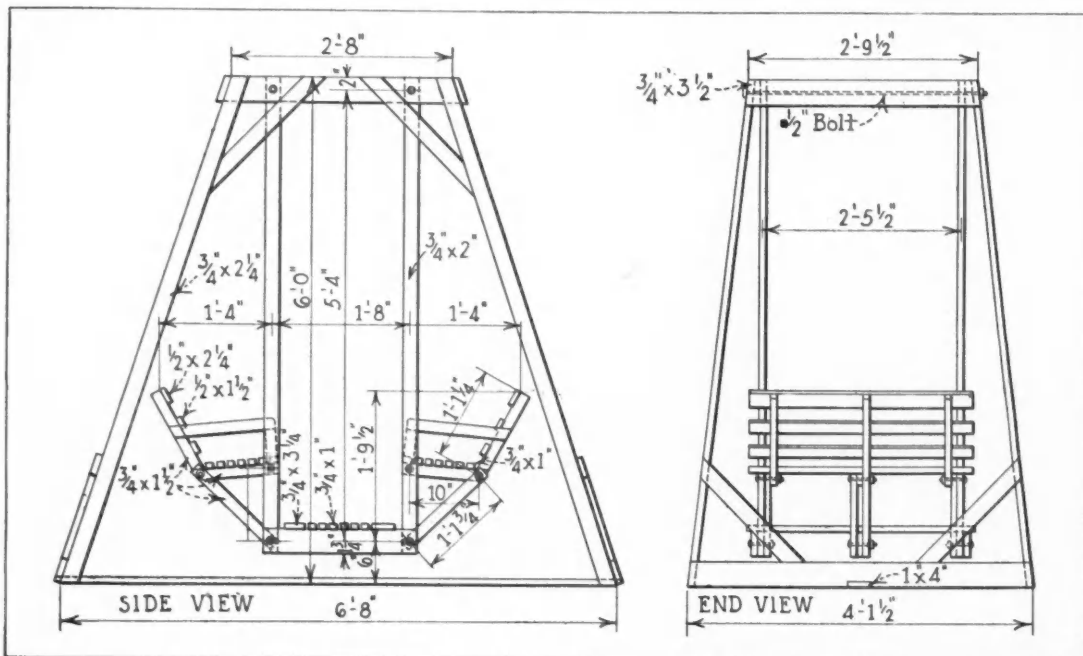
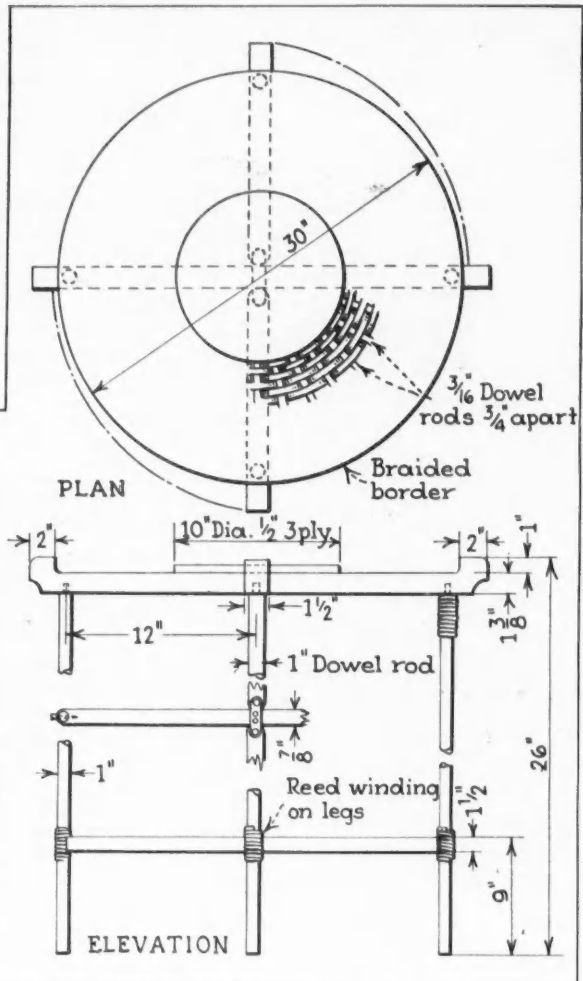
Things To Build for Profit or Pleasure

TWO OF THE seasonal highlights of summer are the hours spent about the home in pleasant outdoor living, and the school vacations enjoyed by the children. This department for August gives details for building two items which can contribute to these happy hours—a folding reed table for use in yards or on porches, and a swing for the child's play yard.

The top of the table shown at the right may be woven with No. 3 or 4 reed around the wooden center disc; the legs of the folding stand are wrapped with reed windings. If reed is not available, however, a large round metal tray will serve as a top. The swing at the bottom of the page is similar to the old fashioned garden swing; the proportions have been reduced to child size. Dimensions of the various members are indicated on the construction drawings which need no further explanation.

RIGHT: Construction details and bill of material for reed table; light weight and folding feature for storage make it ideal for outside use. Reed top is woven around center disc having spokes of 3/16 in. dowel; two pieces of No. 4 reed are interwoven to make a braided edge.

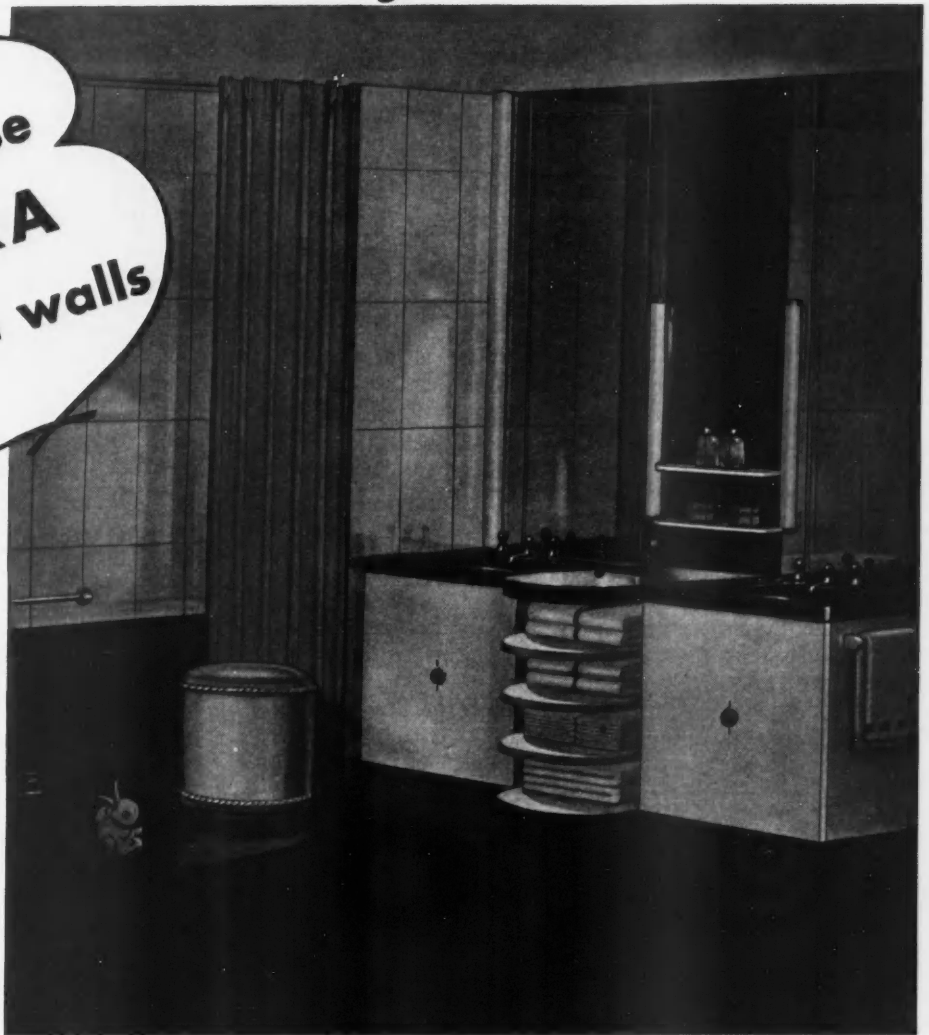
BILL OF MATERIAL				
NO.	NAME	LENGTH	WIDTH	THICK
1	Pce. -top - 3 ply	10 1/2"	10 1/2"	1/2"
1	Pce. -top	30"	2 1/2"	1 1/2"
2	Pcs. - top	15"	2 1/2"	1 1/2"
1	Cross brace	24"	1 1/2"	7/8"
2	Cross braces	12"	1 1/2"	7/8"
4	Legs - dowel rods	27"	1" ϕ	
	Spokes - dowel rods	8 1/4"	3/16" ϕ	
	Reed			



LEFT: Side and end construction views of child's swing showing dimensions of material. This project is easy to build and will be a welcome addition to any playground. Plans from Edward F. Worst.

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When you install bathroom or kitchen walls of Carrara, your jobs are talked about, admired, and usually bring you more jobs of the same sort. Here, White Carrara, stretching clear from floor to ceiling, has been used.

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terial you can use advantageously for other purposes, too. Partitions, table tops, radiator covers, niche linings . . . these are just a few of its possibilities.

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Healthful Comfort Cooling Not an Extravagance

By V. L. SHERMAN

Department of Mechanical Engineering
Lewis Institute of Technology, Chicago

THE summer of 1935 proved to be about the most uncomfortable summer for years because of the excessive moisture in the air, but it has seemed within the last week or so that the summer of 1936 would prove as great in discomfort because of high temperatures. The question of discomfort is of no more importance than that of health, and we can judge of the latter through the daily reports of the press.

But the present generation is fortunate in having a means to combat the uncomfortable and unhealthy weather conditions, and in having an opportunity to grasp them. The Federal Housing Administration proposes a policy that encourages the man of moderate means to invest in a substantially built home of comfort and convenience, providing for a single, long-term mortgage. There is now no doubt as to the effect of this encouragement. Building is no longer in the doldrums. From my own point of view it is so far departed that even in the conservative community of my own town can be found plenty of new construction from which to choose examples of this and that in costs, methods, and equipment. (Some will quite justly remark that it is the conservative community that most quickly recognizes really worthwhile investments.)

Speaking again of hot weather and our given means of protection, it is doubly fortunate that the air condi-

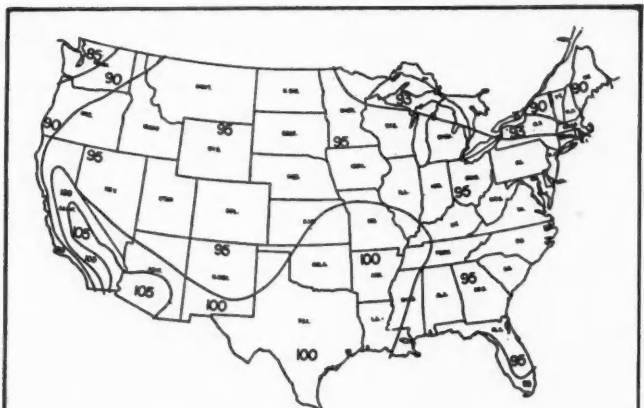
tioning industry anticipated, in their work in residential air conditioning, the growth of the present type of new home. And I want to add, as a member of the society most interested in air conditioning, that this industry has brought the newer and better type of home very much into the foreground. It is constantly being shown to prospective home owners that the present ultimate in comfort is not an extravagant gesture but a reality within their reach.

Now, as in all new markets, there are some who enter the field with extravagant claims in prices and results, and there are some who insist on extravagant results as

INSIDE DESIGN CONDITIONS FOR COMFORT COOLING

OUTSIDE DESIGN DRY BULB	CLASS AA SPECIAL APPLICATION OCCUPANCY OVER 40 MIN.			CLASS A AVERAGE APPLICATION OCCUPANCY OVER 40 MIN.			CLASS B OCCUPANCY UNDER 40 MIN.		
	DRY BULB	WET BULB	R.H. %	DRY BULB	WET BULB	R.H. %	DRY BULB	WET BULB	R.H. %
	85	73	64	64	74	64	60	75	64
	74	62	53	75	62	50	76	63	48
	75	61	45	76	61	43	77	61	41
	76	59	38	77	59	35	78	59	32
90	75	66	65	77	67	62	78	68	60
	76	65	57	78	66	53	79	66	53
	77	63	48	79	65	48	80	65	45
	78	62	41	80	63	40	81	64	40
95	77	67	60	79	68	58	81	69	55
	78	66	54	80	67	51	82	68	49
	79	65	47	81	66	45	83	67	44
	80	64	42	82	65	40	84	66	38
100	78	69	65	80	69	58	82	70	57
	79	68	57	81	68	52	83	69	51
	80	66	50	82	66	44	84	68	45
	81	65	43	83	65	38	85	67	38
105	79	69	63	81	70	58	83	71	57
	80	68	57	82	68	51	84	70	50
	81	67	49	83	67	45	85	69	45
	82	66	43	84	66	39	86	68	40

NOTE: IT IS RECOGNIZED THAT IN CERTAIN UNUSUAL LOCALITIES THE OUTSIDE DESIGN DEWPOINT IS SUBSTANTIALLY LESS THAN THE DEWPOINT OF THE TABULATED INSIDE DESIGN CONDITIONS. IN SUCH CASES, THE CODE COMMITTEE WILL ENTERTAIN THE RECOMMENDATIONS BY LOCAL AUTHORITIES OF THE INSIDE DESIGN CONDITIONS FOR USE IN THOSE LOCALITIES. (FROM TABLE 4, A.C.M.A.)



OUTSIDE DESIGN DRY-BULB-TEMP. FOR COOLING ESTIMATES.



OUTSIDE DESIGN WET-BULB-TEMP. FOR COOLING ESTIMATES.

MAPS GIVING APPROXIMATE DESIGN DRY BULB & WET BULB MAXIMUMS. MAPS AND TABLE ON THIS PAGE COMPILED BY "AIR COND. MFGS' ASS'N"



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WHEN any one product outsells its competition many times over, you have good reason to believe it's *the best* in its field. ★ ★ Brixment makes the best mortar you can possibly use—more plastic and easy-working—stronger—can't cause efflorescence or fading of colors—*water-proofed* at the mill. ★ ★ Because it combines *all* of these essential qualities, Brixment for years has been the largest-selling masons' cement on the market. 1 part Brixment, 3 parts sand. Five bags will lay approximately 1000 brick. ★ ★ Louisville Cement Company, *Incorporated*, Louisville, Kentucky.

HEATING-AIR CONDITIONING-PLUMBING AND WIRING

well as cheapness in price. A combination between two of these parties is generally disastrous. Both are "out of luck."

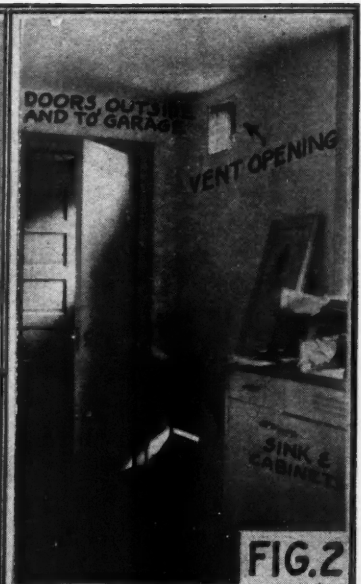
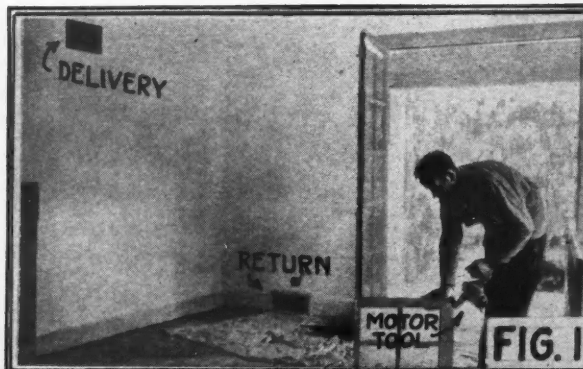
The American Society of Heating and Ventilating Engineers has worked for years to bring about reasonable results, and they are now seconded by the Air Conditioning Manufacturers' Association. The maps shown on the first page of this article and the table of temperatures are both taken from the collected data of the latter group. They are here used to show that best results are not obtained through the most sensational temperature differences, but through those regulations of temperature and humidity best suited to outside conditions and the lengths of time spent within the conditioned spaces. To recall remarks from some previous articles let me say that physiological shock affecting digestion and respiration is quite possible under extreme conditions, and that comfort and health alike prescribe common sense in the regulation of atmospheric conditions.

Consulting the maps we see that the upper one divides the country by curves into districts having different maximum temperatures for the ordinary, or dry-bulb, readings. These are not the highest readings but those against which air conditioning equipment must be expected to operate over possibly extended periods. The lower map is, it seems to me, the more important one. In this the country is divided by curves into districts having different maximums (or maxima) in wet-bulb temperature readings. In getting the wet-bulb temperature a thermometer is provided with a light sack to fit the mercury bulb. This sack is saturated with water at air temperature, then the thermometer is swung about its upper end to allow the water to evaporate. As the evaporation cools the bulb the reading obtained depends on the rate of evaporation which in turn depends upon the amount of moisture already in the air.

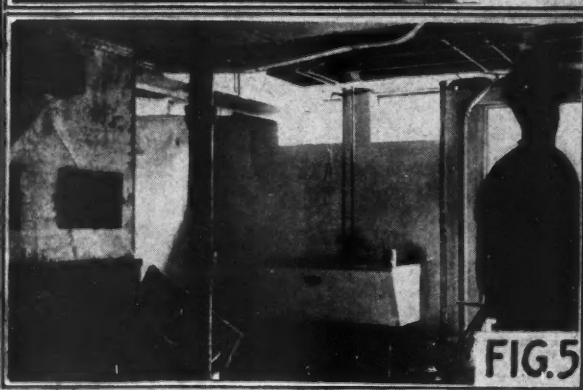
The amount of heat in the atmosphere is not measured by the ordinary thermometer alone. It depends as well upon the amount of moisture present. However, over a short period, a feeling of extreme coolness can be obtained by lowering the dry-bulb temperature to excess and leav-

ing the moisture content high. This is a cheap and very unsafe way of relieving discomfort, and cannot be extended with any degree of comfort over any period. On the other hand it is unwise to so lower the dry-bulb temperature as to cause any disagreeable following shock on entering or leaving air conditioned space.

In the table provided will be noticed two classes of conditioning, one for special application in class AA and another in class A, both for over forty minutes of occupancy. Then there is class B for those spaces in which the occupancy is under forty minutes. The reason for



PHOTOGRAPHS SHOWING FEATURES IN ONE HOME LOOKING TOWARD COMFORT & CONVENIENCE



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...persuades whole neighborhoods to go in for hardwood floors of Bradley's splendidly seasoned Oak. For, with every installation... be it new home or old... each neighborly visitor to that home becomes impressed with the rare beauty in the natural figure, "flower" and color which characterize Bradley's stock:—qualities inherent in the superb oak timber from which that stock is cut... qualities thoroughly safeguarded by Bradley's specialized drying and manufacturing methods.

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the increase in both dry-bulb and wet-bulb readings in "outside readings" of over 85 degrees is a matter not only of health but of real comfort. But it will also be noticed that notwithstanding the increase in readings the temperature differentials cause a decrease in the percentages of relative humidity.

To return to the original theme then it should be noted that extreme differences in temperatures are not only unnecessary but unreasonable and unsafe. The cooling load should be calculated on the basis of both the dry-bulb and the wet-bulb temperatures but not to such extremes as are sometimes advocated or sometimes wanted. Such reasonable loads are not what they were once thought to be. And just to have a finger in the pie myself let me say that I still think the temperature differentials will be quite a little less when the phenomenon of weather making becomes familiar to the most of us. We all like to be astonished, some of us like to be humbugged. When we accept air conditioning as every day fact we will all be more reasonable and comfortable. And we can thank the Society and the Association for their help in pointing the way.

The group of photographs on the preceding page is made up from one home now under construction. The general contractor has years of credit in the locality and intends to prolong them, Mr. F. T. Tomlins. Figure 1 of this group shows again the overhead delivery of conditioned air and the return-air grille in the mop-board. There are two of each in this living room. And like the majority of the well designed homes this is planned to take every advantage of pleasant weather by making out-of-doors accessible and pleasant. Notice the wide french doors opening onto the porch beyond. Air conditioning does not mean closing the house up in season and out.

In this connection the question is again asked, this time from Vermont, concerning the use of double glass in air conditioned houses. All windows should be provided with air space between two panes, whether there is double sash or double glazing in single sash. The heat transmission losses are less than half, and the possibility of mist on the outside in hot weather and dew and frost on the inside during cold weather is eliminated.

In Figure 2 we see the kitchen's connection with the service door at the rear and the attached garage, a very convenient arrangement. To the left of the newer type of cabinet sink, and well toward the ceiling is the kitchen exhaust ventilator opening. No air should be returned to the conditioner from the kitchen, bath room, or the laundry when it is in use.

Figures 3 and 4 are views from outside and within the attached garage. Every convenience besides heating is accounted for and space is saved with the use of overhead doors. A gale of wind coming upon these doors when they are open finds them snugly berthed and safe from damage but ready for closing without awkwardness.

Figures 5 and 6 were taken particularly to answer some queries concerning the overhead space necessary for duct work and the size of the conditioner. This conditioner is larger than the average in order to care for extra space, yet from Figure 5 as well as from Figure 6 it can be seen that the space involved is no greater than the older type of warm air furnace of smaller capacity. Properly designed ducts do not sprawl along the ceiling as do warm



air leaders but nest in out of the way spaces under and between the joists. And it should be repeated again and again that when a home is heated or cooled under automatic control the temperatures remain within a close range of the control point, that no great fluctuation of load occurs, and that, consequently, the peak or greatest load is considerably less than with an unregulated system—the load really being fuel energy necessary to maintain specified conditions against out-of-door conditions. The unregulated system might be likened to the sailing vessel which has to tack against the wind, first to port and then to starboard, maybe long and maybe short, but always off and on to keep on her general course.

In a way the question of size led to the photograph shown in Figure 7. So frequently those unacquainted with various pieces of equipment which are intended to handle work that has been variously handled previously, form a mental picture of their sizes to correspond to their duties. A young man accompanying a party during the inspection of boiler room equipment in a theatre seemed a bit puzzled. Two boilers of the low-pressure variety had been installed to care for two theatres having a combined seating capacity of around 9,000 people. Oil-burners on the pit doors were in full blast on this particular occasion, but except for a subdued roar and a trifle of warmth these well built and well insulated boilers did not present much evidence of the work they were doing. When the oil burners were pointed out his remark was, "Is that all there is to them?" But when the business end of the burner and the furnaces were shown him he showed a feeling of being put upon.

The automatic coal-stoker shown in Figure 7 is one, or rather one and parts of another, which a local agent kindly unloaded for me from his truck in his garage. For size it is easier to compare with more familiar objects, and the tires in the background permit this comparison. When installed the hopper shown has both motor cover-plates and side plates. The motor-blower-transmission unit is shown to the left in the foreground. The motor is direct-connected to the blower which delivers draft to the wind tunnel. The positive delivery of air to the firepot, or

(Continued to page 104)



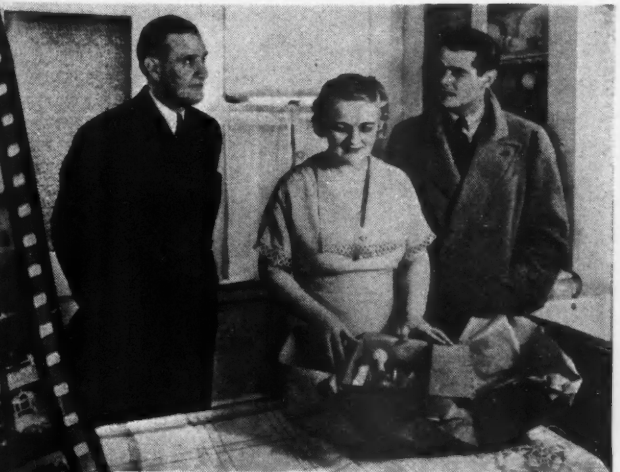
"Look here, young man, I haven't noticed any water dripping anywhere. That roof's good for a coupla years yet."—The applicator's salesman shows how to handle the man who wants to put off a new roof.



"Good evening, Mrs. Mason. This is Miss Wood, of the J. C. Barker Roofing Company..."—How to use the phone to promote roofs is demonstrated.



"Jerry and I don't even start to sell a roof until we've given it all the advantages of a specialty."—The roofer tells how to apply specialty selling methods to roofs.



"... Just a little memento of our very pleasant business dealings."—The salesman makes one sale lead to several more.

Everyone who sells roofs will want to see these SOUND-SLIDE FILMS

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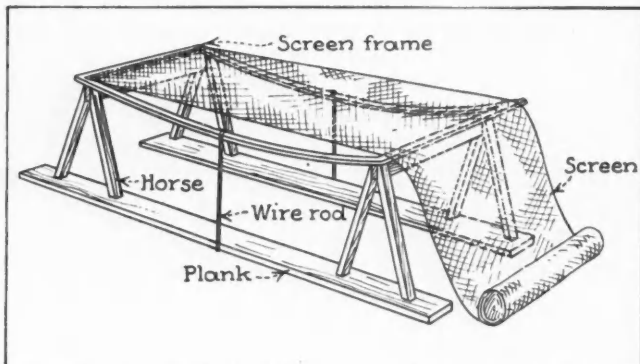
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Stretching Wire on Screens

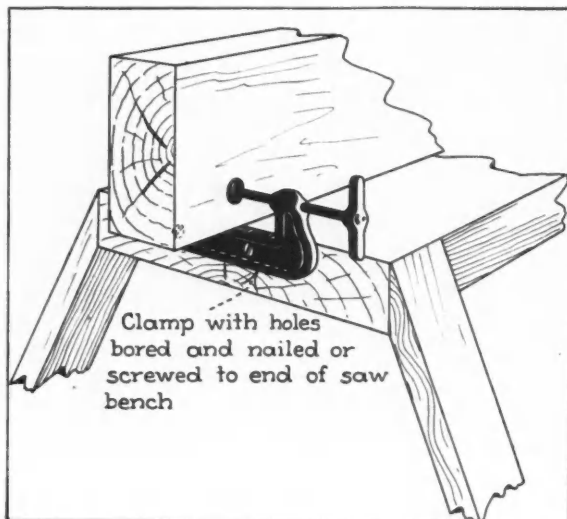
HAVE a little idea for your Practical Job Pointers column. When stretching screen wire over frames, I place two planks under my saw horses and have a stiff rod run from each plank to the screen frame, thus pulling the frame down in the center, as shown in the drawing. I then tack the screen wire at each end, then I release the frame, making the screen wire very tight and free from buckles.—CHARLES H. GOODALL, Carpenter, La Porte, Ind.



STRETCHING wire on screens by bending frames on horses.

Clamp for Work on Saw Bench

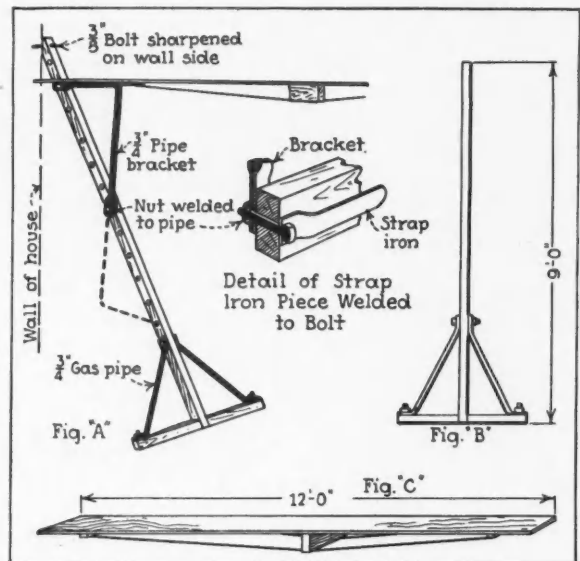
HERE is a handy kink for your Job Pointers Department. Any mechanic knows what a job it is to hold a board on edge on a saw bench while making a mitre or planing. I always carry a 4-inch machinist clamp in my box. Simply bore two holes in the clamp; make the holes large enough to take an 8-penny nail. You can use either screws or 8-penny nails to attach to bench. This device certainly is a big help; the sketch shows how to apply it.—HARRY BRADY, Bridgeport, Conn.



CLAMP attached to end of saw bench to hold work.

Handy, Light Weight Scaffold

THE sketch below shows scaffold equipment we found especially suitable for low area work. Figures A and B give details for the two supports. These are made of a 2x6 ripped, making 2x3's. The long section we made 9 feet long with a footing about 3½ feet. Braces on the footing are made of ¾-inch gas pipe, flattened on the ends and drilled for bolts. Along the length of the upright piece at six-inch intervals ½-inch holes are drilled for the attachment of brackets. The brackets are made of ¾-inch



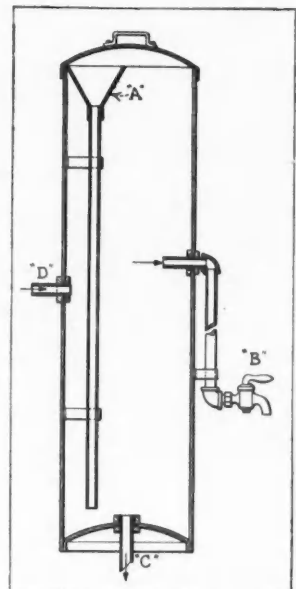
DETAILS of lightweight scaffold handy for low area work.

gas pipe, flattened on the ends and drilled for ¾-inch bolts. The smaller bolts in the ½-inch holes make for easier adjusting of brackets. For each bolt drill a hole through a piece of strap iron about 5 inches long, insert bolt and weld head of bolt to iron. This answers as a washer and wrench for loosening and tightening bolt.

Figure "C" shows the scaffold board. This is a light, straight grained 1x12 reinforced with a truss of light cable, or other light material of high tensile strength running over a 2x6 centerpiece.—HUBERT DAVIS, Decorator, Rush Springs, Okla.

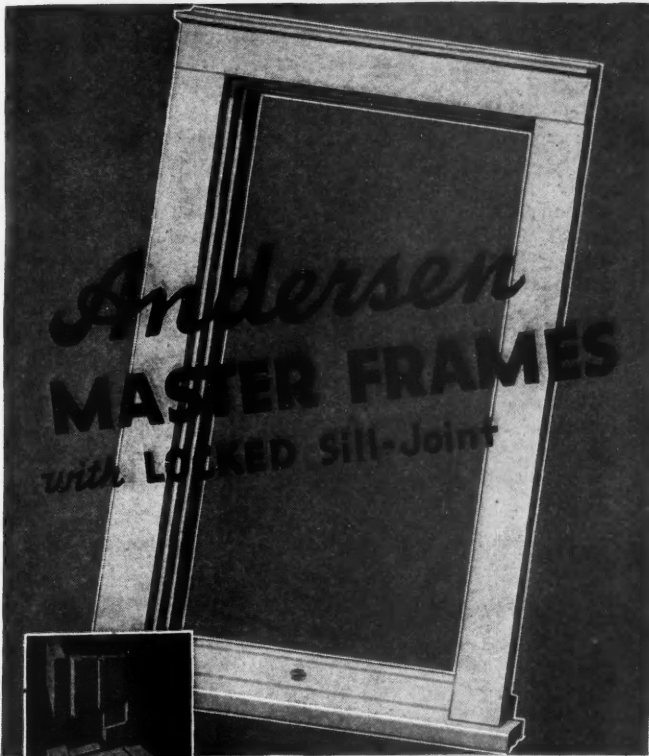
Storage Tank Without Running Water

HAVING a furnace but no running water, I built a kitchen hot water supply out of an ordinary range boiler of 30 gallon capacity with a fairly tight fitting lid to prevent undue evaporation. "A" on sketch is a funnel into which water can be poured from a pail or otherwise. It is attached by bracket to the inside of the tank and is intended to direct the cold water to the bottom of the tank or near it. "B" is a faucet which will draw water from the top or hotter portion of the contents. "C" is the outlet to the furnace coil, and "D" is the inlet from the coil, and should be below the outlet to faucet. Circulation will heat the water in the usual manner and the loose lid prevents the accumulation of any pressure. When no water comes when faucet is opened, more can be added. Asbestos furnace paper pasted over the tank will conserve heat.—W. E. MOREY, Terre Haute, Ind.

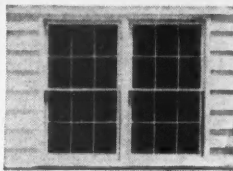


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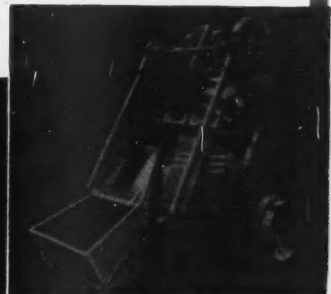
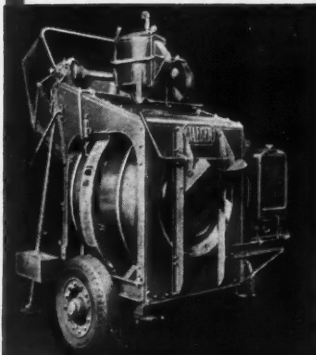
Don't be fooled by "streamlined" mixers that are no faster than five years ago.

The 1936 Jaeger gives you streamlined ACTION as well as looks—trails as fast as a new Ford V-8 on Timkens and Pneumatics—gives you double the mixing action and faster discharge with its patented "V" bottom Dual Mix Drum—will outwear any other type of tires, any previous model half-bag mixer we have ever built.

Get facts and prices before you buy. Use handy coupon.

Popular Price 5S End Discharge Trailer

Full one-bag capacity on most mixes. End discharge saves time, cuts costs.



7S and 10S SPEED KING Pneumatic Tire Trailers
Fastest mixers ever built. End discharge advantages.

THE JAEGER MACHINE CO., 521 Dublin Ave., Columbus, O.
Send new Catalog, prices and terms on 1936 Model Jaeger Mixers for Concrete, Plaster, Mortar. Pumps Hoists

Name _____

Address _____

BOOKS on BUILDING

A REVIEW of current publications in the building field. For information about these and other books, write American Builder, Book Service Department, 30 Church Street, New York City or direct to the publishers.

CHECK-LIST OF CONSTRUCTION, CONSTRUCTION MATERIALS AND EQUIPMENT—by George W. Spaulding, Construction Superintendent. 1935. 322 pages, 7x10½, loose leaf, flexible covers, celluloid index tabs. American Builder Book Department. \$7.00.

The Check-List is a condensed quick reference of the building construction industry, compiled with the idea of helping eliminate many costly mistakes and omissions in bids, estimates and specifications. This book is of interest to architects and designers, general and sub-contractors, specification writers, estimators, tradesmen and colleges. The sections of the contents are: General Section, Carpentry, Concrete, Construction, Equipment, Electrical, General Provisions, Hardware, Heating, Landscaping, Masonry, Miscellaneous Metals, Painting, Plastering, Plumbing, Sheet Metal, Structural Steel, Tile, and are alphabetically arranged with cross references freely given. Celluloid index tabs allow checking of any particular work without going through the entire book. The Check-List does not contain cost data or advertising matter.

THE ENGLISH COUNTRY HOUSE—By Ralph Dutton. 1936. 120 pages, photographs and drawings. Charles Scribner's Sons, New York City. \$2.75.

This book is of particular interest to the architect, designer and student. The numerous illustrations show the architectural development of the country house from Norman to late Georgian times. Plans, details and layouts in the text furnish useful information to those interested in the domestic architecture of these periods.

JONES' ESTIMATING TABLES—by Ernest F. Jones. 1934. 68 pages, tables and drawings. Imitation leather. Domestic Engineering Publications, 1900 Prairie Ave., Chicago, Ill. \$2.00.

A book of interest to those handling air for forced air heating and air conditioning for residences and other small buildings. Included in the book are four sets of tables for degree differences of 90, 80, 70, and 60 between room and outside temperatures with multiplying factors for c.f.m. requirements on nine different factors of heat loss; charts of duct sizes, and for conversion from round to rectangular; tables for determining register and riser sizes for supply and return air on the basis of c.f.m.; also multiplying factors for changing c.f.m. to B.T.U. and an example of the application of the data.

DOUGLAS FIR USE BOOK. 1935. 209 pages, 8½x11. West Coast Lumbermen's Association, 364 Stuart Building, Seattle, Wash. \$1.00.

A new and enlarged handbook for architects and engineers, giving load tables for Douglas fir lumber, formulas for various kinds of loading, and other structural and design data. It includes information on basic laws for stress grades and notes on their use; properties and factors related to longitudinal shear, compression and tension stresses, deflection, effect of duration of time of load, and factors of safety; an exposition of timber connectors, and other data about Douglas fir.

CARPENTRY—by Townsend. 1935. 326 pages, 431 illustrations. Cloth binding. American Technical Society. \$2.00.

A popular book for carpenters and apprentices dealing with carpentry and joinery in all its forms. The contents include chapters on: varieties and characteristics of timber; joints and splices in carpentry and joinery; walls; floors; roofs; rafters; window and door finish, and many other important subjects.

Summer Brings Interest in Plumbing and Air Conditioning

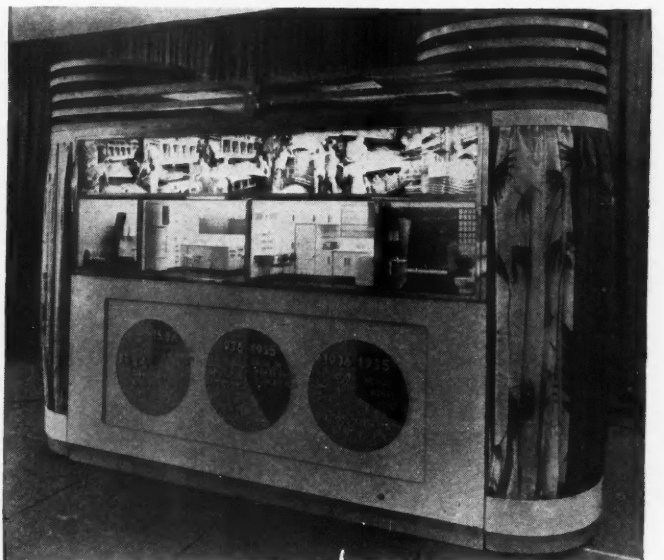
Briggs Display Seen at Plumbers' Show

AS A FEATURE of the 54th annual show and convention of the National Association of Master Plumbers in Buffalo, the exhibit of the Plumbing Ware Division of the Briggs Mfg. Company demonstrated how the wealth of new style conceptions shown will have widespread effects on the design and construction of American homes.

A full sized model bathroom and kitchen in striking new color combinations competed in appeal with a series of nine miniature bathrooms and kitchens which were constructed accurately to scale, appearing in the center of the exhibit below a revolving film which portrayed production methods at the factory.

In the full sized bathroom, the bathtub was recessed in an arch at one end of the room. Above the tub, glass blocks were used effectively for a window to admit natural light. A shower was set in a separate compartment of metal and glass; next to it was a dressing alcove. The color scheme throughout the bathroom and kitchen was sandstone and coral trim with soft brown mica.

Half of the back wall of the kitchen was made of glass blocks. The room included a rounded refrigerator of ultra-modern design, a Briggs cabinet sink, a modern stove and attractive work boards on one side of the kitchen. A table top let down from the wall to provide a breakfast nook. Both rooms were designed on the principle that they are air conditioned.



MINIATURE bathrooms and kitchens, part of Briggs Beautyware exhibit at the National Association of Master Plumbers; above miniatures, revolving film showing production methods.

New G-E Unit Air Conditioner

A 1936 model unit air conditioner which will cool, dehumidify, ventilate, and filter the air in an average sized room without requiring any special installation, such as plumbing or electrical work, has been announced by the General Electric Company.

In its attractive solid wood cabinet, this unit harmonizes with any decorative scheme. The walnut veneer casing is modern in design, but so conservative that it will not conflict with conventional styles of furnishing.

Instead of utilizing one large refrigeration machine to do the cooling, the air conditioner is equipped with three smaller, hermetically sealed units which are extremely quiet in operation, and the machine can be plugged in any light socket without special wiring of any sort. The only installation which is necessary with the new GE FC-2 is the placing of a telescopic duct connection in a partly opened window to introduce fresh air for adequate ventilation and to supply air for cooling the air cooled condensers and removing heat and moisture.

How long will Genasco shingles last?

Naturally that is information both you and your customer want—"How long will the shingles last?"

We do not want to make any false promises, or wild guesses. Frankly, we do not know how long a Genasco Asphalt Shingle roof will last. But we do know this . . . roofs shingled with Genasco Asphalt Shingles 22 years ago are practically good as new right now. And when shingles last that long . . . still looking fine and attractive, and still give thorough protection . . . anyone who uses them certainly gets his money's worth.

If your customer wants a good roof over his head, sell him a Genasco Asphalt Shingle roof . . . a roof that gives him value for his money . . . a roof that gives you a reputation for quality and a reasonable profit on the job.

Now is the time to increase your roofing business with Genasco Asphalt Shingles . . . the shingles that are waterproofed with **Trinidad Lake Asphalt Cement**, the famous "Slam-Test" coating. Start on the road to better business now—send the coupon *today*.

Genasco

Reg. U. S. Pat. Off.

Asphalt Shingles

Waterproofed with

TRINIDAD LAKE ASPHALT CEMENT

THE BARBER ASPHALT COMPANY

Philadelphia

New York

Chicago

St. Louis



22 years Home of S. A. Bailey, 34 Columbus St., Northampton (Mass.), roofed with Genasco Asphalt Shingles in the fall of 1914. After 22 years the shingles are still in excellent condition.



22 years Genasco Asphalt Shingles were applied to the roof of this house owned by A. M. Esterbrook, Winona Ave., Haverhill (Mass.), in the spring of 1914. The owner says "These shingles are still in good condition . . . some more years before they will need to be replaced."

The Barber Asphalt Company, Philadelphia, Pa. AB8

Please send me the folders checked below:

..... Genasco Sta-Rite Shingles

..... Genasco Sealbac Shingles

..... Genasco Hexagon Strip Shingles

..... Genasco Latite Shingles

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

NEW PRODUCTS

FOR INFORMATION ABOUT any new product
write American Builder Information Exchange,
105 West Adams Street, Chicago, Ill.

Guide for Electric Handsaw

A PATENTED portable saw guide for use with their electric handsaws has been developed by Wappat Incorporated, the portable electric tool division of Simonds Saw and Steel Company, Pittsburgh, Pa. The guide supports the saw above the material to be cut, and thus gives the saw an action similar to that of the radial saw or swing saw. It is adjustable for various depths of cut and can be used for angle as well as for square cutting. Because the guide and saw roll back and forth the length of the work bench, it is unnecessary to move the lumber once it has been placed upon the table. The guide can be clamped instantly into a stationary position when that is desirable.

The device is useful on duplicate work; after the first piece has been cut the balance are done almost automatically. Twelve pieces of bridging can be cut each time the blade passes through the material. Ten pieces of studding can be notched or cut off at a time. The guide is made of an aluminum quadrant equipped with rollers, clamps, and depth and angle adjustment, and a special angle iron track.



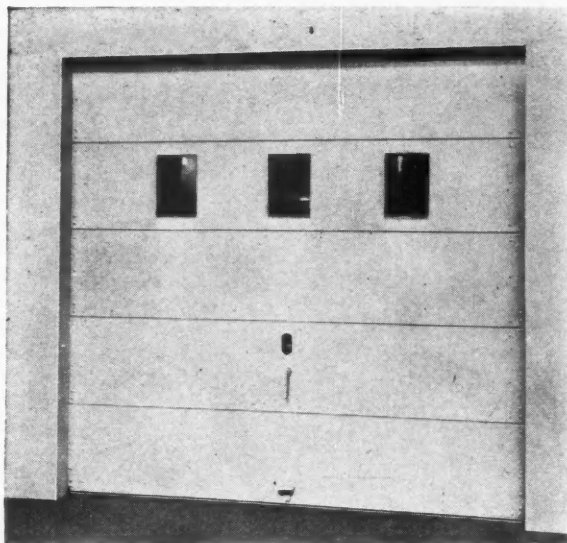
WORKMAN using new electric handsaw guide

All Metal Garage Door

THE Kinnear Mfg. Company, 115 Fields Ave., Columbus, Ohio, recently announced a new all-metal sectional upward-acting door trade named All-Steel Rol-Top. The door sections are rolled from heavy gauge steel sheets and then heavily galvanized. A heavy roll on the edge of each section provides a continuous smooth operating interlocking hinge and also serves as a reinforcement against deflection or possible warpage. Operating on ball-bearing rollers traveling in steel vertical and horizontal tracks the door raises easily up, over and back, being counterbalanced by means of two matched tension springs that lie parallel to the horizontal tracks. Vertical tracks are mounted on a continuous angle assembly to which an adjustable sloping metal weatherstrip is attached. This strip engages the end of the door, which is also graduated. Hardware is of rugged design bolted and riveted to the door. Parts on the outside are cadmium plated. Locking is accomplished with a tumbler lock operating on lock-bars that engage a slot in the track angle on both sides of the door.

Furnished with or without sash the flat, clean-cut sections

offer a new design motif that harmonizes particularly well with present trends of architecture. This new door is built in any size for simple installation in old or new buildings.



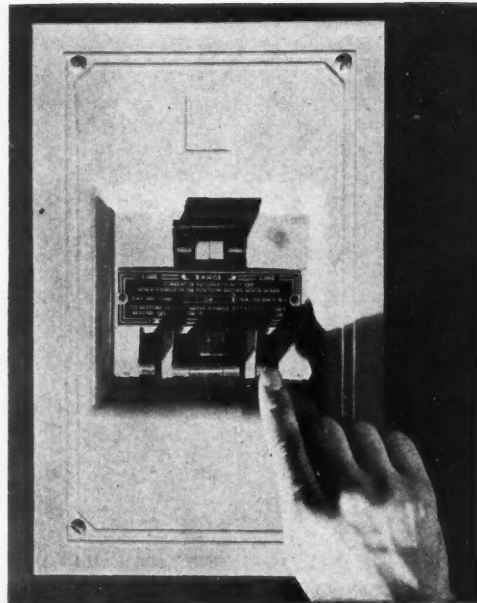
EXTERIOR view of All-Steel Rol-Top door.

Protective Device Replaces Fuses

AS A SUBSTITUTE for the conventional 115/230 volt a-c. entrance and branch circuit protective equipment, a small, low priced multi-breaker load center has been announced by Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and the Square D Company, Detroit, Mich. The multi-breaker load center, hinge mounted in a cabinet, consists of one or more small but highly effective automatic circuit breakers, each capable of interrupting 5000 amperes at 115 volts a-c.

Approved as service equipment complete with the cabinet, the load centers are provided with solid mains up to 70 amp. and for 2 wire 115 volt or 3 wire 115/230 volts a-c. solid neutral service. The load centers are manufactured with varying number of circuits and circuit ratings to suit all ordinary residential demands. The branch circuit breakers are provided in ratings from 15 to 35 amperes.

The new multi-breaker load center is particularly applicable for residential service, such as the control and protection of circuits supplying power or lighting, domestic appliances, ranges, and water heaters. Because of its pleasing appearance, it may be conveniently mounted in the kitchen or in a hallway close to the natural center of the distributed load, thus simplifying the house wiring.



FLIPPING the handle of the multi-breaker load center to "ON" position after overload restores circuit.

Specify The

OVERHEAD DOOR"

**REGARDLESS
WHETHER FOR
OLD or NEW BUILDING
EASILY OPERATED
PLEASING IN APPEARANCE
VERY ECONOMICAL**

**WOOD
or
STEEL
CONSTRUCTION**



**HAND
or
ELECTRIC
OPERATION**

The "OVERHEAD DOOR" is backed by a NATION-WIDE SALES and INSTALLATION SERVICE of skilled door engineers who will aid you in selecting the proper equipment for your particular need. They will also see to it that the door is properly installed to your satisfaction.

A MILLION USERS THE BEST RECOMMENDATION

OVERHEAD DOOR CORPORATION
HARTFORD CITY, INDIANA U.S.A.

CLIP THIS COUPON and MAIL NOW!

Please send me literature and full information regarding your product.
I am interested in doors for the particular purpose as checked.

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Address _____

City _____ State _____

PRIVATE GARAGE
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 WAGON DOORS
 STEEL DOORS
 FACTORY DOORS
 OTHER BUILDINGS
 ELECTRIC CONTROLS

AB-8-36

Mail to: OVERHEAD DOOR CORPORATION, Hartford City, Indiana, U. S. A.

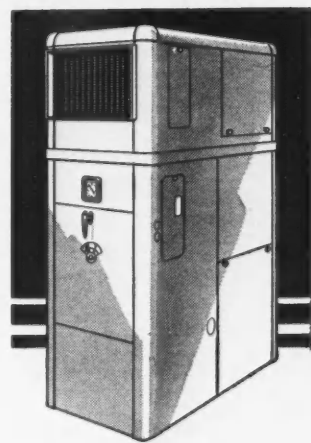
Why "split system" air conditioned homes are easier to sell

The "split system" permits the supplying of cleaned, tempered, humidified, circulated air to certain selected rooms, and boiler radiator heat to those rooms from which it is undesirable to return the air to the unit, such as kitchen, laundry, bathroom and garage. In certain bedrooms too, air conditioning may be considered unnecessary.

Then too, DOMESTIC HOT WATER for kitchen, laundry and bath, is supplied from submerged

copper coils directly within the boiler itself. The Fitzgibbons Boiler-Air Conditioner thus eliminates the storage tank and all hot water supply equipment. Think how this aids your basement planning problems.

Get the facts about this unit—facts that are making prospects think, and buy homes air conditioned by Fitzgibbons units. Write us.



All in a single compact unit—Conditioned, Circulated AIR, Economical Steel Boiler HEAT, Abundant, Tankless HOT WATER SUPPLY.

Fitzgibbons Boiler Company, Inc.

GENERAL OFFICES:
ARCHITECTS BLDG., 101 PARK AVE., NEW YORK, N. Y.
WORKS: OSWEGO, N. Y.

BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

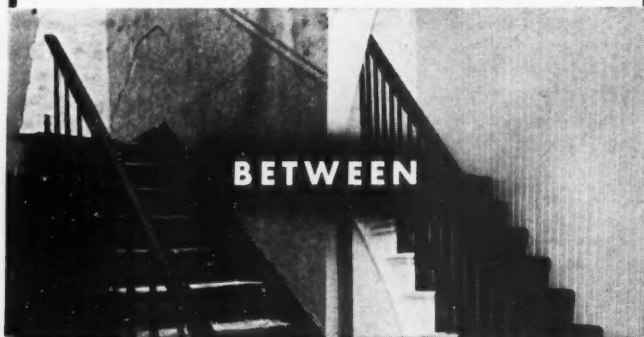
For use with any method of mechanical firing—oil burner, coal stoker, gas burner.

FITZGIBBONS BOILER-AIR CONDITIONER

HOURS ARE FEWER



CO\$T\$ ARE LOWER



BETWEEN

B. M. and A. M.
 (BEFORE MASONITE) (AFTER MASONITE)

GRANT WOOD, famous artist, has recently finished remodeling a house, built in 1858, in Iowa City. The "before" and "after" views of the stairway, shown above, indicate the dilapidated condition of the house when repairs were started, and the beauty of the finished job. Webbed and grooved wall effects, typical of pre-Civil War architecture, were achieved with MASONITE TEMPERED PRESWOOD.

● EVERY remodeling job can be fast—inexpensive. No need to keep tenants out of homes, stores, offices or apartments for weeks on end. No need to spend a year's rent on the changes, either. Regular carpenters can produce new walls, ceilings, partitions, closets overnight with Genuine Masonite Products. (Well, almost overnight!)

These grainless boards can be nailed permanently over present surfaces. Once they're properly applied they won't warp out of place. In fact, they add unusual structural rigidity wherever you use them.

When you remember to specify Masonite, you can forget about paint. The beautiful warm-brown surface requires no decoration or preservative. Yet it can be varnished, painted or enameled if desired.

Architects and builders are discovering many new and unusual treatments—possible only with Genuine Masonite—which can be executed by sanding, beveling and grooving. We'll be glad to give you further details. Just mail the coupon below. No cost or obligation.

GENUINE MASONITE PRODUCTS

TEMPERED PRESWOOD
 QUARTRBOARD

TEMPRTILE
 STRUCTURAL INSULATION



MASONITE CORPORATION, Dept. AB-8
 111 West Washington Street, Chicago, Ill.
 Please send me free samples and more information about

- TEMPERED PRESWOOD
- TEMPRTILE
- QUARTRBOARD
- STRUCTURAL INSULATION

Name _____
 Address _____
 City _____ State _____

Bakelite Mending Woods

MENDING woods that can be worked like putty in their plastic state, but that will harden to the same consistency of wood, have recently been developed by the Sherwin-Williams Company, Premier Chemical Corporation, Detroit White Lead Works, and Acme White Lead and Color Works. These new materials may be used in a wide range of applications—for woodworking, furniture repair, in the home or factory workshop—replacing wood wherever necessary. They are made with a Bakelite resinoid base which provides superior bonding strength, together with many other advantageous properties. These mending woods may be applied the same as putty, and after they have hardened they withstand common acids and alkalies, water and grease.



BAKELITE mending woods are applied like putty and when hard are like wood.

Random Ashlar Concrete Unit Machine

THE Miles Manufacturing Co., Jackson, Mich., has recently brought out a new machine for the manufacture of multiple random ashlar units whereby, according to reported tests in various sections of the country, these units can be made at one-third the cost of the individual units, and they also can be laid up at one-third the cost.

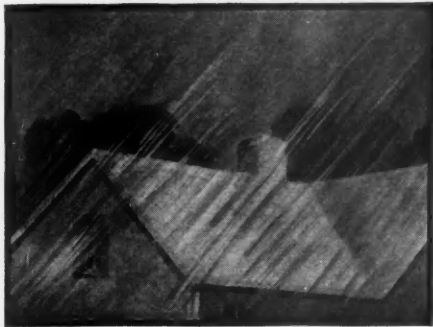
The blocks are manufactured in the standard 8x8x16 size, the face of the blocks having deep ridges which are pointed up by the masons as they are laid or after the job is completed. When this job is completed this wall is similar in appearance to a wall laid up of individual units.

The machine using the Miles random ashlar face plate equipment can be operated either by hand or power.



WALL of random ashlar concrete blocks after pointing.

Rain - Dust - Wind Cannot Penetrate A WEATHER-TIGHT RESIDENCE



Be Sure To Calk All Door
And Window Frames With



Calking is an essential operation in building construction. It prevents heat loss, avoids damage by water and dust—and is a "must" item in air-conditioning.

Many contractors are taking on calking jobs. With a thoroughly reliable product such as Pecora Calking Compound, calking is a profitable business-builder. Write for our dealer proposition.

SPECIAL OFFER

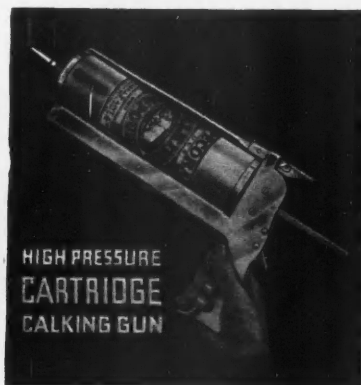
This Gun

With 3 Nozzles and
4 Filled Cartridges

Shipped Express Collect for

\$7.40

This New Type, High-Pressure Cartridge Calking Gun (patent applied for) is a great Time and Material Saver. Specially designed for Pecora Calking Compound which is packed in Non-Refillable Cartridges of approximately One-Quart Capacity.



HIGH PRESSURE
CARTRIDGE
CALKING GUN

Pecora Paint Company, Inc.

4th Street and Reading R. R.

PHILADELPHIA

Established 1862 by Smith Bowen

SASH PUTTIES
MORTAR STAINS

Also Makers of

SUCTION MASTIC
for Structural Glass

ASBESTOS FURNACE CEMENT
COLORLESS DAMPPROOFING
PECORA PERFECT PATCHING PLASTER
WEATHERTITE LIQUID ROOF COATING

SMITH
3 1/2-S
TILTER

MEMO
from the Wise Construction Co.

Jim:
Better use a Smith
3 1/2-S Tilter on that
next job. It has the
same design as the
mixers that poured
the Boulder Dam - yet
costs no more than
a cheap tub mixer.

Geo. M.
Superintendent

BOULDER DAM
poured by

SMITH
MIXERS

The T. L. Smith Co., 2849 N. 32nd St., Milwaukee, Wis.
LEADERS FOR 36 YEARS

Reardon's **BONDEX** WATERPROOF CEMENT PAINT



The Nation's Choice by Acclamation!

IF one brand of house paint outsold all others combined, would that not be convincing evidence of its superiority? In the waterproof cement paint field more Reardon's BonDEX is sold than all competitive products put together. Such an overwhelming preference for BonDEX can mean only one thing—BonDEX is the outstanding product for weatherproofing stucco and waterproofing basements. Get on the band wagon!

SEND FOR NEW BONDEX FOLDER

THE REARDON COMPANY AB-8-36
(Address Nearest Branch) St. Louis • Chicago • Los Angeles

Please send new illustrated folder on BonDEX.

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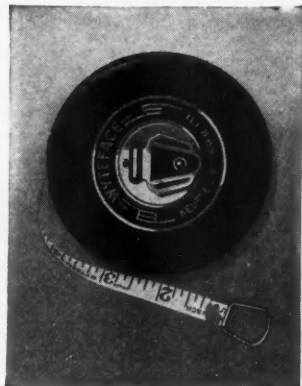
City _____

Easy-to-Read Steel Tapes

A COATED steel tape of permanent white with graduations in deep black, known as "Wytface," is being manufactured by the Keuffel & Esser Co., Hoboken, N.J. Black-on-white graduations make it easily read, even in bad light.

The white surface will not crack or chip, being firmly bonded to the steel; the coating also serves to protect from rust and decrease the tendency to curl or kink. Any dirt or grime can be wiped off with a damp cloth to restore the clean white surface.

In use it is exactly like an ordinary steel tape. The case is of black leather; exposed metal parts are either stainless steel or chromium plated. The tapes are available in 25-, 50- and 100-foot lengths; also on engineer's metal reels and spring wind pocket models.



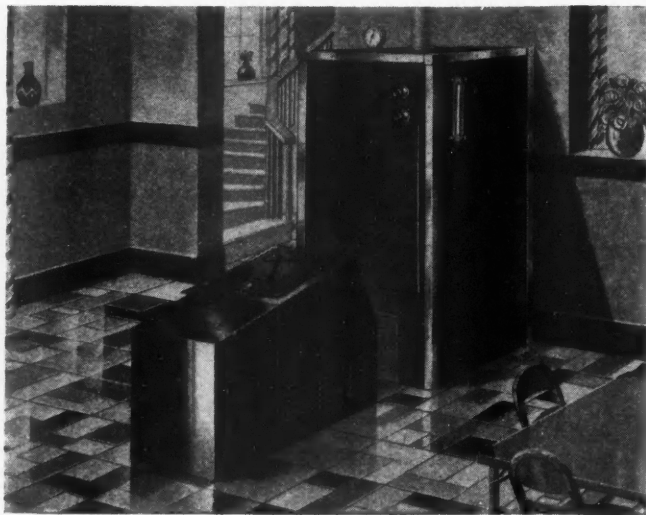
NEW steel tape has white coating with black graduations for easy reading.

Stoker and Automatic Heating Plant

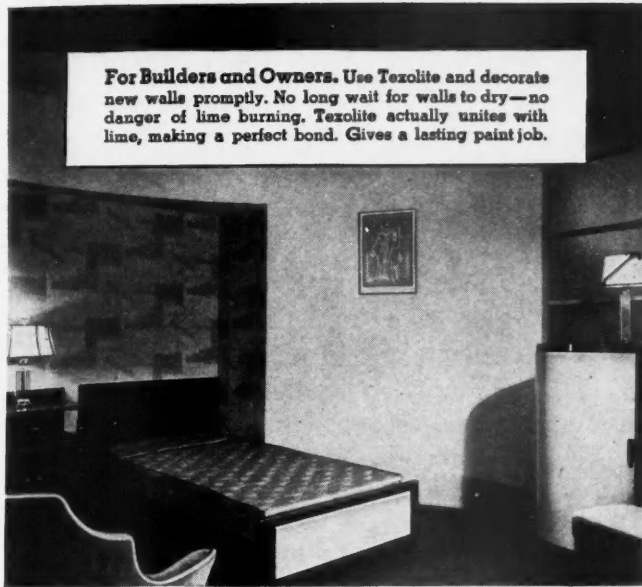
THE Anchor Stove and Range Company, New Albany, Ind., has announced a new anthracite model of the Anchor Kolstoker. It is furnished in either the standard type or with automatic ash removal, and is designed for use with steam, vapor, warm air or hot water heating systems, or high pressure boilers. The stoker can be installed with any new equipment or heating plant now in service.

Special features of the Anchor Kolstoker which are incorporated in the anthracite model are the Oilmotor Drive for silent, powerful operation; attractive cabinet lined with special sound-proof insulation; feed worm inspection plate which makes it easy to remove obstacles from the coal feed mechanism; sectional burner head which permits expansion and contraction without cracking or warping; the low hopper which is easy to fill and provides big coal capacity; and cabinet design which completely encloses all working parts.

Together with American Radiator Company of New York, the Anchor Company has also developed the Anchor-Arco Kolstoker-Boiler Unit. This new unit is in itself a complete automatic heating plant with the functions of the Anchor Kolstoker and the Arco Boiler co-ordinated for maximum efficiency. The complete unit is finished in bright red and black.



ANCHOR-ARCO Kolstoker Automatic heating plant.



For Builders and Owners. Use Texolite and decorate new walls promptly. No long wait for walls to dry—no danger of lime burning. Texolite actually unites with lime, making a perfect bond. Gives a lasting paint job.

Cut Your Decorating Costs With **TEXOLITE** CASEIN WALL PAINT

■ Here are the brief facts. Texolite is an entirely new-type casein paint that cuts decorating costs to a bare minimum. One gallon of Texolite makes one and one-half gallons of ready-to-use quality paint. Right there you get 50 per cent more for your money. In addition, one coat of Texolite does the work of two coats of ordinary paint—another big saving.

Equally important, Texolite is both durable and beautiful. One coat brings lasting beauty to all interiors. It comes in ten colors and white. By adding Texolite Deep Color to white Texolite, you can have an unlimited range of color—any color effect you wish, from brilliant hues to the most delicate shades.

TEXOLITE HAS THESE ADVANTAGES

1. Hides in one coat.
2. Dries in one hour.
3. Goes 25% farther.
4. No brush marks.
5. No paint odors.
6. Does not yellow.
7. One gallon makes one and one-half gallons of ready-to-use paint.

TRY TEXOLITE AT OUR EXPENSE

Builders and owners everywhere are enthusiastic about Texolite advantages—its beautiful colors, its economy, its durability. Mail coupon today. We will send you complete information and a FULL QUART OF TEXOLITE absolutely FREE.

UNITED STATES GYPSUM COMPANY AB-8
300 West Adams Street, Chicago, Illinois
Please send me, free of charge, a sample full quart can of Texolite Paint, together with a sample of Texolite Deep Color and handy Color Guide.



My Name.....
Address.....
City..... Phone No.....



UNITED STATES GYPSUM COMPANY



Patented RU-BER-OID Eason Flap covers all nails— seals lap edges—prevents leaks —stops wind ripping

● We couldn't improve Genuine RU-BER-OID ROLL ROOFING, so we improved its method of application with a new 7-layer seam. RUBEROID Roofs with Eason Flaps have been subjected to driving winds, excessive moisture and heat, and in each case, the roof has remained water-tight.

The reason is obvious: with Eason Flaps all nails are sealed with two layers of fabric and one of asphalt seam cement. Nails cannot rust or pop out because of heat. Virtually a 7-layer, built-up seam with closed lap edge, there is no opportunity for wind or water to get under.

At only a small additional cost, we are now ready to supply contractors Genuine RU-BER-OID Roll Roofing with the patented Eason Flap. This new leak-proof seam requires a trifle more time to apply, but it eliminates the former weakest point of a roll roofing roof.

If you know of an old roof that cannot be kept water-tight, suggest RU-BER-OID Roll Roofing with Eason Flaps. Or, if there is a new roll roofing job ahead, sell this new method of improved application. Full details will gladly be sent you if you will write or mail the coupon.

RU-BER-OID ROOFING AND BUILDING PRODUCTS

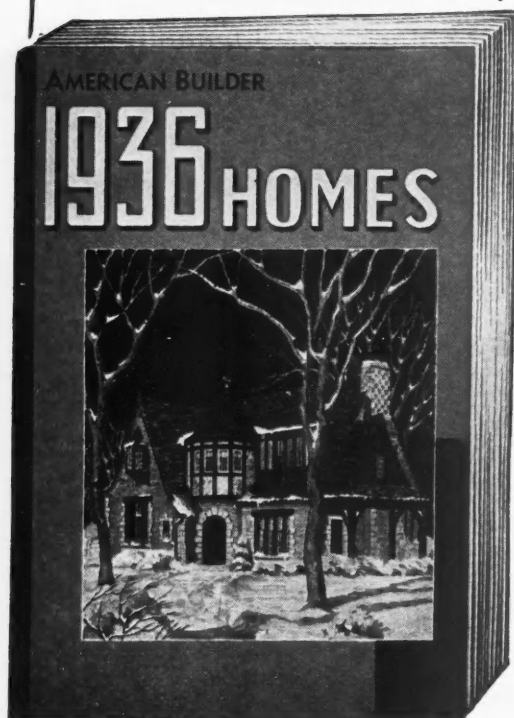
BE SURE TO INVESTIGATE MAIL THIS COUPON NOW

The RUBEROID Co. AB-8
500 Fifth Avenue, New York, N.Y.

Please send descriptive folder of Genuine RU-BER-OID Roll Roofing with Eason Flaps.

Name.....
Address.....
City..... State.....

Use This
New Plan Book
**To Get
More
Business!**



As Busy Bees from Many

flitting from one to the other, and gathering from each the essence needed to make the perfect product, so busy designers, contractors and builders can use "American Builder 1936 Homes," as they can use no other plan book ever published, as a source of ideas out of which may be woven the finished fabric of the home that is to be.

It is, Primarily, A Book to be SHOWN!

Many prospective home owners will, of course, see in one of its scores of attractive designs just what they want, almost to the last detail. Others, again, will see something that approximates their ideas, and with that as a starting point will evolve what is to be built for them. Taking, for instance, a floor layout from this plan, a roof, or an entrance, or a stairway from that, a kitchen or a bathroom from another, and so on.

Admirably Adapted to this Use

is this latest, best and most popular of all plan books. So wide is its sweep, so varied are the types of homes described and illustrated, so rich is it in suggestions of unusual architectural details, both exterior and interior, that hard, indeed, to please, must be any clients that cannot find in its colorful pages the ONE home that, above all others, they must have NOW!

The 5 Big Sections Briefly Outlined

CHAPTER I—

FORWARD-LOOKING HOME DESIGNS

Iowa Streamlined Home A Sensible, Modern,
Low-Cost New York Home Precast Panel House
at Washington Chicago Ultra-Modern Con-
crete House Modernistic Brick House Yon-
kers Model Home G-E Experimental and Prize-
winning Homes House of Today at Dayton
Marblehead Demonstration Home Some Modern
Interiors.

CHAPTER II—

DESIGNS OF TESTED WORTH

Silver Star Sample House Manhasset Model
Home Virginia Exhibit Home Lancaster
Realty Board Home Inexpensive New Jersey
Homes An Air Conditioned Cotswald Cottage
. . . . Time-Proof Home A Kansas City Home,
"High on a Hill Top" Carefree Cottage (with
working plans) Connecticut House for Country
Living A well-designed Cape Cod Colonial
New Ideas in Recreation Rooms, Study and Bath
. . . . Some Striking Interiors.

Gather Honey Flowers

CHAPTER III—

LOW COST HOME PLANS

Half-Acre Accomplishments . . . New Methods and Materials . . . Three Small Homes of 2, 3 and 4 rooms . . . Attractive 5-room Colonial . . . Curtis Cottages . . . Build Now, Finish Later . . . Southern Cottage, broad and airy . . . A New Style Brick Bungalow . . . Two Designs for Week-End Cottages . . . A 4-room Vacation House . . . Home for Narrow City Lot . . . Flat-roof Cement Home . . . A dozen other inexpensive Homes of all types.

CHAPTER IV—

NEW VALUE THROUGH RESTYLING AND MODERNIZING

Interiors with a Modern Touch . . . Planning More Efficient Kitchens . . . Modernizing Ideas for Kitchens and Bathrooms . . . "As Good as New at Half the Cost" . . . "From Old to New in Kalamazoo" . . . Restyles and Rents . . . Remodeled Tea Room . . . What's New in Garage Designs and Door Rigs . . . City House Restyled . . . Arkansas Pine Paneling . . . "Shop-crafter's Corner."

CHAPTER V—

COUNTRY HOMES and FARM BUILDINGS

Low-Cost Homesteads and Barns . . . More Garages . . . Roadside Market . . . Shed-Roof Hennerly . . . Open-Front Poultry House . . . Four Hog Houses . . . Planning Farm Improvements . . . A High Corn Crib . . . Wind-Proof Gothic Barn . . . and many others.

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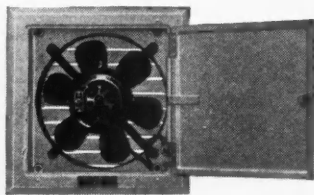


Another Opportunity to Sell, Lease or Rent is Lost ... Because ...

People all over the country have learned that they need no longer endure the nuisance of kitchen odors, excessive heat, smoke and fumes that make the air unfit to breathe and ruin curtains, furniture and decorations. That's why so many home owners are installing ventilating fan equipment ... why they demand it when they go out to buy, lease or rent a house.

To meet this demand, install Emerson Kitchen and Attic Ventilating Fans, in the houses you're building, and in the homes or apartments on your rental lists. Why Emerson Ventilators? Because they boast an enviable reputation for efficiency, for trouble-free performance and long life ... because they're easy to install.

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Emerson Ventilating Fans perform a dual service. They have electrically reversible motors and draw out superheated air, kitchen odors, greasy smoke, etc., or draw in cool, refreshing outdoor air. They move from 36,000 to 63,000 cubic

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This powerful but quiet Emerson Attic Ventilating Fan, when turned on in the evening, clears the house of warm daytime air and floods it with fresh, cool night air. Simple to install. Buyers decide quicker, more desirable tenants are attracted, if the homes you have to sell, lease or rent are equipped with Emerson Attic Ventilators.



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News of the Month

Building Activities and Meetings

Many Sections Reporting Building Labor Shortage

ACCORDING to a recent FHA report, there are indications that with the continued upswing of residential construction, the building industry may in the near future be facing a general shortage of skilled building artisans.

That serious consideration must be given this eventuality is borne out by reports from many sections of the country of a present insufficiency of skilled building labor. Various offices of the Federal Housing Administration, newspapers, local employment agencies, contractors and labor organizations in certain cities and towns in thirty states and territories have reported contractors experiencing difficulty in obtaining skilled labor to complete or start home and other building projects.

In some localities in several of the states it has been necessary to import skilled building mechanics in order that work could be completed. Such were the conditions at the time reported. Whether they become chronic or not depends, of course, upon future developments.

If a threatened shortage of skilled building labor becomes an actuality it will be due, not only to a very material increase in residence building, but also to the fact that apprentices have not entered the building trades during the past few years. The almost dormant condition of the building industry during the depression greatly restricted the opportunity for training the usual number of recruits normally attracted to the industry.

Reports from States and Territories

ALABAMA—The Birmingham News says: "The revival in the building industry discloses a shortage of trained carpenters, brick and stone masons and others skilled in the building trades."

ALASKA—Shortage of skilled labor in all of the larger communities of the Territory. Efforts to obtain carpenters from adjacent supply centers of the Pacific Northwest so far have proved largely futile.

ARIZONA—Particularly in Tucson, where a small building boom is underway, there is a scarcity of skilled labor.

CALIFORNIA—The manager of the Central Employment Bureau for Veterans of Los Angeles said: "A survey of agencies indicates that they are all receiving many calls from contractors for building tradesmen. The Metropolitan Water District has a particularly hard time getting sufficient skilled labor." Unemployment in the building trades is at a minimum, says the Stockton Record.

COLORADO—Denver faces a shortage of labor in skilled trades. Denver Post says, "Denver's building boom is resulting in such a demand for skilled labor that contractors are forced to wait from two weeks to two months for the type of skilled workman they demand."

CONNECTICUT—General contractors throughout the State, especially in Fairfield County, are having difficulty in getting skilled labor.

DELAWARE—Wilmington reports a shortage of carpenters and painters.

DISTRICT OF COLUMBIA—All types of labor in the building industry scarce. Builders with several houses under construction claim harder and harder to get satisfactory help to complete them.

GEORGIA—There is an increasing scarcity of competent labor in the construction field due to the heavy increase in the building of homes. Atlanta reports difficulty in obtaining competent contractors to bid on construction work in that city and many other sections of the state because they have all the work they can handle.

HAWAII—People are complaining that they are unable to get carpenters and skilled building tradesmen to do work.

KENTUCKY—A recent survey made in this state reveals that in practically every community building tradesmen are

(Continued on page 86)

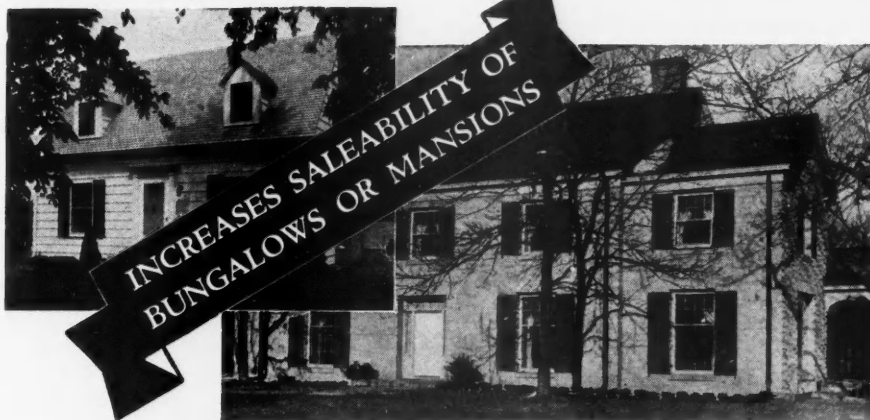
Why "CELOTEX BUILT" Houses are Easier to Sell!

YOU can offer your prospects a better house—sell it to them easier when you build with Celotex! Celotex Insulating Sheathing, Celotex Improved Insulating Lath and Celotex Interior Finishes give buyers positive assurance of these important advantages:

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place other basic building materials, add structural strength and insulate—ALL at one low cost!

And finally, Celotex houses are easier to sell because Celotex is so well known. More homes are insulated with Celotex than with any other material. Home buying prospects are usually sold before hand on the idea that the Celotex built house is a BETTER BUY!

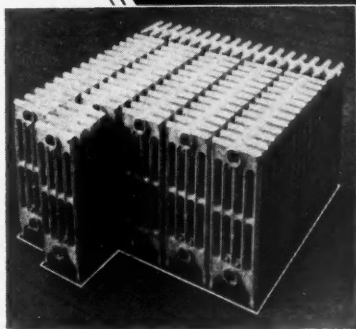


BRUCE MACKAY, Architect—MACKAY BROTHERS, Contractors for Both Houses, Cedar Rapids, Iowa

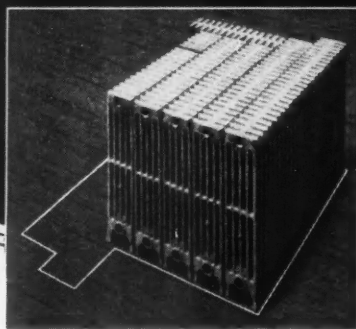
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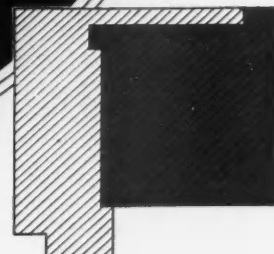
Celotex Cane Fibre Products are manufactured under the Ferox Process (patented) and resist damage by Fungus Growth, Dry Rot, Termites (white ants). Look for the brand name. Accept no substitutes.



This group of old style tube-type radiators are what would be needed to heat the average 7-room house.



Here are the Slenderized ones to do the same 7-room heating job. Note by the marking on the floor how much less actual space they take.



To make it still plainer, here is a plan view. The dark portion is the Slenderized.

Still More Evidence That The Burnham Slenderized Radiators Take Up 40% Less Room

It's a hard thing to believe, that a cast iron radiator that is 40% smaller, will do the same heating as the larger one. It is still harder to accept the fact, that although 40% smaller, the Slenderized one heats 40% quicker. Still, if such were not the facts, you can well imagine the position we could be put, in mak-

ing such a statement. The result might well be disastrous to the Burnham reputation. If you will just read the captions under the above three cuts, you will find it easy to accept the 40% less room statement. As for the 40% quicker heating, if you doubt it, just drop us a line, or better yet, send for the Slenderized Radiator Book.

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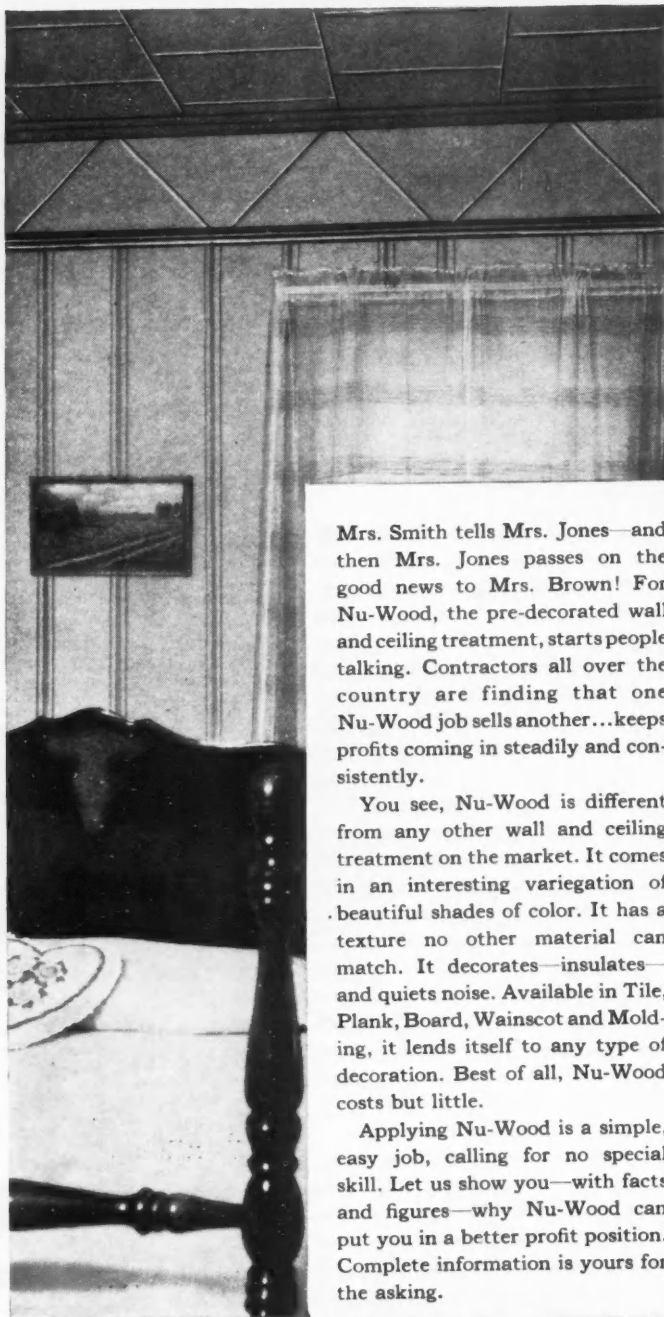
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Mrs. Smith tells Mrs. Jones—and then Mrs. Jones passes on the good news to Mrs. Brown! For Nu-Wood, the pre-decorated wall and ceiling treatment, starts people talking. Contractors all over the country are finding that one Nu-Wood job sells another...keeps profits coming in steadily and consistently.

You see, Nu-Wood is different from any other wall and ceiling treatment on the market. It comes in an interesting variegation of beautiful shades of color. It has a texture no other material can match. It decorates—insulates—and quiets noise. Available in Tile, Plank, Board, Wainscot and Molding, it lends itself to any type of decoration. Best of all, Nu-Wood costs but little.

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Nu-Wood Bevel-Lap Tile on the ceiling and Nu-Wood Bevel-Lap Plank on walls made this bedroom beautiful and quiet.

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all employed and there is an acute shortage of this type of labor.

IDAHO—All skilled building mechanics are now employed in the residential construction field according to the president of the carpenter's union.

ILLINOIS—The Woodstock Journal states it will be necessary to bring in carpenters and other skilled mechanics because of a large amount of building construction.

IOWA—Des Moines reports difficulty in obtaining carpenters, bricklayers, painters and other building trade craftsmen. A very serious shortage of this type of skilled labor will undoubtedly develop in the state of Iowa.

MARYLAND—Baltimore Sun states that the home decorating trade is employing more men and concerns report difficulty finding skilled workers.

MICHIGAN—In and around Ann Arbor it is practically impossible to hire anyone in the building field without a wait.

MINNESOTA—The Federal Employment Agency reports that skilled building mechanics are being called back to work and that there probably will be a shortage of building artisans during the fall.

MISSOURI—Reports a shortage of skilled building labor in some of the towns. St. Louis newspapers stating that there was an acute shortage of painters and decorators.

NEBRASKA—Leaders in the building industry in Omaha say a shortage of skilled labor in the building crafts, including painters, carpenters, brick and stone masons is developing as a result of the building activity.

NEW JERSEY—Chairman of the Better Housing Committee of Point Pleasant states that every builder, contractor and carpenter is loaded with work and that sufficient labor would have to be imported from neighboring districts to meet the demand.

NEW YORK—There is an acute shortage of skilled building labor in the Albany area. In Ithaca there is a scarcity of skilled workmen due to the unprecedented amount of building in progress necessitating importing men from other sections.

NEVADA—In Carson City there is a shortage of skilled mechanics in the building industry. Reno reports a shortage of skilled building mechanics throughout the state. All building artisans are employed in Elko, and no architects are available in many communities.

NORTH DAKOTA—Reports shortage of labor in the building industry, particularly carpenters and bricklayers.

OHIO—Considerable fear in Cincinnati that there will soon be a shortage of building mechanics. Lumber dealers and craftsmen at Kenton are all busy and it may be necessary to import a general contractor from some other city if new homes now projected are built. Dayton reports that the construction of new homes is held back because skilled workmen in the building trades are not available.

PENNSYLVANIA—Altoona Tribune reports shortage of carpenters, plasterers, painters and other artisans in the building business. In Pittsburgh, the shortage of skilled labor in the building industry becoming very acute.

SOUTH CAROLINA—Charleston reports that there is a general complaint over the state as to shortage of skilled labor artisans. Lumber dealer at Rock Hill is using skilled labor from adjoining states.

TENNESSEE—Editorial in the News-Sentinel of Knoxville says there is danger of skilled labor mechanic shortage as a result of the upswing in home construction.

TEXAS—San Antonio reports a shortage of steel lathers in Corpus Christi. The Beaumont Enterprise states: "So much building is being done in Beaumont today that there is a scarcity of bricklayers and carpenters."

VERMONT—From Burlington comes word that reports from employment agencies indicate a scarcity of skilled workmen, particularly in the building trades, and it is necessary to obtain help from outside the city.

WASHINGTON—Most of the skilled labor in Seattle has been absorbed and the building construction program is being seriously retarded. A large lumber company in Bellingham advises that it has plans for five houses but contracts cannot be let because no first class carpenters are available. The same situation in a number of other cities of the state is reported.

WYOMING—The general report is that "no idle men physically able are to be found in any section of the state."



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.. for **SMALLER HOMES**

There has long been a demand for an air-conditioning system priced for low-cost homes.

Here it is—the Model 102-A. It is a genuine Tempered-Aire, identical with Model 102, except for a less expensive outer case.

It is fully automatic. It filters and humidifies. It has a silent multivane blower, which insures correct circulation and furnishes blower cooling in summer. And it has the economical, factory-built Tempered-Aire duct system.

The Model 102-A burns No. 3 grade oil and owners say Gar Wood oil heat costs less than coal. With all of these price advantages, Tempered-Aire is thoroughly logical for low-cost homes. Write for full particulars, including details of our cooperation with architects through our field engineering staff. We also have systems for homes of any size, including indirect or "split" systems, and a full line of oil burners and water heaters.



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■ From every standpoint, Perforated Rocklath is an ideal plaster base. Fire tests on a partition show it to be qualified for a one-hour fire rating. Yet this unique lath is economical to use. Without a doubt, Perforated Rocklath represents the most important improvement in gypsum lath since the advent of bundled Rocklath.

STRONGER BOND WITH PLASTER

Perforated Rocklath has an important additional advantage. It binds the plaster to the lath with an extra strong grip. Here's how it works. Perforated Rocklath is a 3/8-inch thick gypsum lath with circular perforations, 3/4-inch in diameter. When plaster is applied it penetrates these perforations. Thus with Perforated Rocklath as a base, the plaster has, in addition to the natural bond, an extra strong "mechanical" bond.

MANY OTHER ADVANTAGES

Perforated Rocklath has many other features that distinguish it from ordinary plaster bases. It's easier to plaster over. It goes on rapidly. It is economical. Patented and manufactured exclusively by United States Gypsum Company. Mail coupon today for free sample.

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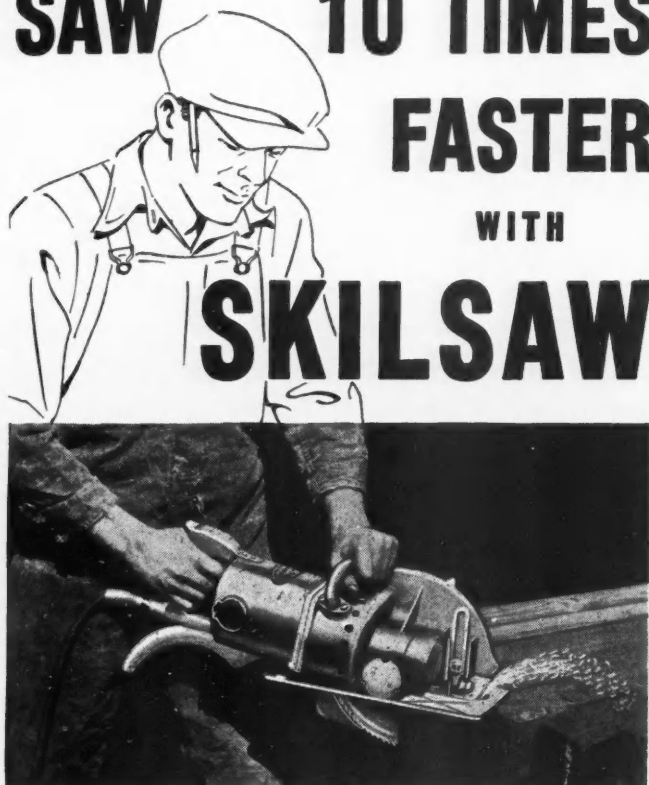
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**... AND SAVE ENOUGH
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SAVE on cutting joists, studding, rough flooring, siding, bridging! SKILSAW cuts off 222 ft. of 3/4 in. decking in only 12 minutes! Brings big savings in cutting stair stringers,—cuts out a 16 step stringer in only 10 minutes!



SAVE on cutting rafters! SKILSAW makes bevel cuts for any pitch roof. Using a SKILSAW, the work can be ganged with a great saving in time!



SAVE on trimming doors,—ready for hanging in only 7 minutes! Strips no thicker than shavings can be cut off with SKILSAW. Finishing blade leaves edges smooth as if sandpapered.

● Wherever there's sawing to be done, SKILSAW will do it quicker, better and cheaper than by hand. Electric power at your saw handle will bring added profits to you . . . will turn more bids into jobs . . . will do more jobs in less time! SKILSAW has been the choice of builders for sixteen years because, model for model, it has more power, more refinements, more sawing applications. Safe, accurate and durable. Cuts wood, metal, stone and compositions. Made in 7 powerful sizes.

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Residential Building Volume Reaches Five Year Peak

THE LARGEST volume of home building in the past five years was reported for the month of June—residential building, both new and alterations, amounted to \$73,604,600 in the 37 eastern states, according to F. W. Dodge Corporation. (See chart below.) This was almost 5 per cent better than the May 1936 figure of \$70,253,400, the previous high point of the remaining period and was about 48 per cent ahead of the total of \$49,832,600 reported for the 37 states during June, 1935.

For the first half of 1936 residential building of all descriptions, totaling \$334,844,600, made a gain of about 61 per cent over the total of \$208,173,600 for the corresponding period of 1935.

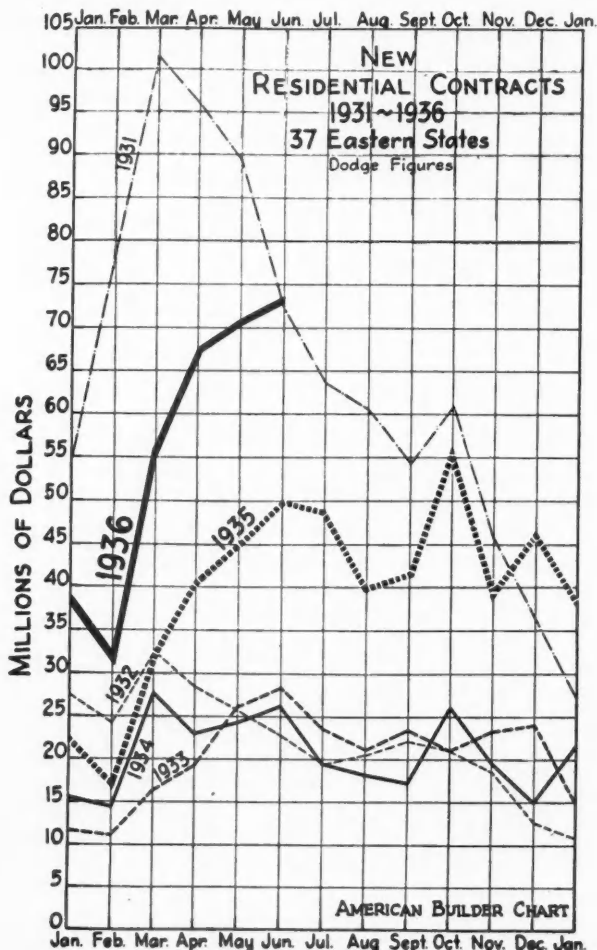
Improvement in home building operations was general throughout the country with every major geographic area sharing in the general advance.

Total construction of all descriptions reported in June for the 37 eastern states amounted to \$233,054,600 and compares with \$216,070,700 for May and \$148,005,200 for June of last year. The gain over the volume of the previous month was due to improvement in residential building and in civil engineering projects, chiefly bridges, highways, and dams. Non-residential building reported for June, amounting to \$79,078,900, was smaller than was shown for this class of construction in May, but was materially better than the total of \$59,035,800 for June, 1935.

	June 1936	June 1935	May 1936
37 Eastern States Residential	\$ 73,604,600	\$ 49,832,600	\$ 70,253,400
Non-Residential	79,078,900	59,035,800	82,251,700
Public Works and Utilities	80,371,100	39,136,800	63,565,600

Total\$233,054,600 \$148,005,200 \$216,070,700

The total volume of construction work started in the 37 eastern states during the first six months of 1936 amounted to \$1,237,731,000 as against only \$696,507,000 for the corresponding six months of 1935.



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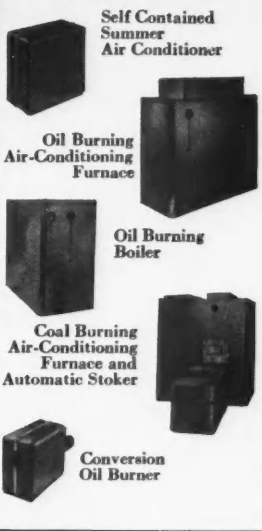


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For years, you have accepted Herman Nelson equipment as a standard of quality, efficiency and practicability. And you know, of course, that the skillful Herman Nelson methods of producing healthful air conditions are known and accepted throughout the world.

Naturally, the recent announcement of a complete line of Herman Nelson Automatic Heat and Air Conditioning equipment for the residential and small commercial market was welcomed by architects and builders everywhere. Now, regardless of the requirements of your clients, you can recommend Herman Nelson products of the same high quality and efficiency you have known for years. They are made available through carefully selected distributors.

PRODUCTS TO MEET EVERY INDIVIDUAL REQUIREMENT



We can't go wrong on this equipment . . . If Herman Nelson makes it we know it's right.



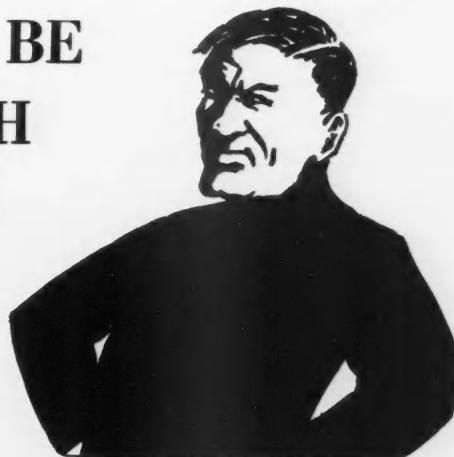
Feel free to consult the distributor nearest you or write us for complete information for your files.

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MUST BE TOUGH To Do The Job!



WHILE building paper is a small item, it is an important one. Consider the following facts about building paper:

1. It cannot be replaced without a major operation. Once in place it is there to stay.
2. It must protect the major part of the investment (as well as the occupants) against water, wind and dirt.
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4. It must protect the insulation against wind and water, which, if present, reduces the efficiency of the installation.

SISALKRAFT will do all of these jobs well, and at such a low cost that it should have a place in every building. The average cost throughout the United States is approximately \$1.10 per one hundred square feet.

We appreciate the endorsement given SISALKRAFT by contractors and would like to send you full information. The coupon is for your convenience.

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STOCKED BY 15,000 LUMBER DEALERS AND READILY AVAILABLE FOR EVERY JOB

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 Please send us samples, standard specifications and full information on SISALKRAFT.

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Stand up this Pictorial Color Chart



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Without cost or obligation you may borrow this Pictorial Color Chart to use in your own office or your client's home. And as you turn its pages, your prospects for new or remodeling work will appreciate the opportunity to select the color schemes from *actual painted* reproductions of charming interiors and attractive exteriors. This chart will help you get the final decision on color combinations and the signature on your contract.

Your local dealer in Lowe Brothers products will gladly loan you this Pictorial Color Chart and he will also supply you FREE, a valuable specification book. It will help you prepare accurate bids and save time, money and misunderstandings.

And when submitting your bids tell your prospects how they can secure maximum economy and enduring beauty with Lowe Brothers paints of known quality. Explain why they can depend on Lowe Brothers paint containing approximately 90% film-forming solids, as against many "cheap" paints—which often contain as little as 37% film-forming solids—the rest being water and other evaporating liquids.

You will find that your local dealer in Lowe Brothers products can help you close more contracts, and more profitable ones. See him today. The Lowe Brothers Company, Dayton, Ohio.

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PAINTS • VARNISHES
Quality Unsurpassed Since 1869

Affleck to Retire; Smith Named New Universal Atlas President

B. F. AFFLECK has announced his retirement effective Sept. 1 as president of the Universal Atlas Cement Co., subsidiary of the United States Steel Corp.; on the same day **Blaine G. Smith**, who recently resigned as president of Pennsylvania-Dixie Cement Corp., will assume the position vacated by Mr. Affleck.

In 1906 Mr. Affleck became general sales manager of Universal Atlas, and in that position he developed an outstanding sales organization; in 1915 he was elected president. During his service with the cement company its business grew from 30,000 barrels to 30,000,000 barrels. He was one of the early members of the Portland Cement Association, was largely instrumental in reorganizing it in 1916 along its present lines, following which he served as its president for five years.

Mr. Smith has been president of the Pennsylvania-Dixie Cement Corp. and subsidiaries for the last eight years, and for more than twenty years preceding was connected with the company he will now head. He is widely known in the cement industry and in the construction field, and has been active for many years in the Portland Cement Association, serving as president in 1925, 1926, 1929 and 1930.



Copyright by Harris & Ewing

B. G. Smith (left) and B. F. Affleck, new and retiring presidents, respectively, of the Universal Atlas Cement Company.

To Inspect 5,000,000 Heating Plants

AS A FEATURE of National Warm Air Heating & Air Conditioning Week Aug. 17 to 22, 15,000 dealers in co-operation with leading manufacturers of warm air furnaces and air conditioning equipment, have organized to check up and inspect over 5,000,000 heating plants throughout the United States.

The free check-up and inspection plan is to assure safer, more economical and better heating during the 1936-37 winter heating season. It is hoped the heating system operator will make a number of minor repairs, reducing fire hazard to the minimum and property loss to far less than recent years.

The inspection plan will also make it possible to show the home owner how his present heating system may be converted into a complete or partial air conditioning system.

Other activities scheduled during this week include complete educational activities on the part of the manufacturers, dealers and contractors, to clear up in the minds of the present and potential users of warm air heating and air conditioning, winter and summer, the confusing statements and claims being made in national advertising and sales literature by the many new interests entering the field. This educational plan covers the proper and true definition of air conditioning, its proper functions and its correct installation.

To Build FHA Low Cost Houses

TO DEMONSTRATE the possibilities of building low cost houses of the type proposed in the Federal Housing Administration's Technical Bulletin No. 4, the National Lumber Manufacturers Association has begun construction on a group of three



Ro-Way Doors especially designed for use in modernistic service station. Note the slender vertical lines. The horizontal lines are emphasized to conform to architect's requirements.

8 POINTS OF Extra Strength

— in **COMMERCIAL** and **INDUSTRIAL** USE
Ro-Way Doors are everywhere proving their greater stamina in hard service. Here are the "built-in reasons":

1. All joints are mortised and tenoned (not wood doweled.)
2. All commercial and industrial Ro-Way Doors are made from Sitka Spruce—1 1/4" thick.
3. Panels are made of three-ply laminated fir, joined with special waterproof casein glue.
4. All sections are rabbeted to provide a ship-lap weatherproof joint.
5. All rollers are STEEL with double metal tread and full ball-bearing.
6. Unusually large corner brackets, measuring 11 1/4" long by 4 1/2" wide are securely bolted to door.
7. Lock bars are burglar-proof, made from steel 3/4" thick by 3/4" wide.
8. Vertical and horizontal tracks are especially made of special steel and reinforced with angles.

RO-WAY
Electric Operators

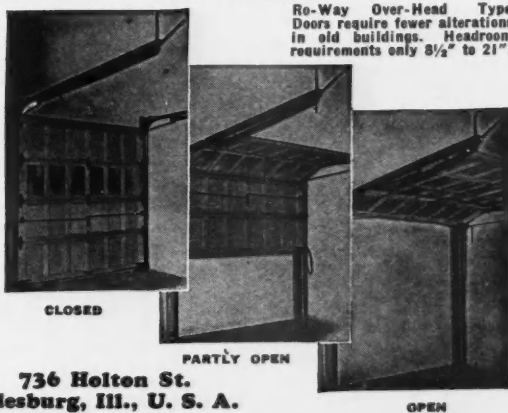
—are extremely sturdy and simple and very easy to install. On some types, as little as 3" of headroom is required. In addition, the Ro-Way Electric Operator can be installed complete at surprisingly low cost. If desired, a magnetic driveway switch can be used at very little extra cost. Write for special folder on Ro-Way Electric Operators.

RO-WAY Over-Head Type Doors

—are made in all Standard Sizes, as well as Special Sizes and Heavy Duty Doors with heavy tracking are available. Investigate the Ro-Way specially designed Torsion Spring High Lift Doors for use in public service stations. Also the Ro-Way low priced doors for residence garages.

Write for Ro-Way Door Folder and Price List

ROWE MFG. CO. 736 Holton St. Galesburg, Ill., U. S. A.



Ro-Way Over-Head Type Doors require fewer alterations in old buildings. Headroom requirements only 8 1/2" to 21".

\$685 without power



Does More Work at Less Cost

New Model "A" Planing Mill Special

Contains 8 full-sized machines, each independently operated. All bearings high-grade ball bearings. Sturdy, compact, with no excess weight. Does whole job from rough lumber to finest trim and finish at minimum cost. Send for catalog of individual and combination machines, priced as low as \$50.

THE PARKS WOODWORKING MACHINE CO.

Dept. BL-8 1524 Knowlton Street Cincinnati, Ohio

PARKS
WOODWORKING MACHINES

GET THIS FLOOR SANDER FREE FOR 5 DAYS TRIAL

The new IMPROVED SCHLUETER offers you the latest development in Floor Sanding Equipment at a price you can afford to pay.

It "roughs out" both old and new floors, leaving a ballroom finish in a minimum of time and with minimum effort. The high-speed sanding drum is covered with soft resilient rubber. The flexible, ball-bearing roller conforms automatically to all floor irregularities without the manipulation of levers by the operator or without extra weight over drum.

- Surfaces up to quarter-round
- Vacuum Dust Collector
- Ball-Bearing Equipped throughout
- Full V-Belt Drive
- 110 or 220 Volts, uses either—Merely throw switch



Write for full details on our 5-Day FREE TRIAL OFFER.

MAIL COUPON TODAY
LINCOLN-SCHLUETER FLOOR MACHINERY CO., 836
224 W. Grand Ave., Chicago, Ill.
Send full details on your 5-Day FREE TRIAL IMPROVED SCHLUETER Offer. Also tell me how I can own it. Interested in Time Payments.

NAME

ADDRESS

CITY..... STATE.....

MAKING AN Entrance



ENTRANCES are important to women. They strike the keynote of an occasion or a home. A successful entrance compels attention and admiration. It has beauty and distinction.

Doorways skillfully fashioned of one of the Western Pines are entrances worthy of beautiful women and fine homes. The Western Pines are an ideal choice for woodwork detail, possessing unique capacities for working, shaping, and finishing. These Western Pines are notable for their light color, dryness, high durability, and a remarkable freedom from splitting. They are especially valuable in those parts of the building exposed to weathering.

There is a grade of the Western Pines particularly adapted to any of the many uses for which a softwood is desirable.

Send for illustrated booklet, "Western Pines." Address Dept. B-7, Western Pine Association, Yeon Bldg., Portland, Oregon.

WESTERN PINES
Idaho White Pine • Ponderosa Pine • Sugar Pine

such houses in a Washington, D. C., suburb. It is expected that wide study of the undertaking will be made and that this unique project will be followed by like ones undertaken by other associations and individuals in all parts of the country with a view to making it plain to the public that it is perfectly feasible to build an excellent modern house for a small cost with a down payment of \$500 or \$600 and monthly payments of \$25.

The National Lumber Manufacturers Association is building three houses—the "B," "D" and "E" types of the FHA bulletin—at a cost and price of approximately \$3500, including 10 per cent cost-plus profit for the contractor. The price is the maximum in each class, as estimated by the FHA, including a basement. The price in a high cost region like the metropolitan district of Washington necessarily has to be in line with FHA's maximum estimate of \$3,000, without the lot, but with a basement allowance. The lots are valued at approximately \$500 and the base price of each house without basement and lot is \$2,000, according to FHA estimate.

House "D," as an example, is figured in detail as follows:

FHA cost with basement.....	\$2,500.00
NLMA contract with basement.....	2,488.00
Contractor's profit.....	248.00
Lot cost (base).....	525.00
Title, recording, deed, etc.....	40.00
Sod, walks, shrubbery (not included by FHA).....	50.00
Cost, complete house and lot.....	\$3,351.00
Available FHA loan.....	\$2,800.00
Minimum down payment.....	595.00
Financing cost (additional charge to buyer).....	125.00
Approximate monthly payment.....	25.00

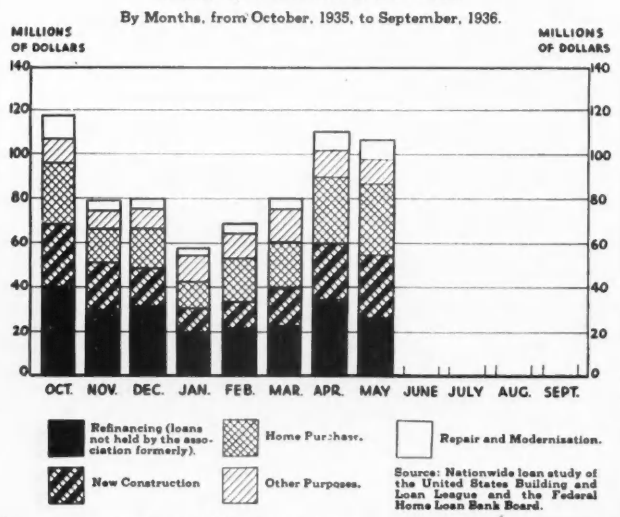
In the country, where the carpenter-contractor would absorb the profit margin in his carpenter wages, there would ordinarily be no contractor's profit allowance. In other localities and other conditions the profit margin of 10 per cent might be larger. Allowing, too, for wage differentials, the cost in a small city suburb or in a village would be about \$2500 plus lot.

B & L New Construction Loans Increase

SAVINGS, building and loan associations in May disbursed \$27,812,000 for new one-family and two-family homes, which represents new construction lending showing a 12 percent increase over April construction loans, and a 94 percent increase over May, 1935. (See chart below.)

This class of credit expansion constituted more than a fourth of all advances made by the associations throughout the country in May. A total of \$106,298,000 was disbursed for all types of loans, including those for substantial modernization and repair of homes, for purchase of existing properties, for refinancing of home owner indebtedness and other commitments in connection with home ownership. The loan total represented a 60 per cent increase in savings, building and loan activity over the like period of last year.

ESTIMATED VOLUME OF LOANS MADE BY SAVINGS AND LOAN ASSOCIATIONS, CO-OPERATIVE BANKS, AND HOMESTEAD ASSOCIATIONS IN THE UNITED STATES, CLASSIFIED BY TYPE





**NOW MY HOMES SELL
FASTER THAN EVER**

**VICTOR IN-BILT
VENTILATORS**



● Smart builders and contractors know that kitchens sell homes and that ventilators sell kitchens! The smartly styled Victor In-Bilt Ventilator has an "eye value" and sales power out of all proportion to its low installed cost. And, it's just as efficient as it is good looking—in fact, no other home ventilator made can approach it from a standpoint of mechanical excellence and worth while features. To mention a few, it has automatic control; one-shot lubrication; weather-tight shutters; rust-proofed finish; new super-quiet fan blades; rugged, durable motor; provision for open or concealed wiring, etc. Don't make the mistake of thinking that a ventilator is a ventilator—compare features and values. Write today for new catalog showing Victor's complete line.

Victor In-Bilt Construction makes installation easy and simple in walls of any type or thickness. Adjustable wall sleeve and shutter in one assembly—fan and grille in another.

DEALERS

The rapidly growing demand for ventilated kitchens creates a genuine opportunity for you to boost your sales volume and profits. Establish yourself now as ventilation headquarters in your community. Find out what Victor offers you in an outstanding product and merchandising help. Write today for full information.

VICTOR ELECTRIC PRODUCTS, INC.
713 Reading Road Cincinnati, Ohio

Kitchens SELL Homes—Ventilators SELL Kitchens

**Walker's "Practical"
Self Balancing Bookkeeping
and Income Tax Record
for Contractors**

A bound book for easy bookkeeping by small contractors. It contains ruled sheets for keeping detailed records of contracts, job cost accounts, sub-contract accounts, material dealers' accounts, monthly totals of all expenditures, job profits and losses, and a Complete Statement and Profit and Loss Sheet for making up an income tax return. It records everything the contractor needs to know about his business accounts.

200 pages, 12 x 9 1/2 inches, cloth, \$5.00

Money Back if Not Satisfied

**Book Service Department
American Builder and Building Age
30 Church St., New York, N. Y.**

Compare! IT WILL CONVINCE YOU

KINNEAR RoL-TOP DOOR
for home --- factory --- commercial building

Buy doors like you would a car. Compare RoL-TOP with any other door on the market. Check feature for feature . . . the design—the materials—the ease of erection—and the nation-wide organization back of it. You'll agree with thousands of others who claim RoL-TOP gives them more for their money. And too, you make real friends of your customers with RoL-TOP. They like the year-around easy, convenient upward operation, the freedom from repairs and the neat, life-long door service. It's also weathertight and burglar-proof. Built in any size or wood, and suited for electric operation. Let us give you the details to COMPARE.

**WRITE TODAY
FOR
QUOTATION
ON YOUR
NEEDS**

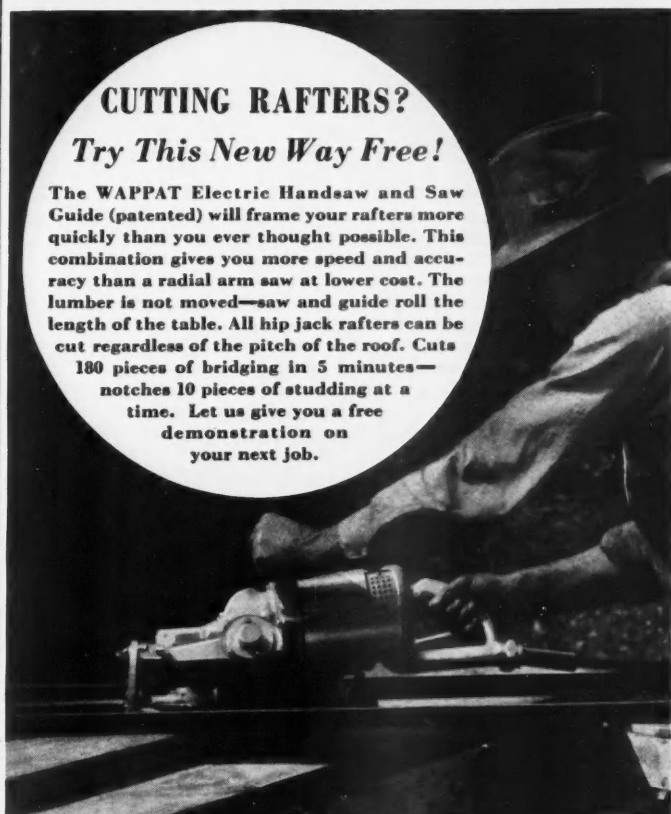
Offices and Agents in all Principal Cities

The KINNEAR MFG. CO.
1560-80 FIELDS AVE. COLUMBUS, OHIO

CUTTING RAFTERS?

Try This New Way Free!

The WAPPAT Electric Handsaw and Saw Guide (patented) will frame your rafters more quickly than you ever thought possible. This combination gives you more speed and accuracy than a radial arm saw at lower cost. The lumber is not moved—saw and guide roll the length of the table. All hip jack rafters can be cut regardless of the pitch of the roof. Cuts 180 pieces of bridging in 5 minutes— notches 10 pieces of studding at a time. Let us give you a free demonstration on your next job.



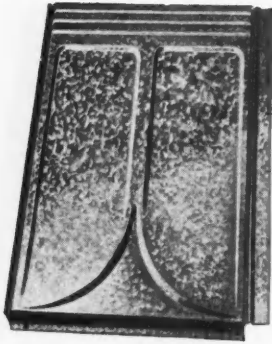
**WAPPAT
INCORPORATED**
Division of
Simonds Saw and Steel Co.
7531 Meade Street
Pittsburgh, Pa.

Please tell me more.

Name

Address

City



*Small Town
Builder Lays
3000 Squares
of Roofing in
4 Years Using*

EDWARDS METAL SHINGLES

THE outstanding home builder for the territory about Eaton, Ohio, writes: "We have placed sixty orders for Edwards Metal Shingles during the past four years—the best recommendation that could be given concerning the quality and workmanship of your products. They are easy to lay and the cost of application is comparatively small. Our orders have averaged 50 squares each and a single shipment usually covered three or four buildings."

*Write for Roofing Catalog 91
and money-saving prices.*

THE EDWARDS MANUFACTURING CO.

542-562 Eggleston Ave.

Cincinnati, Ohio



WILLIS SKYLIGHTS

have long been popular among contractors everywhere . . . because they're dependable. They're made in all styles and sizes, with and without ventilation. They're made only of the best materials, by workmen of long experience and are guaranteed not to leak. There's no "after grief" to eat up your profit on the installation.

Show your clients how they can save money and improve working conditions by *more daylight, more fresh air* . . . both in new building and remodeling operations.

WRITE FOR SKYLIGHT CATALOG
THE WILLIS MANUFACTURING CO.
Galesburg, Illinois

"Standard for almost Half a Century"



Wood Conversion Promotes; Expands Capacity

INTERESTING news of the month includes the announcement of the promotion of Paul A. Ward to the position of general sales manager of Wood Conversion Company, and of Dudley M. Pattie to the position of assistant sales manager.

Mr. Ward is the oldest member of the Wood Conversion Company sales organization in point of service, having been continuously associated with the company almost from the beginning, joining the sales force in 1923. His activities cover practically every field in the company's operations, with the result that he has built up a wide acquaintance with retailers from coast to coast.

D. M. Pattie, who becomes assistant sales manager, joined the Wood Conversion Company in 1924. He is particularly well schooled in distribution problems and has done much special work in the development and sale of interior decoration products.

The company also has announced that for the third time in the past two years Wood Conversion Company plans to increase the capacity of its insulating and interior finish plant. This last increase is approximately 50 per cent of present capacity and includes improvements in the pulp department as well. The machinery has been ordered and the necessary building construction started in order that the expansion in capacity can be taken advantage of by Nov. 1.



P. A. Ward (left)
and D. M. Pattie,
new sales executives
of Wood
Conversion Co.

National Electric Increases Line

THE National Electric Products Corporation of Pittsburgh has acquired the business of Raymond Roth Incorporated of New York City, manufacturers of Goeller Connectors, Charmond Terminal Blocks and other devices formerly made by the above concern. Manufacturing of these products will be continued under the National Electric banner, and all engineering, sales and production detail will be handled by Mr. Raymond Roth.

Inland Steel Purchases Milcor

MILCOR Steel Company, Milwaukee, Wis., became a completely owned subsidiary of Inland Steel Company, Chicago, effective July 1, 1936. All the outstanding stock of the Milcor Company was purchased by the Inland Company for 59,000 shares of the capital stock of Inland Steel Company.

No changes will be made in management or operations. The present officers will continue to operate the company as a unit, in line with previous practices.

Milcor Steel Company is a large manufacturer of sheet metal building products, with manufacturing plants at Milwaukee, Wis., and Canton, Ohio, and warehouses at Chicago, Kansas City, Mo., and La Crosse, Wis.



LOUIS KUEHN, president of the
Milcor Steel Company.



BUILDING CONTRACTOR

PAINTING CONTRACTOR

Agreed

MEDUSA-LITE

MAKES BEAUTIFUL WALLS AT LOWER COSTS

Beautiful because Medusa-Lite can be used on almost any surface in seven colors and white. It does not powder, peel or crack and is unaffected by acid, fumes and chemicals. One coat has remarkable hiding power. White has 90% reflective value and does not turn yellow.

Economical because one coat usually covers—can be sprayed or brushed—works fast and can be used over other paints, fresh plaster or concrete—touching up can be done immediately—dries in 30 to 40 minutes.

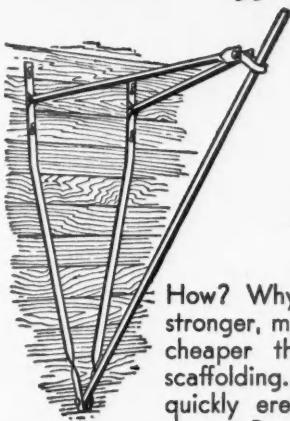


• Write today for descriptive literature on Medusa-Lite, the super flat wall finish.

MEDUSA
PRODUCTS CO.

Division of Medusa Portland Cement Company
1000 Midland Building • Cleveland, Ohio

Reliable Scaffold Brackets



SAVE
YOU
MONEY

How? Why? Because they are stronger, more dependable and cheaper than costly wooden scaffolding. Because they are quickly erected, quickly taken down. Because you can use them on wood or stucco. No wonder they soon pay for themselves. Thousands of builders have used them for years.

Let us prove their value. Send for catalog—then ask us to ship first pair C.O.D. for your inspection and trial.

Reliable Jack Company, 1401 West Second St., Dayton, Ohio

RELIABLE
SCAFFOLDING BRACKETS

MAZEMADE

Linclad

REG. U. S. PAT. OFF.

RUST PROOF SHINGLE NAILS

WHEN YOU LAY SHINGLES WITH MAZE MADE *Linclad* RUST PROOF NAILS YOU ARE ABLE TO GIVE YOUR CUSTOMERS A ROOF THAT WILL LAST TWICE AS LONG FOR THE COST OF ONE ORDINARY ROOF PLUS A VERY SLIGHT EXTRA.

FOR SALE BY
LUMBER DEALERS
MADE BY
W. H. MAZE CO.
PERU, ILLINOIS.

Send *Linclad* SHINGLE NAILS for FREE LEATHER SAMPLE KIT Show your customers the nails you recommend.

GENUINE ONLY
WHEN PACKED IN THESE HANDY 5 LB. CARTONS

"O.K." say MOTT BROS.

All ceilings in the six-room homes in Mott Bros. "Surrey Lane" Development at Hempstead, N. Y., were decorated with one coat of MURAL-TONE. And the new owners as well as builders are well-pleased. All the homes are occupied.

The speed, economy and coverage of MURAL-TONE appeal to the shrewd developer, contractor and master painter, and the velvet-flat beauty of the MURAL-TONE finish pleases tenants and prospective buyers.

The perfected blending of casein and lithopone is the secret of MURAL-TONE's success... plus powerful advertising every month in the right national magazines and newspapers.

Write today for "FACTS FOLDER," Color Chart, etc. Play the winner and make money. Please address THE MURALO Co., 568 Richmond Terrace, Staten Island, New York. Branches: Atlanta—Chicago—Boston—San Francisco.

Founded 1894

BETTER WHITE
BETTER LIGHT

mural-tone

The Money-Saving Paint in the Orange Can

- DRIES IN FORTY MINUTES
- ADHERES TO UNSEA-SONED PLASTER
- ONE COAT COVERS AND HIDES
- WILL NOT LIME-BURN
- CUTS COSTS 25%



ADVERTISED IN:
American Builder • American Paint & Oil Dealer • Factory • Architectural Forum • Pencil Points • National Painters Magazine • Sweet's Catalog

A MURALO PRODUCT

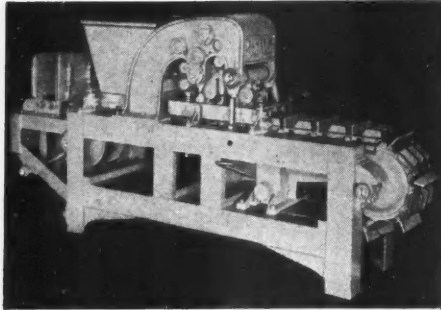


**TODAY'S GREATEST
MANUFACTURING
OPPORTUNITY**

**SUPPLY YOUR TERRITORY
with BRICK and DUNSTONE**

Recessed for Lighter Weight. Stronger Bond Big Savings in Construction

Actual operating DUNBRIK plants show remarkably low production costs. The performance of the Dunn Automatic Machine has astounded the trade and industry. Yet the investment required is only a fraction of what would be necessary in any other machine of equal capacity.



YOU DOMINATE THE MARKET. Your ability to make common and face brick in any color or texture, combined with your low cost, gives you the whiphand over competition. DUNSTONE, a double and triple unit permitting Hollow Ashlar Construction at cost of frame gives you another added advantage.

Get the facts about this Great opportunity for your territory. Learn about the records made by other manufacturers. Write for the DUNBRIK Manual. It may mean manufacturing independence for you.

W. E. DUNN MFG. CO., 453 West 23rd Street
HOLLAND, MICHIGAN



To help you *please* hard-to-please people

Patrician
HARDWARE

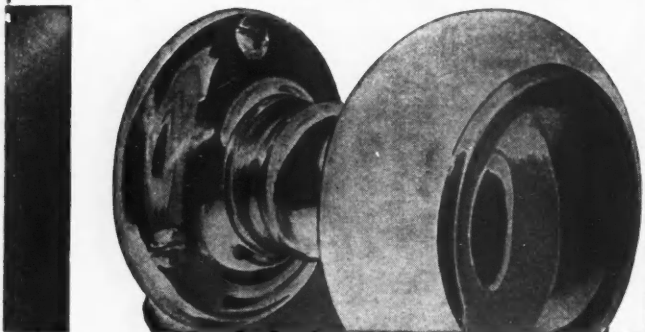
Everyone admires Patrician Hardware. Its new two-tone effects are the last word in smartness.

Capable of assembly in various color combinations, it permits a decorative motif true in every item.

Practical! Patrician does not fade or tarnish.

Exclusively by

LOCKWOOD HARDWARE MFG. CO.
DIVISION OF INDEPENDENT
LOCK COMPANY **FITCHBURG, MASS.**



**LETTERS from Readers
on All Subjects**

Facts, opinions and advice
welcomed here

Fairness More Than Courage

Portland, Ore.

To the Editor:

Enjoyed your editorial, "Co-operation and Building Costs." Glad to know that there is someone that has the courage to say that the contractors are not necessarily dishonest. I have found some of the architects so crooked that an honest contractor could not work with them.

J. N. JUSTUS.

Builds Playhouse

Franklin, Ind.

To the Editor:

I am sending a picture of the playhouse I built for my two daughters. The floor space is 8x6, with height enough for a



grown person to stand. It has French doors opening onto a terrace, hardwood floors and electric lights.

They enjoy it very much and thought you might be interested in it for your magazine.

DON L. EARLYWINE.

T. B. Earlywine & Son, Contractors and Builders.

Recognition for Estimators

New York City.

To the Editor:

The American Institute of Quantity Surveyors is this year celebrating the Tenth Anniversary of its organization, which took place at Chicago on June 7-8-9.

To commemorate this event, as well as to provide a means of certifying the character and calibre of surveys prepared by the members of this Institute, a stamp of the Institute seal will be issued this year, and hereafter yearly, in attractive colors, for the identification of genuine professional surveys.

A program for the establishment of stabilized employment and economic compensation to assure construction analysts, appraisers, estimators, and supervisors a minimum of \$3,000 yearly for 2000 hours, is now being formulated. Thus this Institute will provide the means of professional security against incompetent and unreliable practitioners by its certification of integrity and proficiency.

The scope of this organization is broad enough to include in its membership all those related to the economic phases of construction engineering.

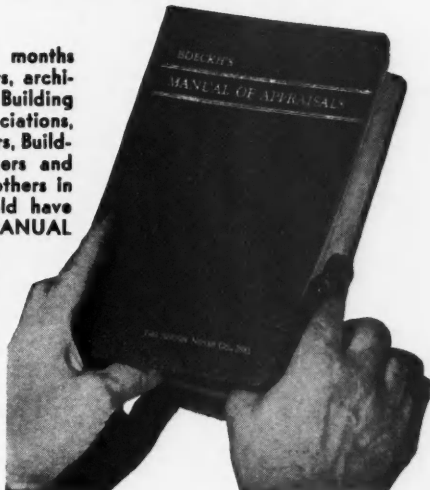
Invitation is cordially extended to individuals to join the ranks of the professional construction analysts, appraisers, estimators, and supervisors, during the campaign now in progress, in order

(Continued to page 98)

MAKE QUICK, CLOSE ESTIMATES

of Building Costs
with this new Manual

Within six months 2,500 contractors, architects, banks, Building and Loan Associations, HOLC appraisers, Building Commissioners and Assessors, and others in the building field have adopted the MANUAL and its method. This is a new SECOND EDITION.



With the new BOECKH MANUAL OF APPRAISALS you can in a few minutes estimate closely the cost of constructing a building. In an hour or so, you can make an accurate, detailed appraisal that will stand up when checked by the HOLC or FHA. Handy Work-Sheets insure complete inspection and appraisal.

The MANUAL'S cubic foot tables assure a precise cost figure for practically any building. They cover 97 specified and illustrated types of buildings, in 3,000 sizes. A simple system of credits and deductions corrects them for hundreds of variations in specifications.

It gives data and instructions necessary for appraising property on the basis of Market and Income Values, and an original scientific method for valuing land. Percentage figures from inexpensive new Index Control Number service quickly convert MANUAL base prices into present prices of materials and labor in your locality.

1935. 272 pages, illustrated, 5 1/2 x 8 1/2 inches, flexible Fabrikoid. MANUAL with pad of Work-Sheets, \$5.00. Money back if not satisfied.

Book Service Department

**AMERICAN BUILDER and
BUILDING AGE**

30 Church Street

New York

**CONTRACTORS!
ASK YOUR DEALER FOR THE
HUTTIG OF MUSCATINE**



GUARANTEED FOR 25 YEARS
AGAINST ROT AND DECAY

Comes Ready to Install—Fits Any Standard Frame
Saves You Money—Try It

SEE YOUR LOCAL LUMBER DEALER

This Tool DRILLS CONCRETE

**WODACK
"Do-All" Combination
Electric Hammer and Drill**



EVERY CONTRACTOR wants an electric hammer for drilling holes for expansion bolts. The "Do-All" drills concrete, brick, stone, metal and wood. Changed from hammer to drill in one minute. Two models. Cap. 1 1/8" and 1 3/8" in concrete, 3/8" in steel. Soon pays its cost. Earns extra profits. Helps get new business. You can't afford not to own one. Write for bulletin and prices.

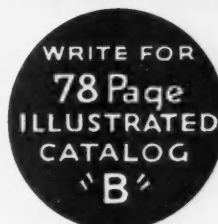
(See Page 43, February issue, American Builder)

WODACK ELECTRIC TOOL CORPORATION
4630 West Huron Street, Chicago, Illinois



DEALERS WANTED

SEVERAL VALUABLE FRANCHISES AVAILABLE



Increase profits by selling and installing PROTEX weatherstrips and calking. There's a PROTEX strip for every type of window or door—wood or steel. PROTEX strips are rust-proof, easy to install, and guaranteed a lifetime.

PROTEX EQUIPMENTS
ARE LABORATORY TESTED.
TEST LABORATORIES
UNIVERSITY OF WISCONSIN
R. W. HUNT CO.

PROTEX WEATHERSTRIP MFG. CO.
2306-8 West 69th Street, Chicago, Ill.

TRIMPAK

FINEST interior window and door trim. Shipped in all woods. Grade—clear (as Webster defines the word). Manufacture—perfect. Moisture content—8%. These three qualities are guaranteed. Shipped in cartons for your protection.

TRIMPAK CORPORATION

44 Whitehall Street

New York City

"TAKE ME WITH YOU TO THE JOB!"



This modern, ball-bearing money-maker does the work of FIVE ordinary machines—eighteen or more of your every-day jobs—and does them faster; better. Portable? You can take it to any job—even through a 24 inch opening—by simply removing five bolts.

Economical; efficient; invaluable for the Spring pick-up—sash work, sills, window frames, screens, and so on. Write today for the attractive price and full details. Use the 20th Century Woodworker for

Cross-cutting	Ripping	Routing	Jointing
Boring	Planing	Sanding	Dadoing
Mitering	Buffing	Flowing	Rabbeting
Matching	Moulding	Grinding	Tenoning

AMERICAN SAW MILL MACHINERY CO.
61 Main Street Hackettstown, N. J.

THE 20th CENTURY WOODWORKER

AIR CONDITIONING Demands PEERLESS FIREPLACE DAMPERS

As an aid to the efficient operation of air conditioning installations, natural wood-burning fireplaces must be equipped with the proper dampers. Peerless Dome Dampers give complete satisfaction. They seal the chimney flue when the fireplace is not in use. No heat loss—No back drafts. A proper burning fireplace guaranteed. Built for a lifetime of service. All standard sizes. Three models to choose from. Rotary Control—Poker Control—Chain Control—Write for prices and details.

Other Peerless Products
Fireplace fixtures—ash dumps—coal windows—ash pit doors—Garbage receivers and hearth fire gas heaters.

PEERLESS MANUFACTURING CORP.
1400 W. Ormsby Ave. Louisville, Ky.

Pat. No. 1,891,265



SAVE 25c to 30c

Per frame — with HONEYCUTT Sash Cord SADDLE

40% less weight. Saves labor—merely bore 1" hole and drive Saddle in. Requires less stock of window weights.

Kiln dried, chemically treated, full 1" birch or beech. Tested—tried and accepted in years of actual usage.

Cannot rust or stick window. Noiseless. Will never jump pulley, fray nor wear out sash cord. Positive balance for window.

FREE—Write today for Free Sample and Illustrated Literature.

Mfgd. by **Honeycutt Mfg. Co., 2715 Oak St., Kansas City, Mo.**
Peterson Lumber & Finance Co., San Diego, Calif., West Coast Distributors
Biddle Purchasing Co., 107 Chambers St., New York City, N. Y.
Eastern Distributors

Letters Dept.

(Continued from page 96)

that they may benefit by the prosperity that is certain to follow economic adjustments in the construction industry.
AMERICAN INSTITUTE OF QUANTITY SURVEYORS,
By G. Szmak, Acting Secretary.

Now "Building Headquarters"

Reading, Mass.

To the Editor:

Enclosed you will find a rather lengthy list of catalogs which we desire.

For the past thirty years we have been conducting a contracting and jobbing business with a small woodworking shop making no effort at sales but simply taking things as they came. Recently we have enlarged our office in order to install a display room and Real Estate Department.

We have on display at present several of the products which are included in this list. It is our purpose to sell the material and our services rather than services alone as in the past; also to make our office headquarters for anything in the real estate field.

E. B. CURRELL,
E. B. Currell & Son, Builders.

Wants Portable Sandwich Shop Plans

Flint, Mich.

To the Editor:

Please inform me where I can get plans and ideas of small buildings for chain sandwich shops that can be removed from one location to another that can be put on leased ground.

HENRY MILLER.

Wants Modern Grocery Shelving Details

London, Ont.

To the Editor:

I have been reading some of your very helpful magazines lately and have found them a great help in the building trade.

I have an order for furnishing a modern grocery store and cannot find any designs and material on modern grocery equipment. I was wondering if you have any such designs or literature along this line, either separate or in one of your books, that I might secure. If so, would you advise me about it?

GORDON F. CLEMENTS.

How to Enlarge Platform Scale

Springfield, Mo.

To the Editor:

I note in the June issue that you invite scale ideas.

We have an old Howe Scale and we lengthened it by enlarging the pit, then put new footings under each bearing, then replaced the old short "I" beams with longer "I" beams, then a new oak plank platform. As this change increases the weight and also we expect to weigh heavier loads, it is necessary to study the scale construction to make sure that the bearings are heavy enough. A ball bearing type is strong enough to stand a 100 per cent overload. Since our beam registered only 12,000 pounds, we used some old weights we had. For instance, if the weight reads 100, place it on the regular weight hook, then run a regular load, which can be read on the regular beam; then weigh the same load without the weight and the difference equals the new stamping or label for the weight.

If new "I" beams are not available, then saw the old ones through the center, then take some good dry 2-inch oak planks, hew them to fit snug into each side of the "I" beam, drill holes clear through and bolt them solid (paint them well before bolting). If a 4 foot extension is required, then use 12-foot planks. An extension of this kind won't tilt as the truck rolls off and is also stiff enough to weigh correctly on four points.

ARK-O-MO FUEL CO.

MAKE BIG MONEY IN FLOOR SANDING

Yes, we say **BIG money!**—Here's a real opportunity for you to get into something for yourself—be a floor sander. Men who have been in the game less than six months have more work than they know what to do with. The American method of floor sanding is the only real way to do the job—because American sanding machines have a real reputation for making the biggest profits.

BE YOUR OWN BOSS
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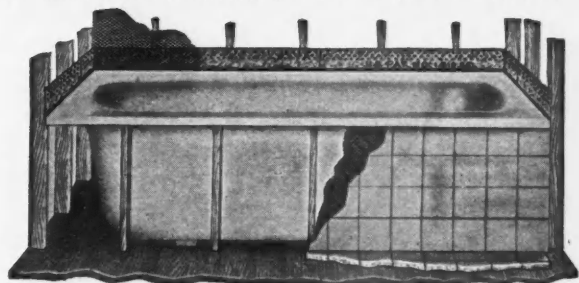
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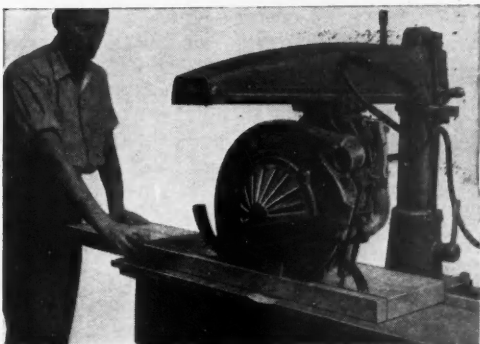
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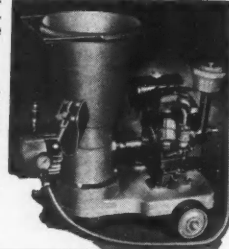
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Steel Joists for Floors and Roofs

(Continued from page 62)

as floor construction in light occupancy buildings, including not only residences but also apartment houses, churches, hospitals, asylums and similar institutions, hotels, schools, colleges and academies, stores and office buildings. Steel joists are adaptable as roof construction in all types of buildings. Since 1928 many millions of square feet of steel joist construction have been installed in such buildings.

Not only can steel joists be effectively used where joists of other types might suffice but because of their fire resistive qualities in combination with fireproofing materials, they provide a satisfactory and economical construction in many situations where building laws require fire resistive structures. In this connection it should also be noted that due to the light weight of steel joist floors and roofs, substantial savings may be effected in the supporting beams, girders, columns and footings.

Some of the advantages of open web steel joists complying with the standards of the Steel Joist Institute can be summarized as follows:

1. They are completely standardized as to lengths, depths and carrying capacities and may be readily designated by the user upon reference to the standard load table.
2. They are completely fabricated in the shop. The bearing ends are made $2\frac{1}{2}$ " deep in all cases. The point of support is thereby raised above the center of gravity of the truss. Joists will, therefore, remain upright and not overturn when set in place.
3. When joists rest on brick walls, the $2\frac{1}{2}$ " depth of bearing ends fit between two successive mortar joints, causing no interference with the brick layout.
4. When the supports are at equal levels, the tops of all joists, regardless of depth of joist, lie in the same horizontal plane.
5. Steel joists are made in standard depths of 8", 10", 12", 14" and 16" and in lengths to accommodate all spans up to 32'-0". They reach the job site tagged and ready for immediate placing, needing only to be hoisted into their proper position and attached to supporting members.
6. Each joist is a complete, stable and independent unit. As many portions of the floors as desired may be erected simultaneously.
7. As soon as joists are erected and bridged, a working platform is available for the immediate follow-up of allied trades.
8. The open webs in the joists permit the ready concealment of pipes and electric conduits within the depth of floor, thereby making such installations extremely economical.

Steel joist construction has expanded its field of usefulness in many directions. It has certain definite advantages as herein outlined and has established a major place for itself in the building industry.

Equipment Speeds Modernizing

(Continued from page 59)

The original kitchens, being too large and poorly planned, were cut down in size and planned for a maximum amount of efficient service to the tenant. This included the installation of all-steel cabinets, electric refrigeration, cabinet type sinks, fully equipped gas stoves, white canvased ceilings and walls, and Armstrong's inlaid linoleum on the floors. The cabinets were built according to specifications which call for reinforced steel construction throughout. These received three coats of Du Pont's Du Lux throughout. Convenience outlets placed at all points of vantage aid in completing a well planned kitchen.

Excess hall space was carefully eliminated and then added to the various rooms wherever possible. This alteration showed quite plainly, especially in the living rooms which in most cases had a hall adjoining them. The change added considerable space to the original living room, and with the addition of arched doorways, recessed

(Continued to page 104)

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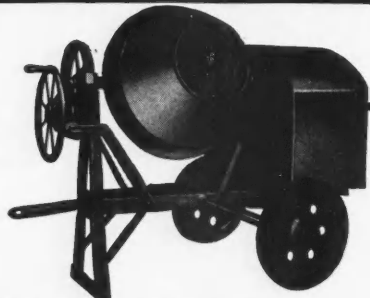
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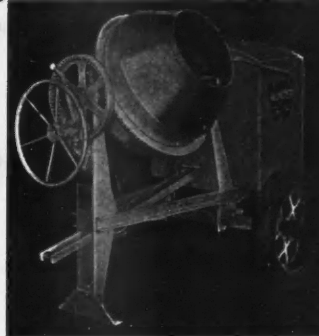
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The publications listed below may be obtained without charge either by using the coupon, listing the numbers desired and mailing to American Builder, 105 West Adams Street, Chicago, or by applying on your business stationery to the manufacturers direct, in which case kindly mention this publication. Either the titles or the numbers may be used in ordering. This list is an editorial feature for convenience of our readers.

OF SPECIAL INTEREST

400—Weatherstrip Opportunities—A weatherstripper's sales kit is offered to ambitious carpenters and builders who want to push weatherstrip selling and installing as a business.—ALLMETAL WEATHERSTRIP CO., Chicago, Ill.

401—Concrete Houses—"Designed for Concrete" is a new 48-page portfolio presenting 55 designs for firesafe concrete homes from the 1936 "Pencil Points" architectural competition. Beautifully illustrated with photographs of concrete houses, it contains information regarding accepted methods of concrete house construction, a variety of concrete floor finishes, wall textures, and a brief discussion of the economy of firesafe construction.—PORTLAND CEMENT ASSN., 33 W. Grand Ave., Chicago, Ill.

402—Home Decorator's Handbook—"Designs for Living" is a new 40-page full color illustrated book of designs from the Studio of Creative Design of the Pittsburgh Plate Glass Co. Each room of the house is analyzed, color schemes suggested, restyling plans outlined and the modern uses of glass, mirrors and structural glass walls fully discussed. The last chapter takes up Pittsburgh paints, varnish and glass products in condensed reference style.—THE PITTSBURGH PLATE GLASS CO., Pittsburgh, Pa.

403—Homes of Steel—A new design broadside presents perspectives and floor plans of 24 low cost small houses, together with such popular small commercial buildings as auto and greasing service, small factory buildings, country schools and private garages. A detailed description and material specifications of standard "Steelox" homes are included.—STEEL BUILDINGS, Inc., Middletown, Ohio.

404—Laying Floors Over Concrete—The "Bull Dog" theory and process for laying wood floors over concrete are fully explained with details in a new series of data sheets issued by THE BULL DOG FLOOR CLIP CO., Winterset, Iowa.

405—How to Lay Dust—A new booklet, "The Clean, Easy, Inexpensive Way to End Dust!" describes the use of Solvay Calcium Chloride as a dust layer and surface binder for roads, drives, walks, tennis courts, school yards, playgrounds, lumber yards, roadside stands, parking lots, etc.—SOLVAY SALES CORP., 40 Rector St., New York City.

406—Dust Control—"Dust Control and Road Soil Stabilization with Columbia Calcium Chloride" is an interesting, well

illustrated pamphlet from the Pittsburgh Plate Glass Co.'s subsidiary, THE COLUMBIA ALKALI CORP., Barberton, Ohio.

BUILDING MATERIALS

407—Cedar Shingle Handbook—"Certificate Handbook of Red Cedar Shingles" is such an important compilation of information for carpenters, contractors, architects, dealers, that the manager of the Red Cedar Shingle Bureau has felt justified in putting a 50 cent price on it. However, copies will be gladly mailed without charge to any interested American Builder reader. This is a book of 84 pages, thoroughly indexed, and packed full of reliable shingle and shingling information. The illustrated section having to do with hips, valleys and flashings with recommended practices for applying Certigrade shingles, together with methods of ornamental shingling for both side wall and roof work, will be particularly valuable to the younger craftsmen. How to figure and estimate roofings is a valuable chapter.—RED CEDAR SHINGLE BUREAU, White Bldg., Seattle, Wash.

408—Azrock Carpet Tile—"Azrock Installations Cover Forty States" is the challenging title of a beautifully illustrated folder showing 25 examples of rock asphalt tiling in homes, offices and commercial buildings.—UVALDE ROCK ASPHALT CO., San Antonio, Tex.

409—Mural-tone—"The Money-Saving Paint in the Orange Can" is described in a new 6-page folder from THE MURALO COMPANY, Inc., Staten Island, N. Y.

410—Gypsteel Plank—A new 30-page indexed handbook, "Gypsteel Plank and Other Gypsteel Products," is offered. Gypsteel Plank is a factory-cast gypsum product that is receiving wide acceptance in the building field for the roofs of industrial buildings and for the floors and roofs of buildings of human occupancy, like residences, apartments, hotels, schools, theatres, stores, etc. Complete details of construction, method of installation and specification data are included.—STRUCTURAL GYPSUM DIV., American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, New York City.

411—Wiring Data Book—"A Handbook of Wires and Cables" presents 16 pages of condensed tabulated information on all types of Anaconda insulated electrical cords and cables with recommendations as to sizes and styles to use for every type of structure including apartments, residences, banks, hospitals, auditoriums, etc.—ANACONDA WIRE AND CABLE CO., 25 Broadway, New York City.

412—Reinforcing Specialties—"A Handbook on Building Accessories" is a 24-page catalog on reinforced concrete, metal lath and road building specialties, such as joist bar spacers, slab spacers, Hi Chairs, column reinforcements, furring rods, ceiling inserts, wall ties, anchor slots, etc. This is catalog No. 236.—UNION STEEL PRODUCTS CO., Albion, Mich.

413—E-Z All-Metal Window Screens—Complete information regarding these permanent, easily installed and easily operated window screens for homes, country clubs, apartments, hotels, etc., are presented by the manufacturer. Storm windows to operate in the same steel guide rails are also furnished with complete installation information.—SCHRAUGER & JOHNSON CO., Atlantic, Iowa.

414—Double-Hung Windows in Bronze or Aluminum—A 4-page data sheet gives details of construction, tabulation of stock sizes and specification data on the new self-sealing double-hung bronze or aluminum windows, manufactured by GENERAL BRONZE CORP., Long Island City, N.Y.

415—Best Locks and Builders Hardware—A new 54-page loose-leaf catalog presents the complete line of tubular locks, cabinet locks, mortise lock sets and padlocks offered by the BEST UNIVERSAL LOCK CO., Seattle, Wash.

416—Corbin-Newton Checking Pivots—A new 24-page illustrated catalog of Newton checking pivot or spring hinge for single acting stall doors, railing gates, etc., showing details of construction and of operation with installation details, is offered by P. & F. CORBIN, New Britain, Conn.

417—Upward-Acting Garage Door Hardware—A new folder gives all details of the simple tip-up door—economical and satisfactory—developed by the MAJESTIC CO., Huntington, Ind.

418—Garage Hardware—How to rehang old garage doors, changing from sagging hinges to the handy counter-balanced tip-up style, is illustrated in a new circular from WAGNER MFG. CO., Cedar Falls, Iowa.

419—Kiomac Doors—Kalamein doors and mouldings, together with general information required when ordering Kalamein material, are presented in a new loose-leaf catalog, including fire doors, from KIROMAC MANUFACTURING CO., Richmond, Ind.

420—**Richmond Fyrgard Products**—A 16-page illustrated catalog presents information on metal door frames, Kalamein doors, frames and trim, hollow metal doors, freight elevator doors, dumb waiter enclosures, fire doors and hardware, swing-fold and bi-fold doors, electric door operators and copper, bronze, aluminum and stainless steel Kalamein products offered by THE RICHMOND FIREPROOF DOOR CO., Richmond, Ind.

HOME EQUIPMENT

421—**Lighting Fixtures**—A very unusual loose-leaf portfolio of lighting fixtures in the modern style is offered architects and builders. Designs here are suitable for fine residential work, low cost homes and model homes. The designs included are the Virginia, Contemporary and Monroe. Price list is included.—THE MILLER CO., Meriden, Conn.

422—**Emerson Fans**—The Emerson 1936 line of ceiling fans and of air circulators is presented in two new catalogs of 16 and 8 pages, respectively. Full specification data presented.—THE EMERSON ELECTRIC MFG. CO., St. Louis, Mo.

423—**Signal Electric Door Bells and Buzzers**—Every modern house needs a door bell transformer and two or more door bells or buzzers. A handy data sheet on these necessary accessories has been prepared by the SIGNAL ELECTRIC MFG. CO., Menominee, Mich.

424—**Complete Refrigeration Made to Measure**—McCray refrigerators are well known to architects and builders. A new 8-page catalog describes the McCray service of custom-built electrical refrigerators for large homes, clubs, etc. Every refrigerator installation designed to meet exact specifications.—MCCRAY REFRIGERATOR SALES CORP., Kendallville, Ind.

425—**Water Service**—Hoosier water service equipment to provide running water for every farm and home purpose, including pumps for shallow wells, deep wells, electric motor or gasoline power driven, is presented in a new 36-page catalog which shows all mechanical details, sizes, prices, etc.—FLINT & WALLING MFG. CO., Kendallville, Ind.

426—**Servewell Automatic Brake Dumbwaiter**—Bulletin No. 60 has been issued giving range of sizes and prices and all needed information on this improved moderate cost dumbwaiter. Useful for residences, apartments, stores, banks, restaurants, offices, libraries, etc.—SIDNEY ELEVATOR MFG. CO., Sidney, Ohio.

427—**New Kohler Catalog**—“Planned Plumbing and Heating for Better Living” is a new 16-page catalog in full color illustrating Kohler plumbing fixtures, Kohler boilers, convectors and radiators. Attractive color schemes and layouts for bathrooms and kitchens give this book extra value.—KOHLER CO., Kohler, Wis.

428—**Steel Kitchen Cabinets**—“The Heart of the Home” is the title of a new 16-page catalog featuring the planning of the modern kitchen with cases and cabinets of Elgin steel. Many up-to-date ideas here.—ELGIN STOVE AND OVEN CO., Elgin, Ill.

429—**Bathe-Rite Shower Stalls**—A new catalog, in two colors, presents the complete line of shower cabinets from low priced units to the finest cabinets made with aluminum walls and vitreous or terrazzo receptor. Eight complete models are shown with all equipment and accessories illustrated. Roughing in and size details for the use of the architect and plumber are shown.—MILWAUKEE STAMPING CO., Milwaukee, Wis.

HEATING AND AIR CONDITIONING

430—**Rybolt Air Conditioned Heating**—a new folder presents the Rybolt air conditioned unit with blower cabinet, a compact, low cost, modern heating plant.—RYBOLT HEATER CO., Ashland, Ohio.

431—**Superfex Air Conditioning Heating Plant**—An attractive new line of catalogs and wall hangers in full color, carry full information regarding the oil burning Superfex air conditioning systems which assure automatically controlled temperature and humidity.

Latest information also available on oil burning refrigerators and oil burning kitchen ranges perfected by the Superfex people.—PERFECTION STOVE CO., Cleveland, Ohio.

432—**Oil-O-Matic Heating**—“How to Add a Room to Your Home” is a very interestingly written booklet with color illustrations showing how basements have been remodeled to provide recreation rooms, home workshops and other usable space after the Oil-O-Matic burner has been installed.—WILLIAMS OIL-O-MATIC CORP., Bloomington, Ill.

433—**Capitol Oil Burning Boiler**—“U.S.-20” is a new model oil burning boiler developed as the result of fifty years’ experience in sound engineering, accurate designing and careful manufacturing of boilers. Full details are presented in a new 4-page circular.—UNITED STATES RADIATOR CORP., Detroit, Mich.

434—**Gas Fired Boilers**—“When Magic Heats Your Home” is an attractive little booklet featuring the Empire type gas burners of beauty and efficiency developed by AMERICAN GAS PRODUCTS CORP., 40 W. 40th St., New York City.

435—**Propellair Attic Fans**—“Put Your Home ‘On Ice’ This Summer” is the challenging title of a 4-page circular on the cooling effects of a properly installed attic fan ventilating system. How to install a Propellair attic fan is illustrated and described.—PROPELLAIR, INC., Springfield, Ohio.

436—**Autovent Blowers**—A loose-leaf catalog containing numerous data tabulations presents the complete Autovent line of Uniblade motor driven blowers for ventilating and air conditioning systems. Autovent unit heaters are also included.—AUTOVENT FAN & BLOWER CO., 1805 N. Kostner Ave., Chicago, Ill.

437—**B & G Indirect Water Heaters**—“Why Pay So Much for Domestic Hot Water,” a folder explaining the operation of the B & G Indirect Water Heater and the savings possible with its installation.—BELL & GOSSETT CO., 3000 Wallace St., Chicago, Ill.

CONTRACTORS' EQUIPMENT

438—**Power King Electric Tools**—Handy catalog illustrating an extensive line of portable electric tools, including drills, hand saws and sanders, with suitable accessories for shop use as well as out on the job.—PORTABLE POWER TOOL CORP., Warsaw, Ind.

439—**Bearcat Contractors' Portable Saw Rigs**—A 4-page circular presents the Bearcat Model C-O and the Bearcat “Junior” portable saw rigs for contractors and builders.—THE PAXSON CO., Dowagiac, Mich.

440—**Electric Carpenter**—Well illustrated folder presents complete information on the Electric Carpenter, “7 Machines in One,” and its utility for carpenters, cabinet makers, upholsterers, home craftsmen, schools and institutions.—CARPENTERS MACHINERY CO., Inc., 250 N. 11th St., Philadelphia, Pa.

American Builder,
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Chicago, Ill.

(August, 1936)

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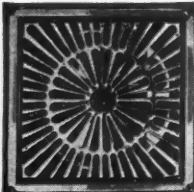
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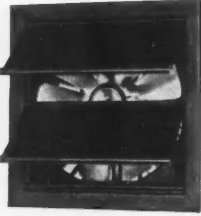
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Write for catalog



RANSOME
Concrete Machinery Co. Dunellen, N. J.

Apartment Modernizing

(Continued from page 100)

niches, canvased walls, radio outlets and lighting equipment lent an air of spaciousness and balanced proportion to the room. In tearing out some of the partitions, a very interesting discovery was made—it was found that when the building was erected in 1893, the party walls were packed with rock wool to reduce sound transmission.

In some cases, in order to obtain a better plan, it was necessary to change the arrangement of various rooms. Small bedrooms with equally small corner closets were transformed into cozy dinettes and the closets fitted up for dish cupboards in the Colonial design. Canvased walls, convenience outlets and proper illumination with direct yet veiled connection with the kitchen make this a most efficient and attractive combination. Owing to the wide use of wardrobes in bedrooms rather than closets at the time the building was erected, it was found necessary to provide adequate closet space with sufficient shelf room. All closets were equipped with ceiling lights. Wallpaper appropriate to the particular condition was used in the bedrooms. Cheerful, light shades of enamel, paper and Sanitas were used in all cases. The kitchens and baths were finished in pure white.

A new tar and gravel roof of three-ply felt was applied, the skylight entirely overhauled and the chimneys, copings, etc., tuck pointed. The old passenger elevator machinery, a liability due to excess cost of operation and maintenance, will be replaced by a traction type machine with automatic controls.

Storage rooms of adequate size will be provided for each apartment. A thoroughly equipped laundry with dryers, stationary tubs, stoves, electrical conveniences and storage space for several washing machines will be installed.

Complete rehabilitation costs are placed at \$65,000; this includes improvements in the engine room, lobby and apartments equipped with gas stoves and electric refrigeration. It is estimated that the building will have a gross income of \$25,000 annually, and operating expenses will be \$12,500. Deducting 14 per cent for bad debts and vacancies, the building will net \$9,500 annually. The figures are conservative as they represent an average apartment rental of less than \$40 a month; increasing rents will eventually make the total income even more attractive.

Healthful Comfort Cooling Not An Extravagance

(Continued from page 70)

retort, as they like to call it, and the provision of tuyeres or openings for air within the retort is one of the greatest factors in complete burning of coal. The gases as well as the carbon of the coal have their chance at combustion.

The pulley and belt from the motor shaft power the worm in the transmission below which drives the worm wheel of the coal-feed screw. The clutch on the face of the transmission case engages this screw.

So long as present-day home building, led by the generous policies of the Federal Housing Administration, is toward substantial, comfortable, and convenient housing, it is well to remember that complete equipment is essential, but it is further necessary to remember that reasonable first costs and reasonable operating costs in cooling and heating equipment are obtainable through proper building and proper insulation. Minimum loads on this equipment are assured when the house is protected as it should be from heat and cold. Do we not sometimes forget the "cold as a barn"?