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AMERICAN BUILDER

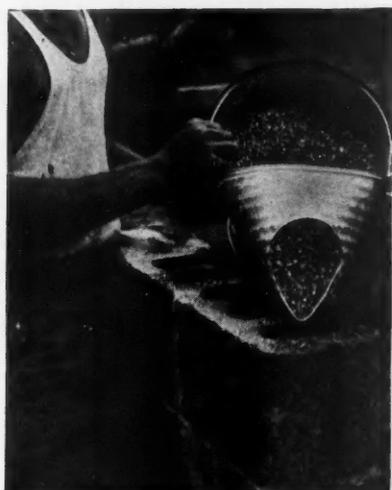
and Building Age

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

SEPTEMBER, 1936

58th Year

Vol. 58—No. 9



CONCRETE block holes were filled with insulation in Indianapolis Star Competition Home; W. R. Miller and R. E. Ratliff, builders.

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

AMERICAN BUILDER PUBLISHING CORPORATION

105 West Adams Street
Chicago, Ill.

NEW YORK
30 Church Street

ANN ARBOR, MICH.
1930 Norway Rd.

WASHINGTON, D. C.
National Press Building

SEATTLE
1038 Henry Bldg.

SAN FRANCISCO
111 Sutter St.

LOS ANGELES
Union Bank Bldg.



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Subscription price in the United States and Possessions and Canada, 1 year, \$2.00, 2 years, \$3.00, 3 years, \$4.00; foreign countries, 1 year, \$4.00, 2 years, \$7.00, 3 years, \$10.00. Single copies, 25 cents each. Address H. E. McCandless, Circulation Manager, 30 Church Street, New York, N. Y.

Member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulation (A. B. C.)

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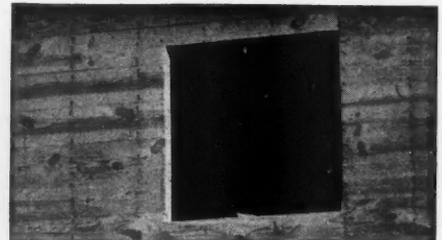
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NO GOVERNMENT SUBSIDIES FOR HOUSING

ONE of the inexplicable characteristics of the average "economic man" is his incurable disposition to believe that when business is good it will stay good, and that when it is bad it will stay bad.

Nine years ago most of us had a prosperity complex. Now most of us have a depression complex. Then most of us believed hard times had been abolished and the "New Era" would last forever. Now most of us believe that private business never can fully revive and greatly expand, and that the government must continue huge expenditures for unemployment, relief and subsidies.

THE American Federation of Labor has issued an estimate that 1,320,000 new homes should be built each year until 1945 to remedy and prevent "a very serious housing shortage." But, it concludes, private industry could provide only 880,000 new homes annually at a profit, if workers' incomes reached the 1929 level. "Are the other families to live in slums," it asks, "or shall the government make decent homes possible for them?" This is a bid for huge government subsidies to aid building of the additional 440,000 homes annually which it is estimated will be needed.

No better illustration could be afforded of a depression complex.

We had long depressions in the 70s and the 90s. They were followed by decades of prosperity in which the volume of business and workers' average incomes became much larger than ever before. Why assume that we will not, as after previous depressions, make complete recovery, followed by advance in the total volume of business and in workers' average incomes to levels much higher than in 1929? And if workers do get larger incomes than ever before, why will they not be able to pay private industry enough to enable it to provide them with ample good housing?

IF PRIVATE industry is unable to provide enough good housing, it will be because of policies that prevent reasonable profits being derived from erecting and owning buildings. The present government policy that most threatens profits is *exorbitant government spending* leading directly toward *exorbitant taxation*.

The money for government subsidizing of a large amount of housing construction would have to be raised by increased taxation, including *increased taxation of private construction and ownership of housing that was not subsidized*. Government competition inevitably would increase in other ways the cost of private construction and ownership of homes. This would either curtail the profits and volume of *unsubsidized* construction and ownership of homes, or increase costs of owning and renting them, *and thereby force all who lived in them to help pay the rents of those who lived in government subsidized buildings*.

Private industry will provide enough good, cheap housing if afforded opportunity and incentive. Advocacy of government subsidization of housing construction or of any other kind of government use of taxes in competition with private industry is the menacing expression of a depression and socialistic complex. *The more successful it is the more it will curtail the vast increase of building and employment by private industry that is essential to full recovery and prosperity.*

Samuel O. Drumm

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CEMENTS

AMERICAN BUILDER AND BUILDING AGE

Stop This Competition— Work Relief vs. Private Employment

A CRITICAL situation affecting the building industry is coming to light in many parts of the country: building labor engaged on WPA projects is not willing to quit and go to work for private employers. The certainty of work relief, even at the current low "security" wage, is evidently more attractive to many building mechanics than the higher earnings, with anxiety over how long the work will last, which characterize private building employment.

Reports from 28 states collected by local FHA offices tell of growing shortages of building labor and of increasing difficulty, experienced by building contractors in laying out an expanding program of home building to meet today's needs, because of the lack of an adequate supply of skilled, enterprising workmen ready to enter private employment.

The American Federation of Labor has issued a new survey in which home building is again hailed as the big recovery industry destined to re-employ some five million men on a program of a million and a quarter new homes annually for the next ten years. However, it seems plain that no such program can make progress so long as our present federal policy of relief makes it easier for labor to drift along as wards of the government than to strike out individually for better earnings with private contractors.

Recovery Policies at Cross-Purposes

Here is witnessed a direct conflict of policies within the present federal administration. FHA is working consistently to encourage private home building through the use of private capital and the normal employment of building labor on homes and housing built without subsidy. Private contractors are paying good wages; and, although the volume of work is steadily increasing, they are not able to *guarantee* their men permanent employment. WPA is also engaged in building and construction projects of many kinds, projects set up primarily to furnish work for unemployed building labor. It is operating on public funds and without much regard either for the productive efficiency of the workmen or for the usefulness of the completed projects.

President Roosevelt has stated that the purpose of the federal relief work program was to supply merely temporary employment until private industry could take over

the load of re-employment. This purpose seems to have been lost sight of in the zest with which his bureau chiefs, Hopkins, Tugwell and Ickes, have organized their tax-spending activities. Today WPA, RA and PWA are definitely in competition with private industry for the services of building mechanics and construction labor, and also in competition with private home building and home ownership through the heavily subsidized product of this labor, the subsistence homes, housing communities and slum cleared public housing which are produced under these powerful and far-flung government bureaus.

If private industry, under sound Federal Housing Administration auspices, is to go forward on the tremendous home building program that lies ahead, this federal relief competition for men must be removed.

Time to Return to Independence

Our present concern is not with the inefficiency of relief labor, the uselessness of many of the make-work projects, or the political corruption that is bound up in this system of relief. Our concern is exclusively with the attitude of those WPA building trades workmen who could now find employment in the reviving home building industry, but who evidently prefer to cling to their "security" under the federal dole rather than to risk the chance of short time employment at good wages.

It does seem that the time has come when the powerful force of Administration leadership should place itself definitely on the side of private employment in the construction field and definitely against further acceptance of charity at public expense by able bodied mechanics. The problem is not easy of making the shift from relief rolls to payrolls; yet if through orders, instructions and example from the President himself the same enthusiasm were shown now for cutting down the number on the work relief rolls—transferring them to private employment—that characterized the job a year ago of getting these men onto WPA rolls, a great change for the better in the tempo of business and the attitude of building labor would unquestionably result.

The Committee on Unemployment, appointed two years ago by Gov. Lehman of the state of New York, submitted its final report recently on its study and research of unemployment relief plans. Twenty-six members of the

committee filed a majority report and five members a minority report. The majority report recommended that work relief should not be adopted as a permanent method of meeting the problem of large scale unemployment.

In urging against continuance of work relief it pointed to a decline in the moral value of work relief as against home relief, as well as in the skill preservation qualities of work relief.

"It appears that these have been somewhat exaggerated," the report said. "Work relief initially had virtue as an attempt at meeting what appeared to be a temporary, and an emergency, situation. It helped to safeguard the public welfare during a difficult period. The intervening years have, however, demonstrated the fact that * * * the enterprise has grave defects in principle and practice." Enumerating some of the disadvantages of work relief the majority report stated,

"It causes the workers, in some measure, to become accustomed to work relief and to fail to seek private employment. In some respects it has offered too much security to the workers. Some tendency has developed to regard work relief employment both as a matter of right and as a continuing job."

Building labor is particularly susceptible to this government relief work competition because of the short time contracts and seasonal operations typical of most private construction jobs. It is only natural that many men like the supposed permanent security of the government-sponsored work even at small pay, and are reluctant to give it up in exchange for what may prove to be temporary work at regular wages.

However, quoting from the Federation of Labor housing survey referred to above, "with rents and values rising, mortgage money cheaper and easier to get, costs still well below pre-depression levels and a serious shortage of housing, a high level of private building is in prospect for the next two or three years. Some have even predicted a building boom." So it seems certain that labor will *not* find private employment temporary or unattractive.

Full and enthusiastic co-operation in the movement from work relief to private employment should be the attitude of union labor leaders, government officials and of the entire building industry.

* * *

Will They Buy HOMES or Play the Market?

GREAT numbers of practical American citizens are today weighing the comparative value of investing their savings in a home as against putting them in the stock market. Every man in the building industry should arm himself with sound arguments to prove the advantages of home ownership.

There can be no doubt about the vast superiority of investment in a home, especially for the small investor.

As a stock market broker himself recently confided to one of the editors of *American Builder*, "the cards are all stacked in favor of home building."

This broker pointed out that a 55 percent margin is required in the stock market, and the "little fellow's participation is made expensive and difficult by new restrictions and brokerage requirements." But the "little fellow," he pointed out with regret, can buy a house with a "margin" requirement of only 20 percent. He said that the possibilities for a large increase on the investment are much greater.

As an illustration, take the individual who puts up \$2,000 for a \$10,000 house and lot. If he buys his land at present depressed values and keeps his building costs within reason his property should be worth \$12,000 to \$15,000 within the next five years. Thus his \$2,000 investment has increased 100 to 250 percent. How many stocks can be counted on to surpass this?

American Builder does not hold that buying a house should be done on the basis of such speculative reasoning as this. In fact, it strongly urges against such a policy. But it does believe that when a prospective home owner is considering passing up home ownership in order to speculate in stocks, it is only fair and right for building men to present such facts as these.

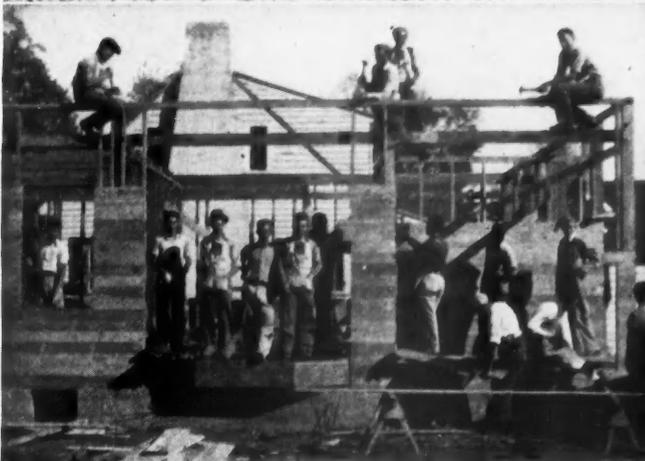
Always a Usable Asset

They should also point out that when a small investor puts his money in a house, he has something he can *see, use and control* for his own benefit. A stock certificate is just a scrap of paper as far as the small speculator is concerned, and unless he has an unusually wide and sound knowledge of market conditions, or has a run of fool's luck, the chances for making a killing are all against him.

With rents and building values rapidly rising, it is possible for a man of small means to buy a house on the 20-year payment plan for less than his rent now is or is likely to be within a short time. By buying a house for his own use he is turning rent payments into investment in a property of his own that is increasing in value.

But what about taxes, assessments, high building costs and the foreclosure difficulties thousands of owners got into during the depression? No wise, sincere builder should try to gloss over or minimize these matters. He should discuss them intelligently. He can point out that the prospective builder today should profit by the experience of the past. He can help the home owner build a house within his means. He can help him find out in advance what *all* the costs will be, including taxes and assessments. He can show the advantages of building in a community where restrictions tend to increase property values. He should act as counselor and guide to keep the owner from putting in items he cannot afford to carry.

If he will do all these things, and make sure that the buyer has a well designed, well built structure, he can with justice and fairness declare that this investment will prove to be not only a safer, sounder investment than the stock market, but a better paying one.



ABOVE, AT TOP: Boys of High School Building Trades Classes, Barrington, Ill., and their instructor, Charles H. Roselle (at right), grouped in front of the house which they completed last June. Below, the boys are shown getting practical building experience on the job; a well built Colonial house testifies as to the thoroughness of their training.

TRAINING FUTURE BUILDERS

With a constantly increasing volume of building the industry already faces the problem of obtaining enough skilled tradesmen. Training future builders is an obligation resting upon all elements in the construction field—likewise young men who today are looking for opportunities can build their futures on early training in the trades. There is a natural demand for young men and those who have had two years of practical school experience such as the group above are more acceptable as apprentices.

er

num of floor space. Study of the floor plans illustrated on the page opposite will show how cleverly the architects have made use of every inch of space. The dining bays, large enough for six or eight persons, are almost entirely of glass and add a feeling of spaciousness to the living rooms, which are of reasonable size.

Another very popular feature is the dressing closet and bath arrangement in the typical four-room apartment. This permits access to the main bathroom from the foyer. The dressing closet, as well as the bedrooms, have elaborate built-in wardrobes and clothes storage equipment.

The problem as stated by the architects was to secure flexible small apartment units, incorporating the latest developments both in this country and in Europe. Among the features are sunning terraces, a community squash court, playgrounds for children, street-front bedrooms provided with air filters and silencers which furnish positive ventilation while excluding traffic noises.

Each apartment has a wood burning fireplace, a bath for every bedroom, and very modern all-metal kitchen equipment, scientifically arranged. Kitchens are long and narrow with a large adjoining pantry and storage space. There is a separate kitchen entrance. One of the apartments fronts on Fifty-fourth Street and the other on Fifty-fifth Street. Between them is a beautiful community garden upon which the rear apartments look.

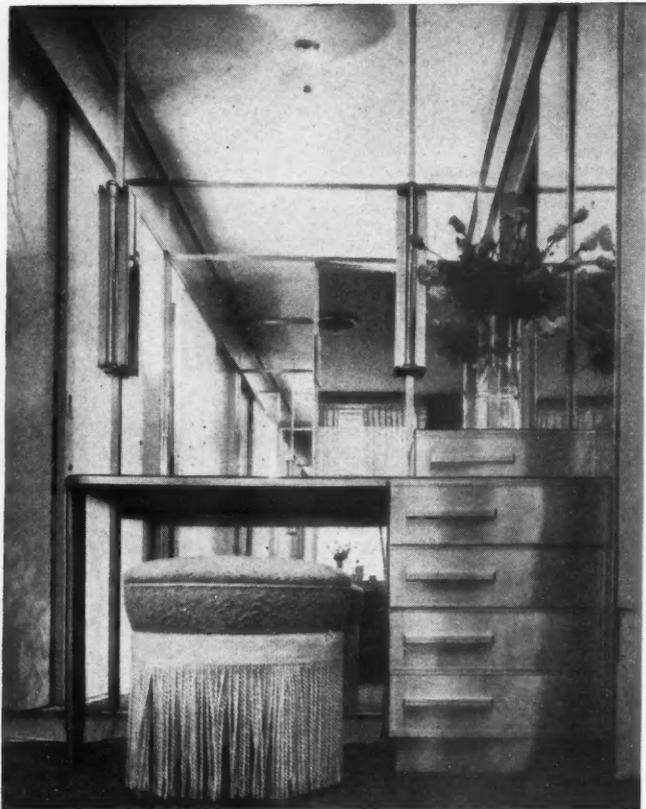
The apartments, for the most part, consist of living room, dining alcove, kitchen and either one or two bedrooms with one or two baths. They illustrate the fact that the greatest current demand is for small, fully equipped, well laid out, well lighted apartments.

While the Rockefeller buildings are extremely interesting from the exterior and from a construction and design viewpoint, they are even more striking in their interior treatment. Some idea of the modern fashion in which these interiors are carried out is given in the accompanying photographs of a typical four-room apart-



MODERN interiors of the new Rockefeller Center apartments are shown above and below, with furnishings designed by Paul R. MacAlister and James W. Folger. The large glass dining bay, above, will seat six or eight people comfortably. A huge rectangular mirror is placed above the plain marble slab of the fireplace. Photos by Frank Randt.





INTERESTING detail of the dressing closet, showing built-in dressing table and drawers, with glass mirror and vertical lighting. At left is the wardrobe with heavy sliding doors papered like walls.

ment, which has been built and fully decorated and furnished on the tenth floor of the R. C. A. Building in the heart of Radio City, as part of the permanent Exhibition of Decorative Arts and Crafts. The modern interiors, decorated by Paul R. MacAlister and James W. Folger are done in simple contrasting colors of walls, floors and natural woods. Living room furniture is grouped around the wood-burning fireplace, which has a large panel of clear, unframed mirror and a white facing of marble. On either side of the fireplace are low bookshelves and cabinets of white sycamore.

Through a wide opening, which seems to expand the floor area of the foyer, can be seen the curved window, enclosing the dining bay on the far wall of the living room; one's curiosity is piqued and further exploration of the spacious room is invited. Enclosed almost entirely in glass the dining bay serves as a solarium which can be screened off without interfering with the living room proper while setting and clearing the table; large French windows protected by a railing provide additional light, air and sense of openness. The furniture in the bay includes six chairs upholstered in beige leather, and a circular mirror-top dining table with a serrated pedestal base of English white sycamore and Brazilian rosewood.

One of the newest developments of interest in equipment is an automatic telephone system which switches unanswered incoming calls to an operator. The renting agents reported that the building was more than 75 percent rented from the plans two months before completion.



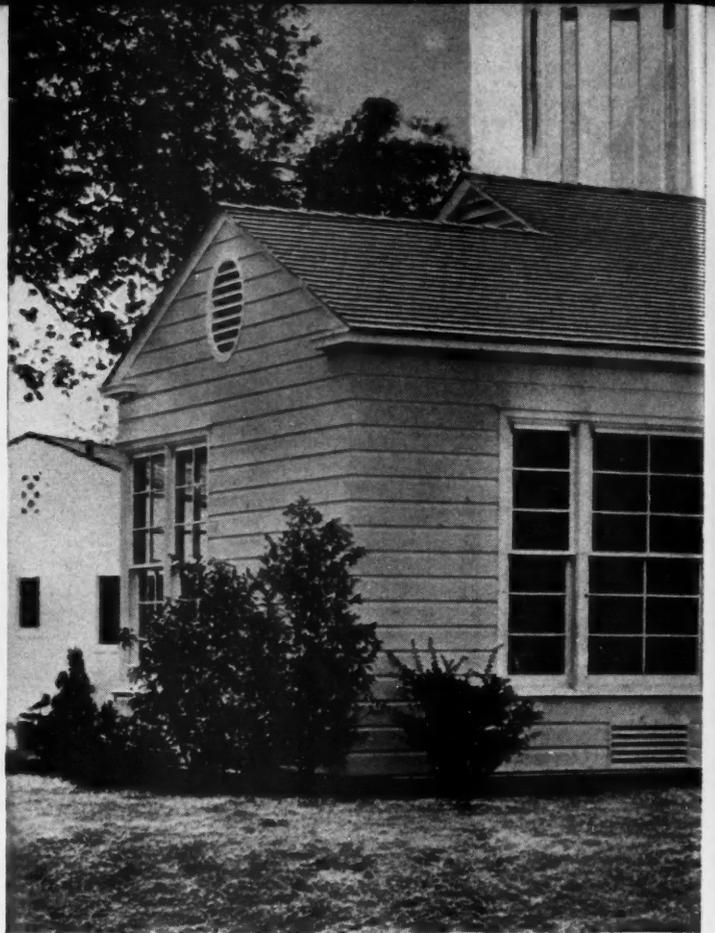
A LEDGE behind the sofa of this Rockefeller Center living room provides space for objects of art. Above this ledge is a wide mirror panel. A thin layer of natural wood covers the wall from mirror to ceiling.



Goodwin & Tatum, Architects; F. A. McDaniels, Photographer

Modern Finish in Model Home

SIXTEEN pages of home designs on special enamel paper illustrate present-day trends in small popular priced houses. The first of this group is the Southern Pine Centennial House at the Dallas Exposition. The view above shows the "heart" of this home, the living room fireplace with its over mantel of grooved wide boards and flanking book shelves in modern style.

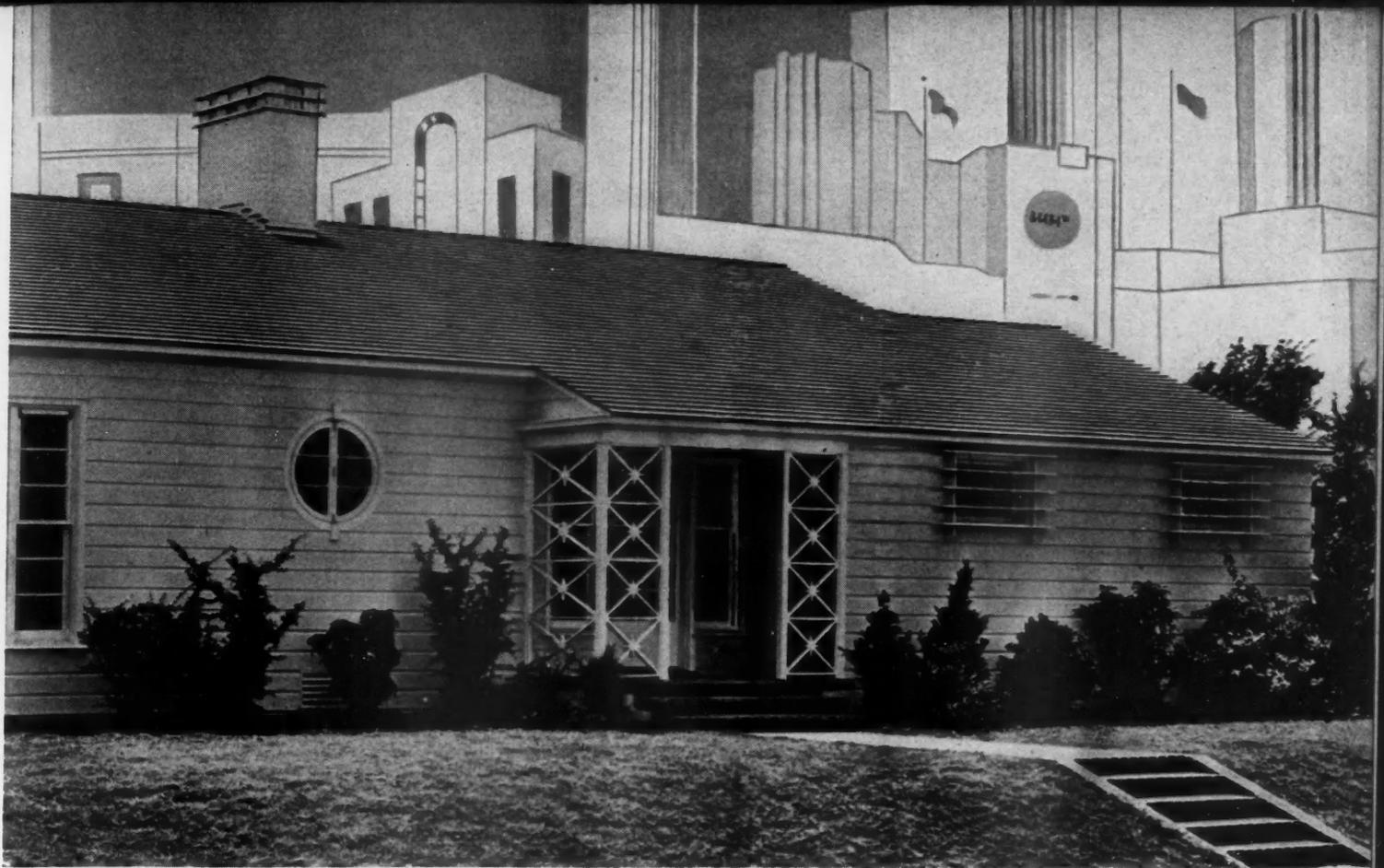


New Note in Walls and Ceiling

ABOVE is an interior view of the second bedroom of the Centennial Home showing walls of pine boards papered over canvas. Ceiling is of V-joint pine boards.

BELOW is interior view of Master bedroom walls covered with moulded-joint pine boards laid vertically, with a lower course of V-joint boards laid horizontally. Ceiling is of V-joint shiplap.





ALL-SOUTHERN PINE HOME AT THE TEXAS CENTENNIAL

AN AVERAGE of more than 2,000 persons each day are visiting the all-Southern Pine Exhibit home at the Texas Centennial Exposition and procuring up-to-date ideas on home building from this attractive, "dry-built" modern home of wood, designed with the idea that it can be built anywhere in this country for from \$4,500 to \$5,000.

It is smart in appearance and has long, wide corner windows giving an abundance of sunlight and excellent cross ventilation—twin ingredients of pleasant days and restful nights—in every room.

Goodwin & Tatum, Dallas, Tex., Architects

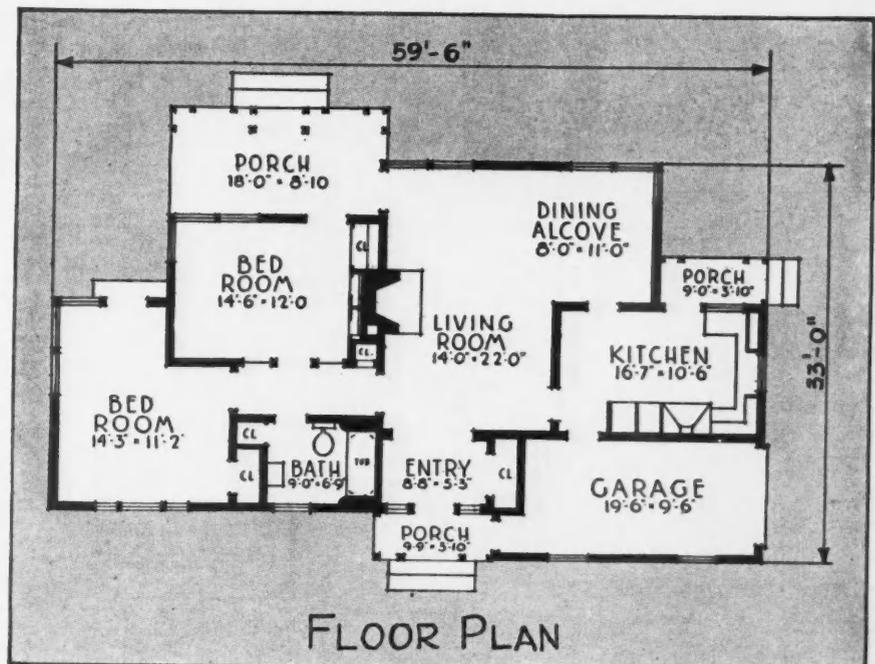
**Stock Plans (without changes) from
Southern Pine Assn., New Orleans.**

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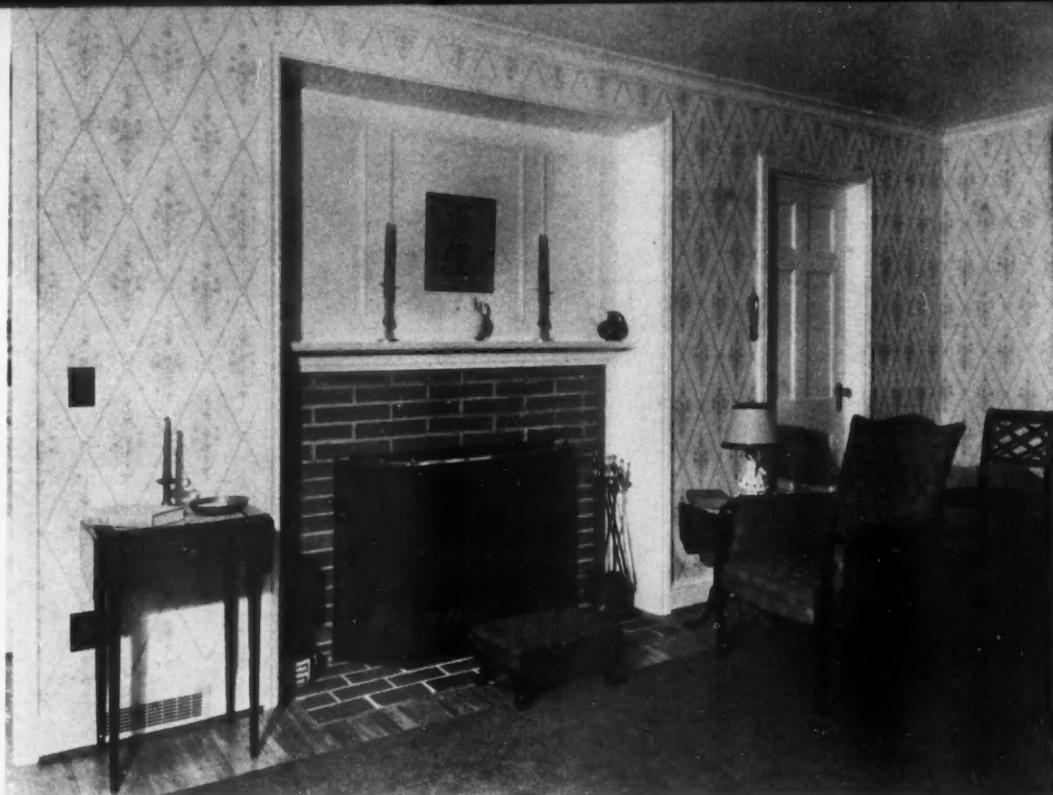
THE FLOOR plan and interior arrangement provide comfort and convenience in each room and closet—no wasted space. Front and rear entrances give access to the living quarters and the kitchen has its own service doorway. The garage is built under the same roof as part of the house.

The roof is covered with cypress shingles, and the finished floors in all rooms, excepting kitchen and bath, are of edge-grain Southern pine. The bathroom floor is of tile.

The interior finish is at once attractive and unique. The front entry is finished in knotty pine boards, laid horizontally with moulded joints. In the spacious living room, with its cheerful dining alcove, the horizontal arrangement of the wide wall boards and decorative mouldings carries the eye from end to end with an impression of generous length.



R. C. Hunter
Architect



RECESSED FIREPLACE

AN UNUSUAL feature of this Rochester house designed by R. C. Hunter, New York, is the recessed fireplace. Space for two useful closets is provided at either end of the fireplace, forming a recess which is unusual.

THE ENTRANCE detail, at left, is handled with skill and simplicity, the small dormer giving a decorative touch that appeals.

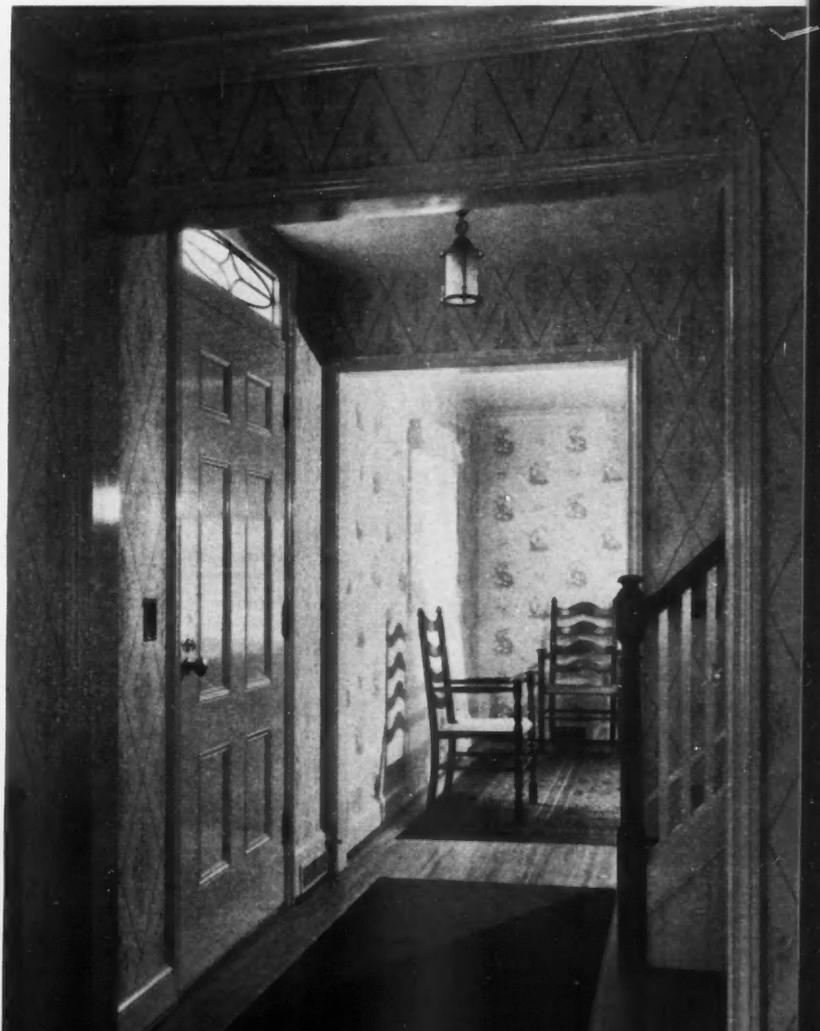
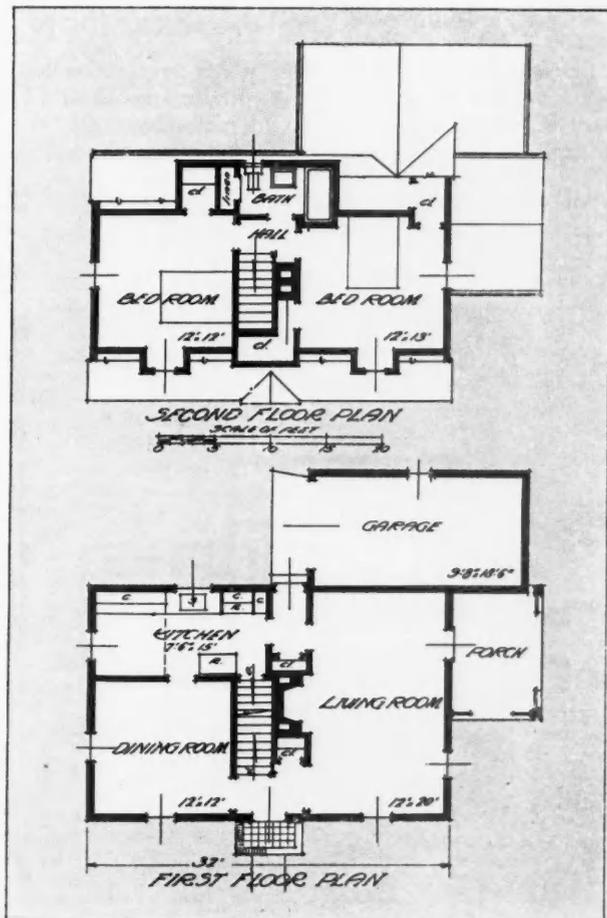




LOW COST COLONIAL

Cost Key is 1.475-142-672-27-19-15

THIS Rochester house by Architect R. C. Hunter is compact and liveable, with an open porch and attached garage that are well handled and pleasing. Simple Colonial trim features the hall entrance below.



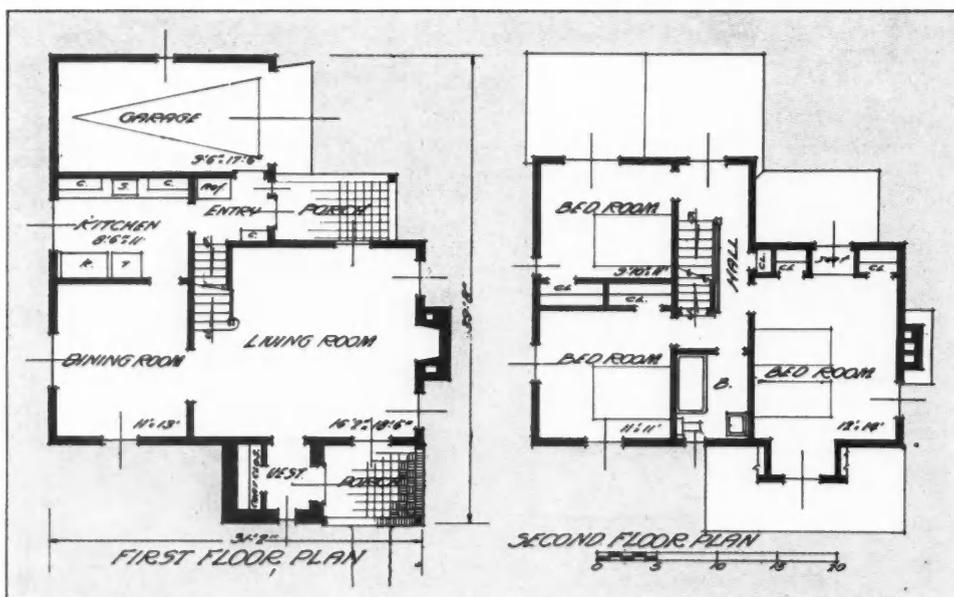


QUAINT ROCHESTER HOME

THE DEEP sloping roof, cozy front porch and attractive windows give this Rochester, N. Y. house, designed by Architect R. C. Hunter, a quaint and picturesque air. At the same time it is a well arranged modern house.

Cost Key is 1.636-143-727-23-17

SPACE for six good-sized rooms is provided in this compact plan, and there is both a front and a rear porch. The stairs are made a decorative part of the large living room.

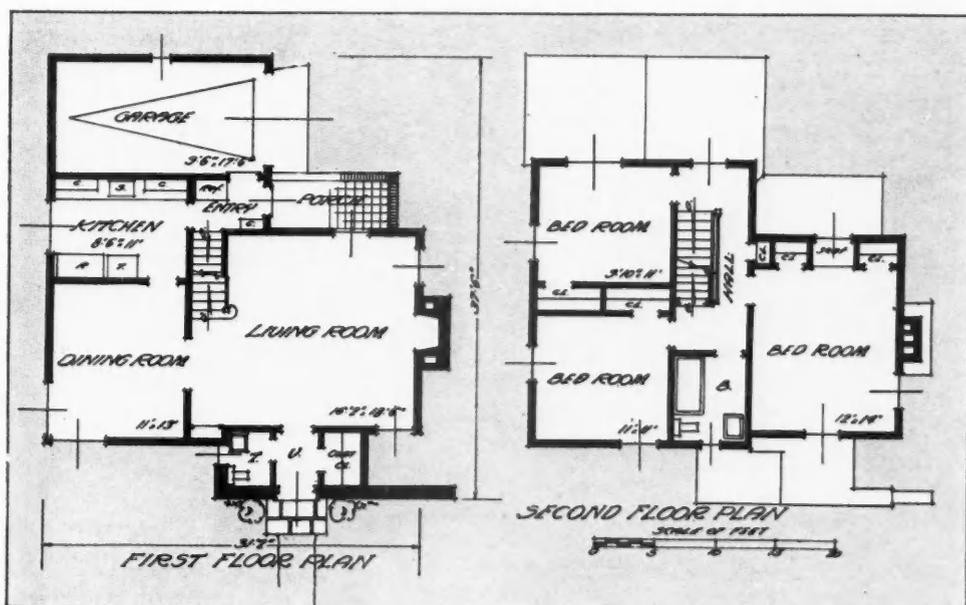


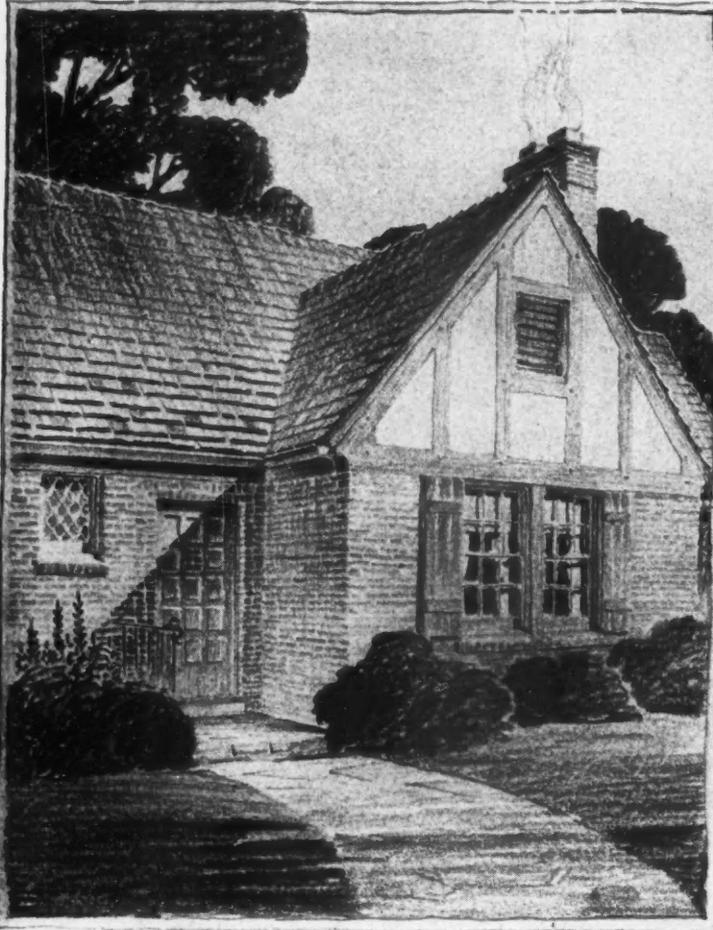


LOW-GABLED ENGLISH STYLE

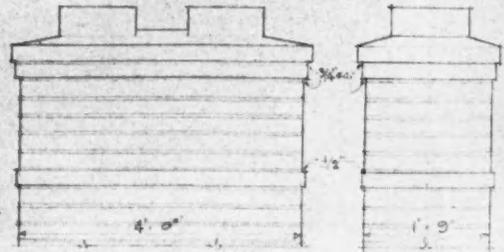
THE LOW gable on this little English home by Architect R. C. Hunter carries the lines to the ground and makes it appear less high. It is located in Rochester, N. Y., and is a very popular architectural design.

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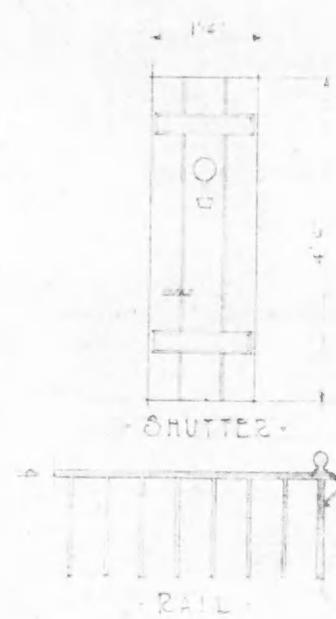
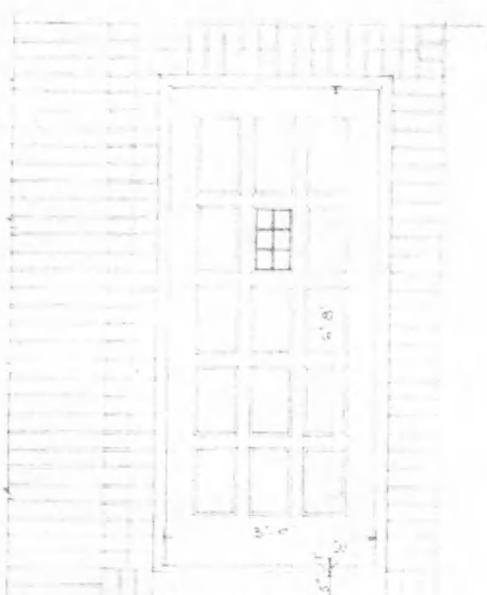
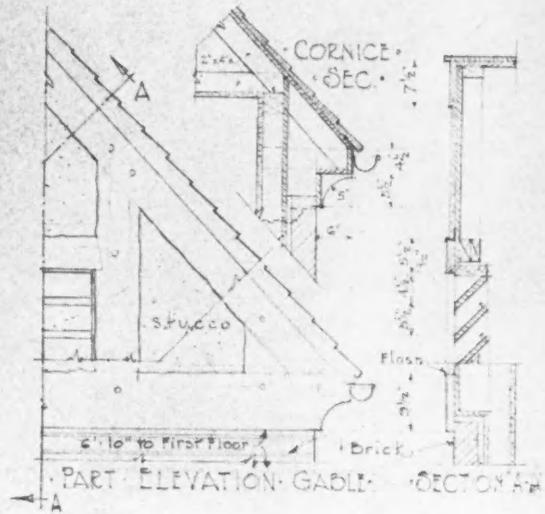




ENGLISH BRICK AND HALF-TIMBER.



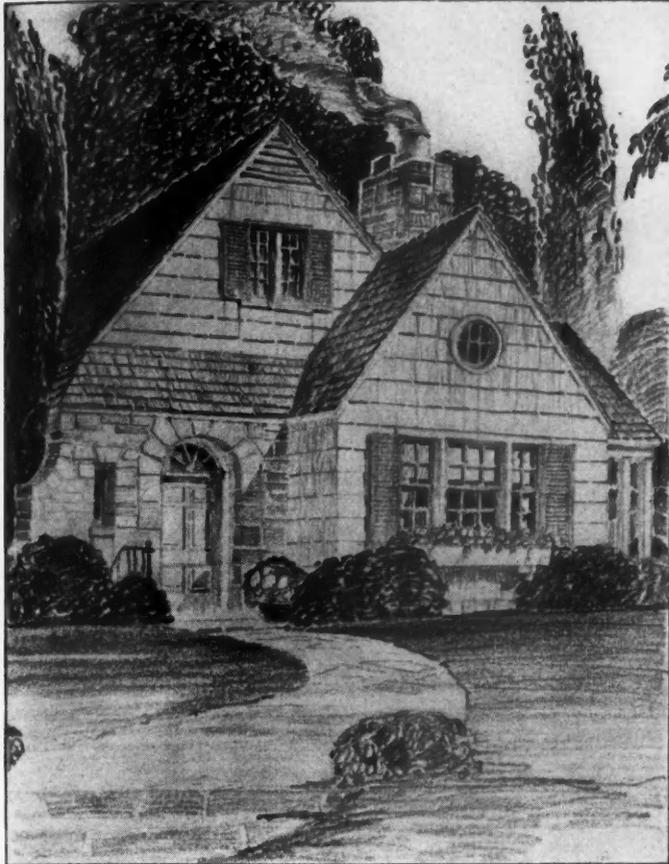
• SIDE • • END •
• 3/4" SCALE ELEVATIONS OF CHIMNEY •



• ELEVATION • • SECTION •
• DETAILS OF FRONT ENTRANCE •

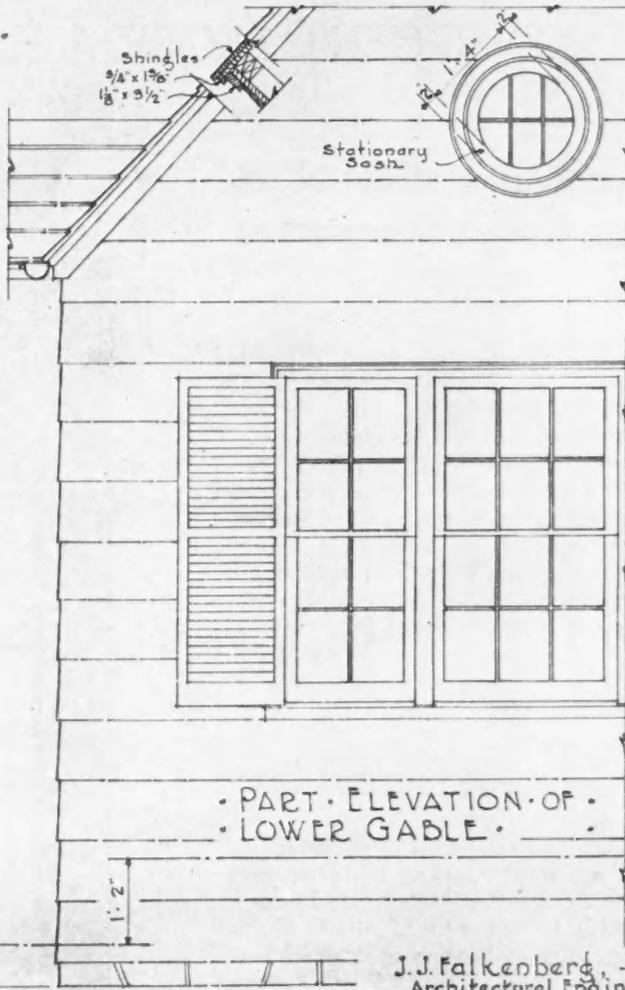
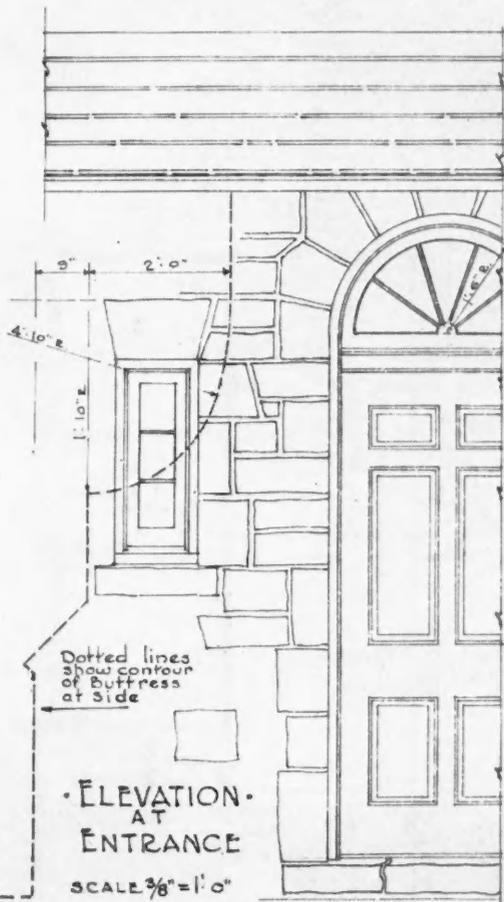
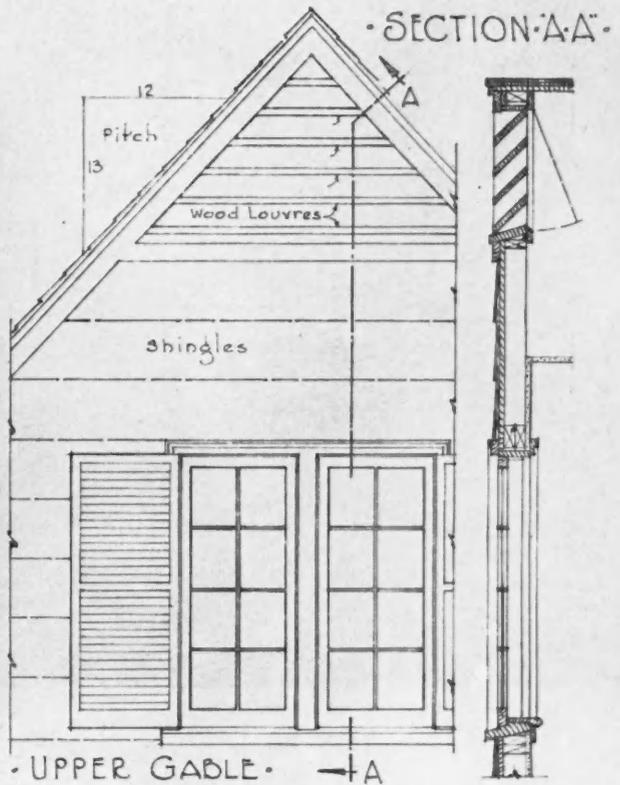
Scale, 3/8" = 1'-0"

J. J. Falkenberg, 1936
Architectural Engineer.



• EARLY AMERICAN DETAILS •
• ON A MODERN BUNGALOW •

• STONE & SHINGLE •



J. J. Falkenberg, -1936
Architectural Engineer.



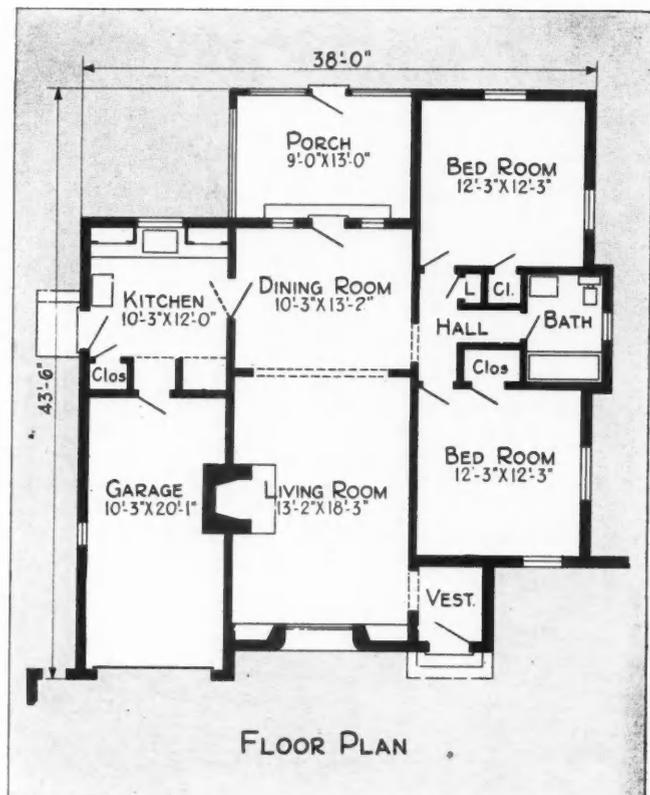
ONE OF 300 RECENT FLORIDA HOMES

**Designed and Built at Miami Beach
by the Lester F. Preu Organization**

Cost Key is 1.393-173-(1124)-(48)-18-16

WITH A RECORD of having completed 300 residences in the last two years, the Lester F. Preu organization of Miami Beach, Fla., has taken full advantage of the building revival now under way in that section of the country. Although some of the Preu built houses are of larger two-story design, most of their construction is of the popular Spanish bungalow type shown on these two pages. Practically all these homes have been built on the organization's own properties and developments. Many have been sold before completion.

The house above has five rooms, bath and attached garage. A wide archway separates the living and dining rooms; good ventilation is provided and a large screened porch faces the rear. The fireplace in the living room supplies heat when needed and a deeply recessed window is flanked with built-in bookshelves. Wall construction is concrete masonry, stuccoed on exterior; roof is of colorful tile.

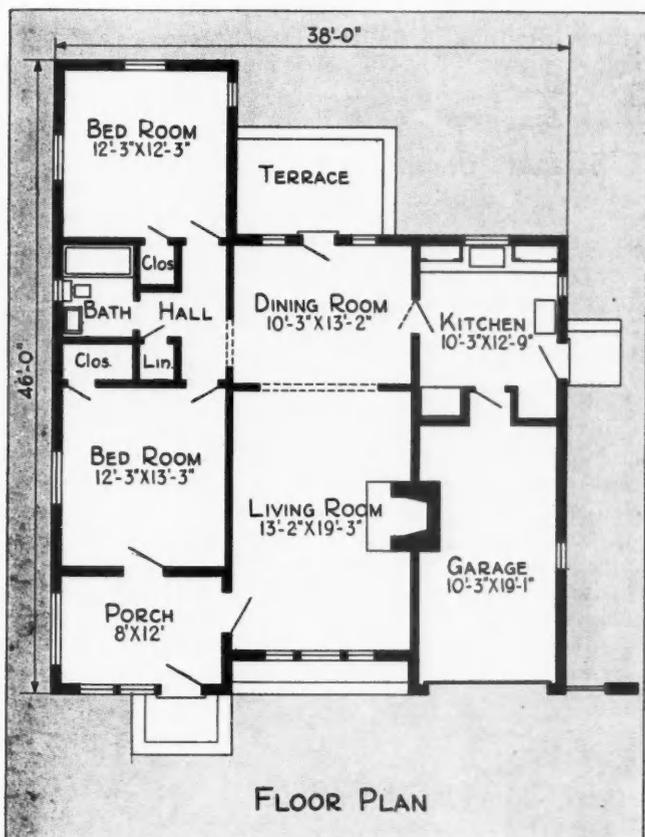




POPULAR STYLE OF MIAMI BEACH HOME

Lester F. Preu, Designer and Builder

Cost Key is 1.405-172-(1105)-(47)-18-16



LIKE THE HOUSE on the opposite page and all other Preu homes, the one illustrated above is built on a continuous reinforced concrete foundation; wall construction is of concrete block. Lots in the organization's developments have average frontage of 50 feet by 135 deep. Steel casement windows screened with aluminum mesh are used in all homes; a complete landscaping job using full grown, colorful shrubbery, grass sod and palm trees is also provided. Prices range from \$5200 for the smaller houses upward, according to size.

The plan at the left is similar to the one opposite, the principal change being a screened entrance porch instead of a vestibule, while the rear terrace is open rather than enclosed. Again in this plan the garage is attached; some of the other Preu houses have a popular porte cochere. Another feature is the convenience found in numerous built-in facilities which are included.



Outline specifications on page 61.

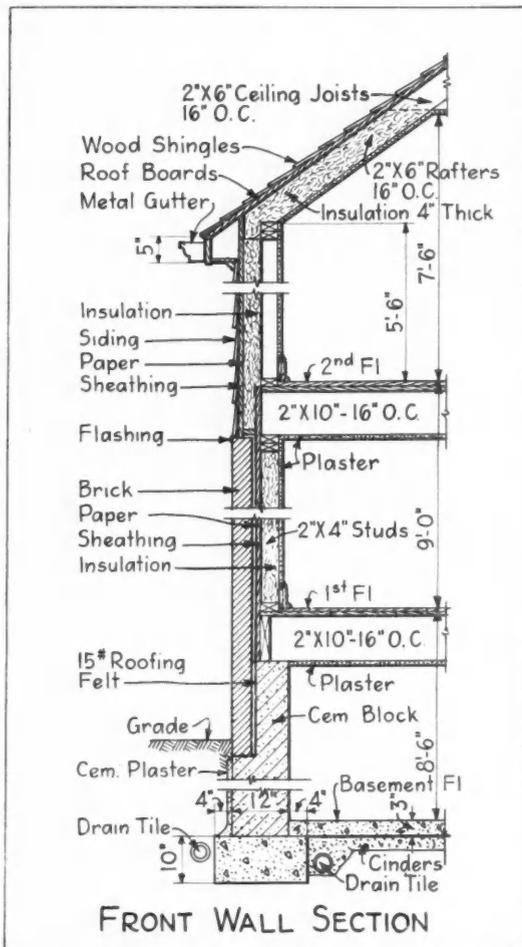
MONTHLY AWARD GOES TO "KELVINATOR PACKAGE" HOME

One of eleven houses built in Detroit, out Plymouth Road, to test public's acceptance of complete air conditioning and electrified kitchens in \$6000 class homes.

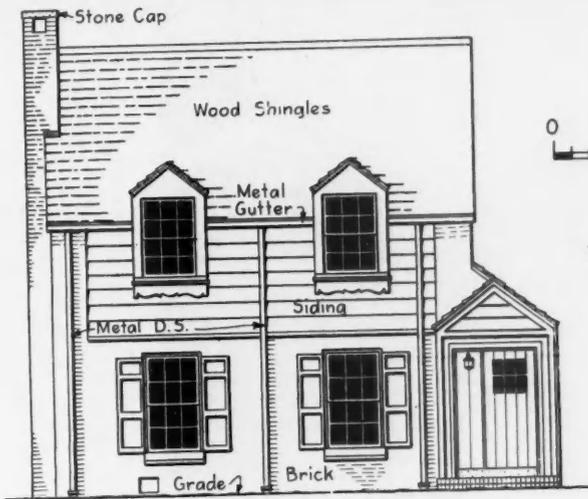
J. Ivan Dise, Architect

Walter T. Schuett, Contractor

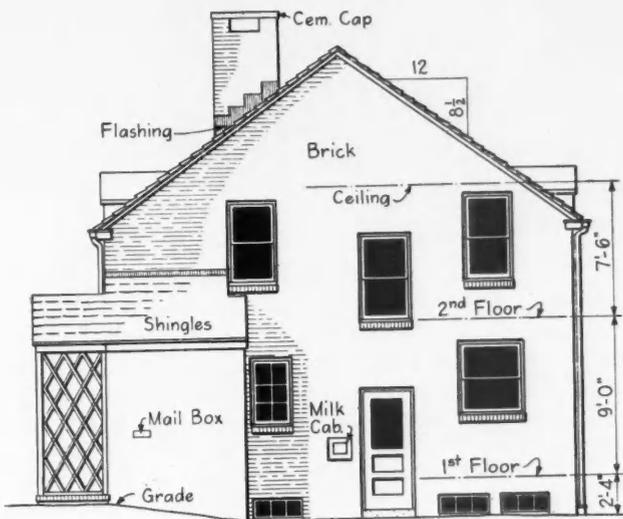
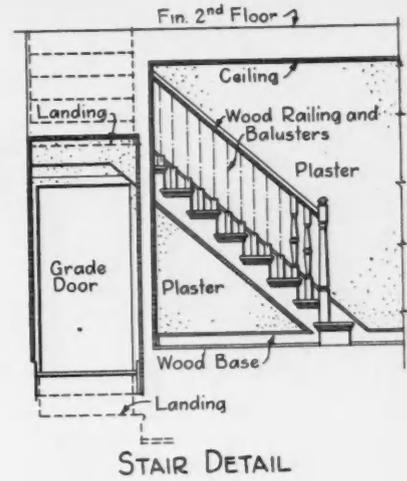
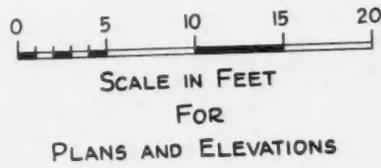
Cost Key:—1.285—111—677—29—19—10



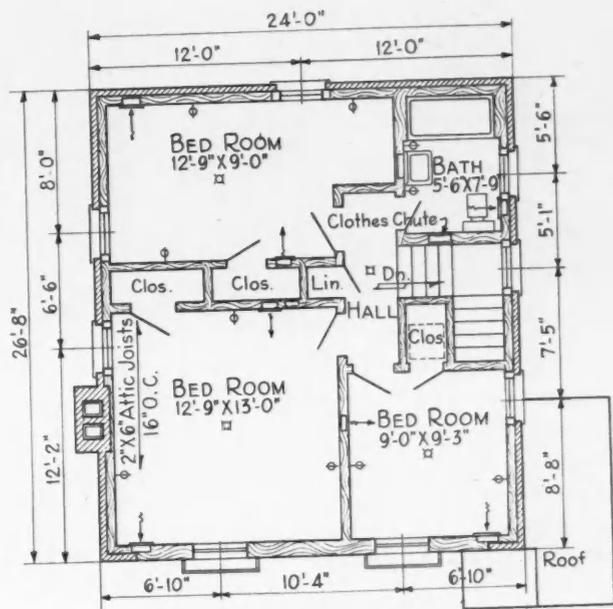
ONE of the big achievements of the year in the home building field is the successful completion in Detroit of the group of Kelvin homes at the planned-for cost of under \$6,000 each. The first house was completed from the carefully engineered plans at the estimated price. Then 10 additional homes were built, using the same floor plans but varying the exterior designs, to determine whether a saving could be effected through quantity production. This saved approximately 10 per cent. (9 of these designs are illustrated on this and the following 7 pages). These are 6-room homes of ample size; exteriors of architectural distinction; construction first class of standard brick veneer with insulated walls and roof; equipment most modern—in fact each is a completely electrified home with all-weather air conditioning. These houses are located on Strathmoor and Mark Twain avenues, Detroit, near the Kelvinator plant.



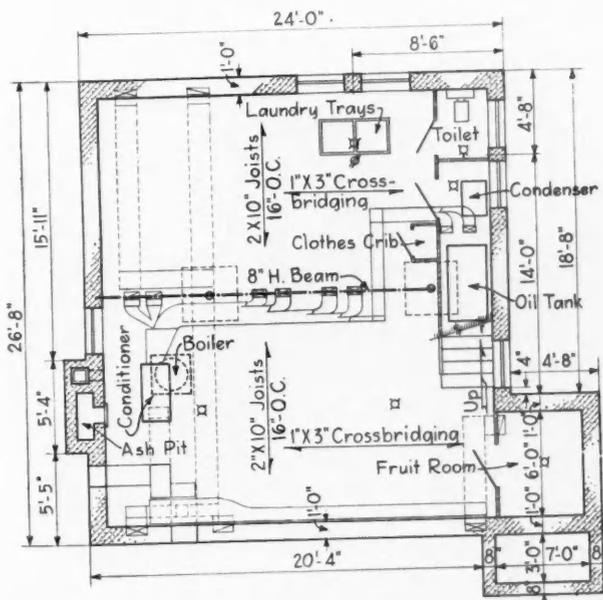
FRONT ELEVATION



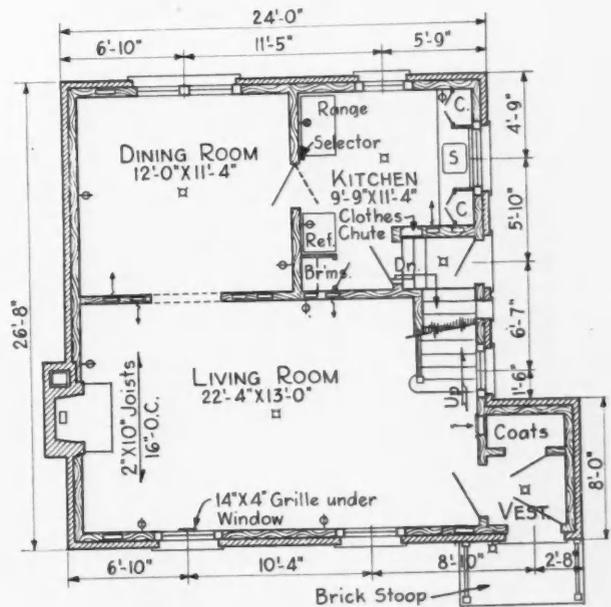
RIGHT SIDE ELEVATION



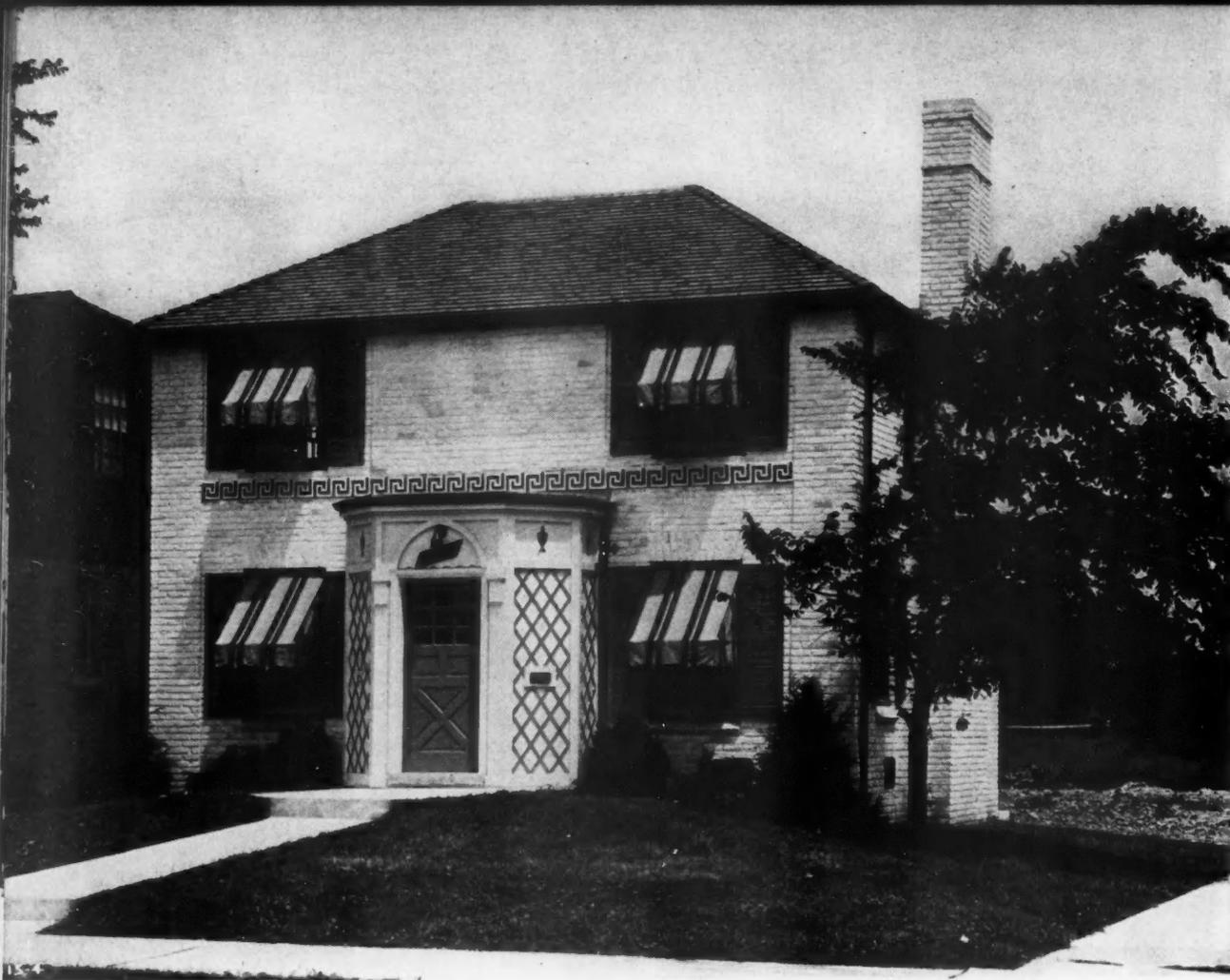
SECOND FLOOR PLAN



BASEMENT PLAN



FIRST FLOOR PLAN



Modern French

AIR CONDITIONED HOMES-- STANDARDIZED FLOOR PLAN

**Demonstrating How Careful
Home Planning Cuts Costs**

THREE of eleven different exteriors, all with practically the same floor plan, which Architect J. Ivan Dize has designed for the Kelvin Homes test near the Kelvinator plant in Detroit. Each has year-round air conditioning complete with mechanical condenser besides other advanced basement and kitchen equipment unusual in a \$6000 house of such architectural distinction.

For working plans of side-entrance type houses see page 54 and 55.

Norman Type





Colonial Type

THE RESPONSE to the Kelvin house proposition has proved that the American people have a vital interest in the modernization of the home and in the utilization of all that invention and research have provided for the comfort and convenience of modern living. The objective sought has been an electrically equipped and air-conditioned house within easy reach of Americans of moderate incomes.

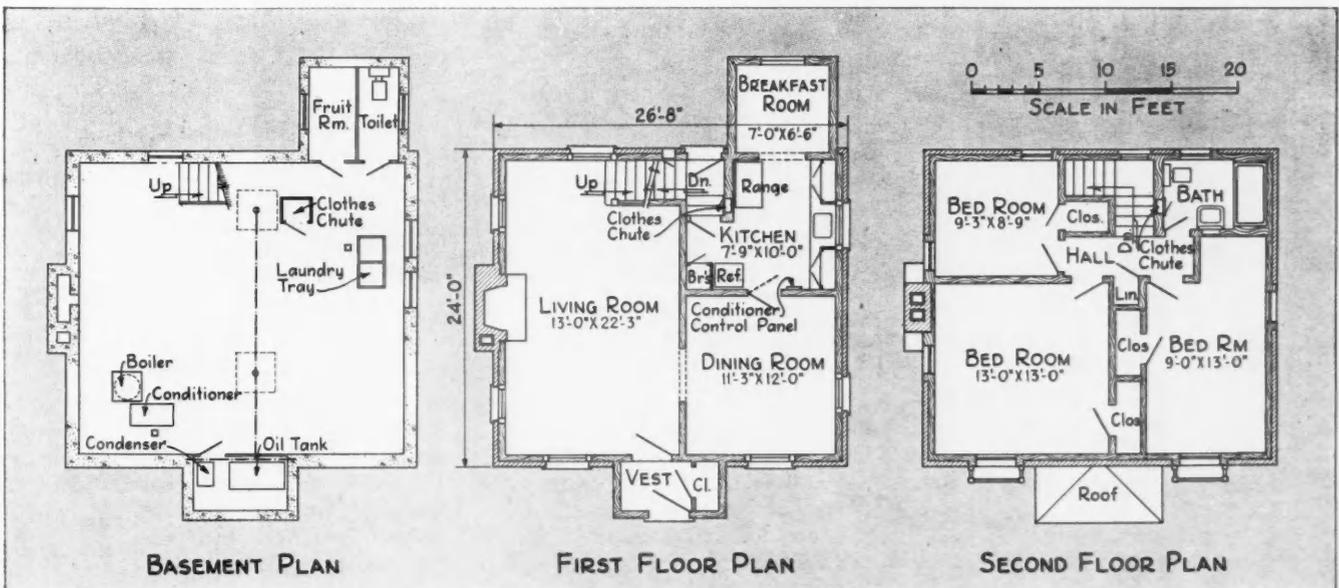
Through the co-operation of architects and builders with Kelvinator's technicians, eleven Kelvin houses have been built in Detroit which incorporate the latest developments in the modern mechanized home. These houses,

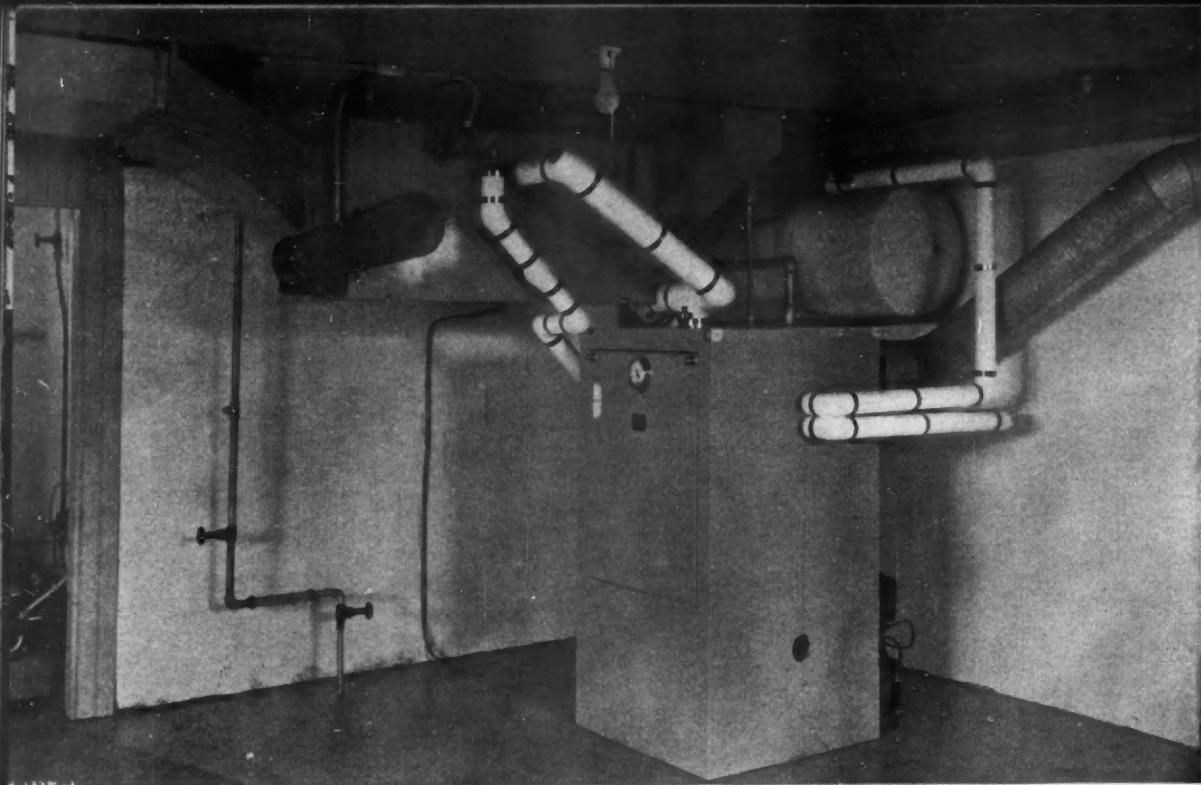
while varying in exterior design, have a standardized floor plan, which provides for living room, dining room, breakfast room and tiled kitchen on the first floor, and three bedrooms and tiled bath on the second floor.

Within the insulated walls of this standard house, every major convenience for the housewife and the family has been installed. These conveniences include Kelvinator electric refrigeration and electric cooking and Kelvinator year-round air conditioning.

Cost Key is 1.394-123-728-32-21-13

For outline specifications see page 61





THE "KELVINATOR PACKAGE"

"WE ARE PREPARED to co-operate with architects, builders and real estate men," states George W. Mason, president of the Kelvinator Corporation, "by offering a complete 'Kelvinator Package,' which will include the following: Kelvinator Electric Refrigerator K-S-36, Kelvinator Electric Range K-36, Kelvinator Boiler Burner Unit ORB-465, Kelvinator Year-Round Air Conditioner RC-704, Kelvinator Condensing Unit, Kelvinator Comfort Damper, Kelvinator Duct Distribution System, Kelvinator Exact Selection Controls, and Kelvinator Fuel Storage Tank, 220 gallons, with gauge." Above photos show how these equipment items are installed in the eleven Detroit test homes.

KELVINATOR OFFERS

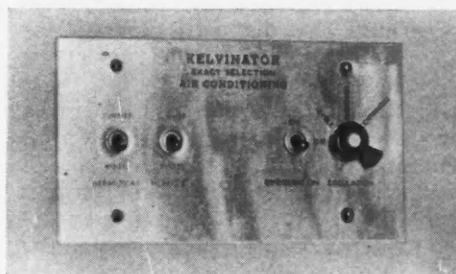
Standardized Low Cost Homes-- Cooled-Warmed-Electric Kitchened

SINCE the time when the bathtub and toilet were incorporated as an integral part of the home, no major improvement has been made in home construction until the last few years, during which the ingenuity and resourcefulness of leading manufacturers have developed new and improved methods, materials and equipment which substantially add to the life of the structure and make for greater comfort, convenience and economy. Automatic electric refrigeration and economical electric cooking have been perfected and this equipment has become standard for the modern kitchen. Plumbing fixtures have been improved and lowered in cost. Insulation has come to be recognized as essential protection against heat and cold. Constructive thought has been given to better heating and ventilating.

The so-called air conditioning of homes is now almost universally accepted as the standard heating medium. Most of these air-conditioning plants, however, are designed only for winter heating and no provision made for summer cooling. The cost of these plants has in general limited their use to homes in the higher priced brackets.

In order that the wants and desires of the American public for moderate priced homes embodying the latest advances of applied science and invention might be gratified, George W. Mason, president of Kelvinator Corporation, Detroit, has announced the broadening and extension of the "Kelvin Home" program.

Arrangements with contractors, utility companies and Kelvinator distributors are being completed for the construction of over a hundred of these all-electric, air conditioned Kelvin houses in various parts of the country. Capital and building materials for the houses, which will be built by independent contracting firms following de-



CONTROL Panel in kitchen rules air conditioner.

signs and specifications by Kelvinator engineers, are being supplied locally.

The first eleven houses under this program have been built in a desirable residential locality near the Kelvinator plant in Detroit. Each one has the standard floor plan but no two have the same exterior design, and all are within the \$6,000 cost range, which includes the normal profit to the builder and the usual five percent commission to the real estate broker. These houses provide an opportunity for demonstration under actual operating conditions.

The soundness of the Kelvinator plan and the approval and acceptance of the Kelvinator House by the public are evidenced by the great interest being displayed in these houses, and their sale. All have been highly rated by the FHA and approved commitments for insured mortgage loans have been made.

According to Mr. Mason, Kelvinator's purpose in building this group of houses was:

1. To demonstrate in concrete form to the builder and the public that a normal, attractive, well constructed 6-room home, completely insulated, caulked and weather-stripped, with a Kelvinator year-round air conditioning



ONE of the Kelvin Homes in Detroit; fully insulated 6-room brick veneer; all-season air conditioned; electrified kitchen.

system, together with a 6 cu. ft. Kelvinator electric refrigerator and a 4-burner Kelvinator electric range, could be built on the owner's lot, including a 10 per cent profit for the builder and a full 5 per cent real estate commission, in the neighborhood of \$6,000, depending on exterior treatment, etc.

2. To study duct layouts and construction details in order to standardize duct work and as many other items as possible, bringing cost to a minimum.

3. To obtain a complete quantity survey (material and labor hours) on each house so that the builder could readily check his costs on any Kelvin house.

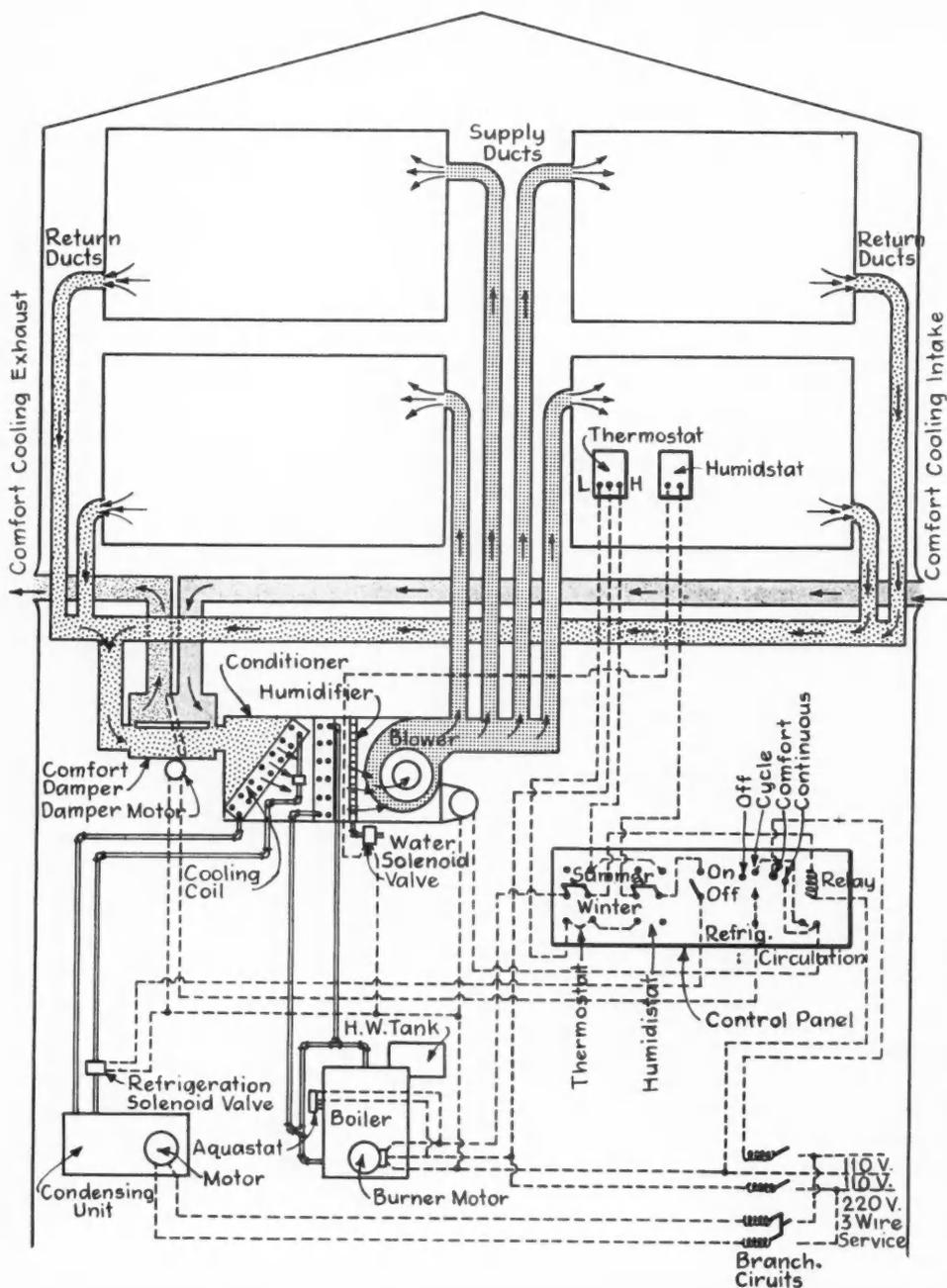
4. To illustrate that attractive, distinctly different exteriors could be developed, using exactly the same floor plan.

"While it is essential that the standard floor plan be adhered to, exterior designs are optional," Mr. Mason stated. "We will submit the layout, heating and special wiring plans and mechanical drawings for incorporation in the plan so that architects, if they so desire, may develop exteriors which will express their personality in the houses within the \$6,000 range. Builders and mortgage

bankers and real estate men have welcomed the Kelvinator plan. It is basically what they have been waiting for."

With the "Kelvinator package" the company gives installation, one year's free service, personal instructions in operation of the system, complete plans and specifications for construction of the house, and supervision of the job. Tests show operating cost to be \$183 a year, of which \$73 is for oil and \$110 for electricity. This sum includes the air-conditioning apparatus, oil burner (to heat year-round supply of domestic hot water as well as house), all electric domestic appliances, electric lighting.

Kelvinator believes that modern house construction must be built around latest manufacturing and scientific developments, foremost of which is air-conditioning. There is much confusion today in the public mind as to what air-conditioning really is, because so many products have been marketed under its name. Kelvinator is trying to make available to the public complete air-conditioning, which means proper heat in the winter and cool air in the summer. The only way to do this, it feels, is to bring the price down to suit the pocketbook of people who have less than \$10,000 which they can afford to spend for a house.



CONVENTIONAL Duct layout and connection diagram for Kelvinator air conditioned house. Note the Comfort Damper in the fresh air intake duct. It is opened or closed from the control panel in the kitchen. In ordinary summer weather bringing in the cool night air into such a well insulated house gives all the cooling needed. On extremely hot afternoons the refrigeration compressor is switched on, serving the cooling coil in the conditioner.

Outline Specifications

Eleven Kelvin Homes Built in Detroit by Walter P. Schuett; J. Ivan Dise, Architect

FOUNDATIONS—Concrete footing, 10"x18"; concrete block walls to grade 12"; 4" drain tile laid down surrounding footings both inside and outside below cellar floor line.

WALLS—Exterior veneered with 4" face brick securely tied to wood frame; studding of outside walls to be sheathed with 1"x8" Y.P. shiplap covered with 15 lb. roofing felt, roofing felt to carry down to grade over cement block bearing wall; basement window sills Indiana limestone; door sills Ohio blue stone; other window sills brick; masonry over all openings to be carried on steel angle lintels.

DAMP-PROOFING—All walls in basement are to be plastered on outside with 1/2" of cement mortar and given a heavy coat of R.I.W. or equal damp-proofing. After damp-proofing is dry backfill with good earth.

BASEMENT FLOOR—The entire basement is to receive a 3" thick floor of 1 part cement, 5 parts gravel; trowel smooth and properly pitch to floor drain. Same to be laid over a bed of cinders well tamped.

FLUES—Terra cotta flue lining for fireplace and furnace flues; approved cast iron clean-out doors for basement ash pit and at bottom of furnace flue.

FIREPLACE—Faced up with brick or stone as selected by owner. Line the fireplace with firebrick laid in fire clay mortar. Back hearth to be firebrick, front hearth to have 4" concrete base covered with 4"x4" red quarry tile.

CARPENTRY FRAME—All framing lumber to be No. 2 Y.P. free from all loose knots. Floor joists 2x10, 16" centers, each span to have 1 row of 1"x3" bridging. First floor joists to have 2"x10" headers running around entire building. Rafters 2"x6", 16" centers, studding 2"x4", 16" o.c. with single bottom plate and double top plate. Rafters covered with 1"x6" boards 2" apart. Rough flooring over first and second floor joists to be 1"x6" shiplap laid diagonally, jointed over and parallel with joists and well nailed to every joist.

ROOFING—All roof surfaces shingled with 5X bundle-dipped stained wood shingles laid 4 3/4" to the weather.

SIDING—Where indicated to be of 3/4"x9 1/2" beveled cypress or white pine, set with approximately 8" to the weather. Dormer gables 3/4"x4" flush siding. All outside joiner work to be No. 2 white pine or cypress. Outside doors to have rabbetted plank frames.

DOORS—All interior doors to be 1 3/8" thick of veneer with 2 horizontal panels. Vestibule door 1 3/4" thick. Front door, cypress 1 3/4" thick.

STAIRS—Second floor to have 1 1/8" oak treads and 7/8" pine risers, housed, wedged and glued into pine wall strings. Stairs to have Curtis newel, balusters and rail. Landings of stairs to be of oak flooring. Stairs from kitchen to grade landing to be of pine with 7/8" treads and risers. Stairs from grade to basement to be of plank with plank strings and 3/4" No. 2 Y.P. risers nailed on.

FLOORS—Kitchen and grade landing floors to be 1/2"x3 1/2" T. & G. pine to receive linoleum. All other floors throughout the building to be 2 1/4" face select oak.

INSULATION—4" rock wool over entire second floor ceiling. Also between studding of all outside walls of entire building and at ceiling of projecting portions of first floor.

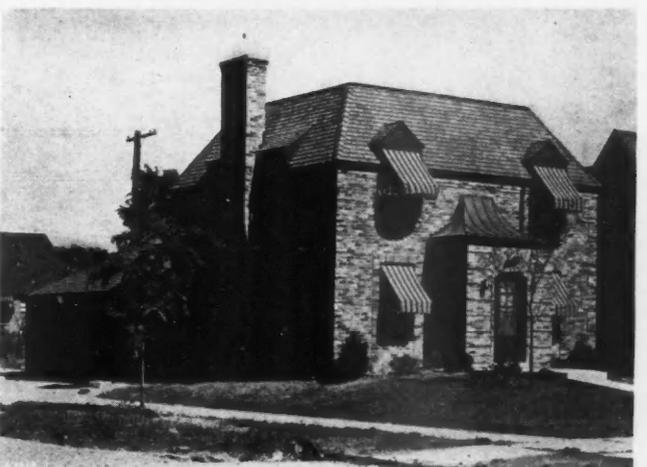
CAULKING—All doors and window frames gun caulked with approved caulking compound.

WEATHERSTRIPS—All wood sash weatherstripped with bronze or zinc weatherstrips. Exterior doors weatherstripped with spring bronze with brass thresholds.

SHEET METAL WORK—Flash around chimney, valleys and elsewhere as required with 28 ga. galv. iron. All ridges will be shingle ridge over 28 ga. galv. iron. Gutters and conductors of 26 ga. galv. iron.

(Continued to page 116)

Four of the varying exteriors, Colonial, English and French used with standardized floor plans in Kelvinator's Detroit Test.



Meet Our American Builder Field-

A Helpful Building Service for Every

OUR need for close and intimate contact with the building industry is being met by a staff of field men well equipped to give and anxious to receive helpful information. No group of men has wider contacts or closer friendships in the building industry than the eight men whose photographs appear on these pages.

The *American Builder* has repeatedly emphasized the fact that the construction of houses and other structures is a local business. It is a local business which thrives best on the effective co-operation of contractors, dealers and other important groups. But first of all, friendly co-operative effort between the contractor and the dealer is essential. The principal aim of the *American Builder* field staff is to further this ideal of better co-operation between these groups.

The only persons who have a rightful claim on the time of busy building men are those who have something worth-while to offer. It is this capacity for giving such helpful information that has built up the firm friendships and wide spread acquaintances our *American Builder* field men enjoy.

A wide knowledge of display, layout and merchandising ideas, along with much practical information on building methods, is accumulated by these men in their week in and week out intimate contacts with thousands of dealers. That knowledge and their suggestions are available to all *American Builder* readers.

The building industry in the United States is one of the most diversified, widespread and difficult to keep in touch with of any important business. Construction goes on not

They Promote Local Co-operation, Suggest Merchandising Helps and Ideas, and Gather Construction Facts and Data on the "Hidden Building Market"

only in large cities and the maze of suburban towns that surround them, but also in tens of thousands of towns, villages and rural communities. To keep closely in touch with this far flung business calls for thousands of miles of travel by the editors of the *American Builder* and by the members of its field staff. In the course of these travels they have learned a fact that many people cannot or will not appreciate, namely, that you cannot look at one segment of the building industry and draw conclusions about the rest of the country from that. The problems of different towns and communities are widely different, and it is only an intimate knowledge of the needs of a community that permit giving of sound advice and counsel to it.

One of the most important problems of builders and dealers is house designs and plans. Probably no group of men in the country are better qualified to advise on the popular trend in home designs and price qualifications than *American Builder* field men. Many of the members of this staff have been in close contact with various branches



TOM M. McINTOSH



JOSEPH H. FREE



C. L. CONLEY

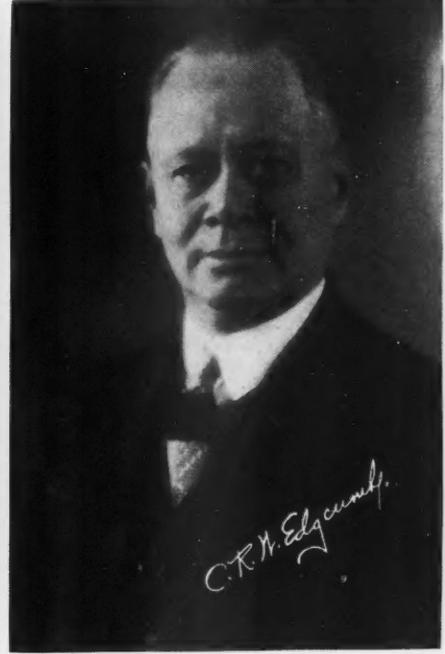
Staff Community

By **H. E. McCANDLESS**

Assistant to the President, American Builder Publishing Corp.



A. W. HOLT



C. R. W. EDGCUMBE

of the building industry for more than 25 years, and others have been engaged in this type of work for 10, 15 and 20 years.

In making up analyses of the building market, and in judging the volume of construction taking place at any one time, the *American Builder* field staff is of great importance. Building figures as commonly quoted in newspapers are based on projects in cities where permits are required and contract news is readily obtainable. Such cities have been called the "known market" and represent about 47 per cent of the nation's entire population. The remaining 53 per cent lives, works and builds in the smaller cities, towns and rural communities where no building permits are required. The building needs of this bigger half of the population constitute the "hidden

market" in the building field; and the most accurate gauge of the volume and character of activity in this market is the sales record of the local retail building supply dealers who serve this market. The *American Builder* field staff is in daily contact with these dealers and with their best customers, the local contractors, builders and carpenters. When the *American Builder* field staff reports that dealers are selling increased volume of materials, it is obvious that building is going ahead.

The *American Builder* field men are prepared and willing to give information or receive it. They can talk about your problems with real knowledge of them. They are willing and anxious to promote better business and better co-operation and will do everything in their power to help their building industry friends.



CHARLES R. HARTUNG



V. L. ANDERSON



L. O. ANDERSON



ONE of the low rambling Mayfair Acre homes which has set an unusually successful style note in Westchester County New York.

7 Out of 8 Choose House With-

ONE of the most successful home developments in wealthy Westchester County, north of New York City, is Mayfair Acres, where 36 houses were sold the first seven months of this year. In contrast with the rather disappointing building activity in this section, the success of Mayfair Acres has been phenomenal. Analysis of this development's features reveals several reasons why it is forging ahead.

In the first place, the prices are right. They range from \$8,000 to \$13,900. Many other builders have made the mistake of getting into much higher brackets. One reason the price of the Mayfair houses is low is that they leave out the basement, where the owner desires. According to Gustave A. Feuerstein, treasurer, their analysis of costs showed that they could save \$500 by leaving out the basement. Seven out of eight people, when told of this fact, decided to omit the basement, either reducing the cost that much or putting the \$500 to work above ground where it would be more productive.

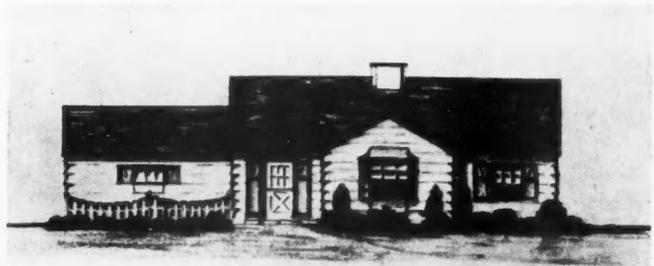
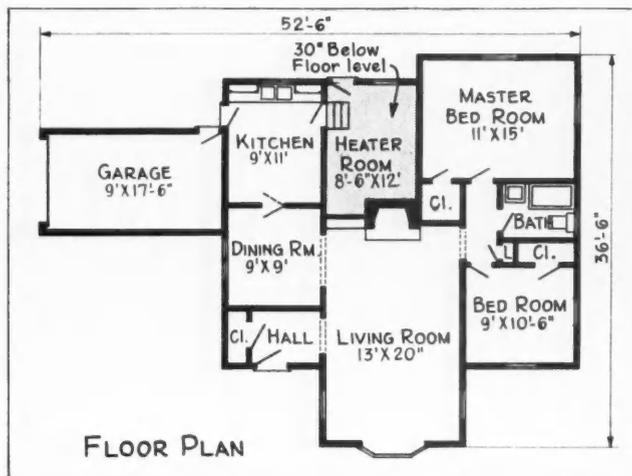
Floors of the basement-less houses are 30 inches above ground. The ground is well tamped and covered with a

two-inch layer of gravel concrete. A heater room of approximately eight by ten feet is usually provided, which has a six-inch concrete floor. The Reynolds Air Conditioning unit is placed on this floor at ground level, and ducts leading to and from the registers are carried with minimum expense and difficulty under the floor joists.

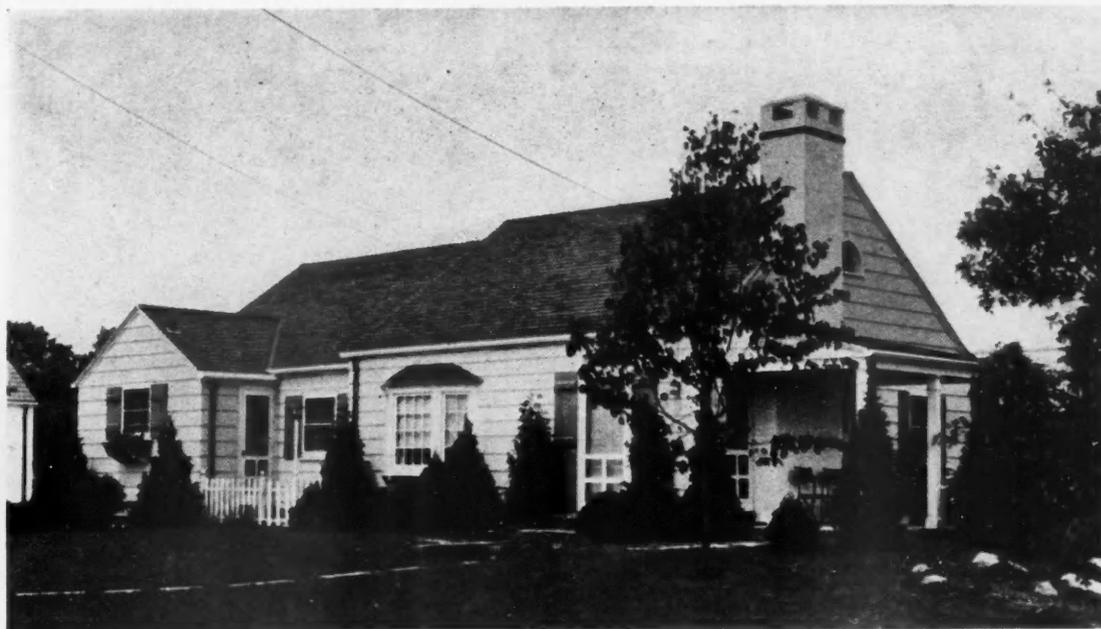
Another feature of Mayfair Acres that appeals to customers is the large plots, the smallest being 100 by 150 feet. The Colonial houses designed by Earl G. Nelson are very appealing and are a major factor in sales.

Still more important in the success of Mayfair Acres is the fact that they have something dramatic to sell. The builders are putting up Reynolds Specification homes, which include fire-safe joists and precast floor slabs, air conditioning with prefabricated ducts, Ecod reinforced plaster base, metallation for insulation.

Mr. Feuerstein is justly proud of the complete home building service rendered by his organization. Several conferences are held with a prospective customer to crystalize his ideas. The preliminary sketches are prepared by Earl Nelson, the architect associated with the company.



SKETCH above and plan, at left, illustrate one of the small basement-less houses now under construction at Mayfair Acres. Floor is raised 30 inches from ground, which is covered with two-inch layer of gravel concrete. Furnace is set in heater room at ground level. Placing of warm air ducts and returns is greatly simplified.



ATTRACTIVE COLONIAL very reasonable in cost. It was designed by Earl G. Nelson and built by Homecraft for Mayfair Acres.

out Basement to Save \$500

By taking the customer through other houses already sold or through the model houses usually open for exhibition, the different requirements of the owner are brought out. Then Feuerstein and his associates guide the home owner through the entire process, drawing the plans, arranging the financing and supervising every detail up to and including turning over the key of the finished house. This plan combines the good features of both contract and speculative building.

At least one model home is kept open for inspection at all times by the simple expedient of securing in advance from a customer permission for his house to be open for a month or some other specified time after completion. Under this arrangement when a house is so

opened advertising features the fact that the owner invites inspection. One of the most recent advertisements shows a picture of an attractive Colonial which has just been finished, with the title, "A Proud Owner Invites You to Visit His Home in Mayfair Acres." The text reads:

"'The Newport,' built for a proud owner who has permitted us to show his home fully furnished by Mallary, is a home representing the progress of the 'Homecraft Built' method of building. It is the result of the practical application of a homeseeker's desires culminating in the finished product by competent craftsmen, under the supervision of a staff acting as the owner's personal representative throughout every stage of construction."



THREE VIEWS of heater room and floor construction. At left: looking across from first floor level. Middle: view from floor of heater room looking under house. Right: detail of floor construction.

Entire Town Is Modernized

Face-Lifting Makes Charming New Spanish Street of Once Prosaic Old Business Section

A REMODELING project, believed to be unique in the United States, is in process of completion at Weslaco, Texas, which puts this border city in a good position to capture a large share of the flow of tourist trade expected during the celebration of the Texas Centennial.

Leaders of the town, who wanted to dramatize for its tourist appeal the romantic history of this region once dominated by Spain and Mexico, hit upon the scheme of transforming the main business section into a Spanish street by remodeling the building fronts along the lines of Spanish architecture.

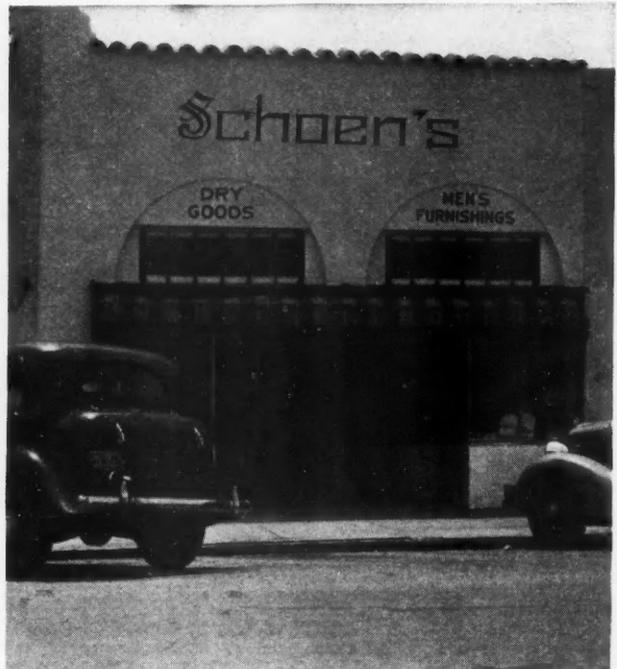
Spearheads of the drive which followed were W. D. Miles, field representative of the Federal Housing Administration; T. G. Cressner, chairman of the Chamber of Commerce sponsoring committee; and Harry C. Ratliff, secretary of the Chamber of Commerce. Through the efforts of these men, skepticism and depression-born lethargy were overcome and the ambitious project launched.

On both sides of the principal business thoroughfare for two blocks the eye of the visitor will be met by gay colors of stucco, belfries, steeples, domes and other forms of Spanish architecture. In order to give a continuous view of Spanish architecture, vacant lots will be masked by stucco fences.

The remodeling is of the front exterior only, making the job comparatively simple and inexpensive. The old walls were stuccoed, trimmed with red tile and a little contrasting color, and distinctive Spanish features added, such as imitation rafters jutting from the wall-front frontier fashion or some similar decoration.

The work is being financed under Title 1 of the National Housing Act through the First National Bank of Weslaco. In nearly every case tenants agreed to share one-half the monthly FHA payments.

The cost, in general, ranges from \$125.00 to \$287.00 per building or about \$10.00 to \$12.50 per lineal foot for a one story building.

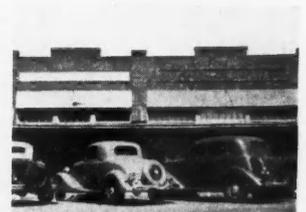


A TYPICAL business street change after Weslaco, Texas, rebuilt itself in Spanish style.

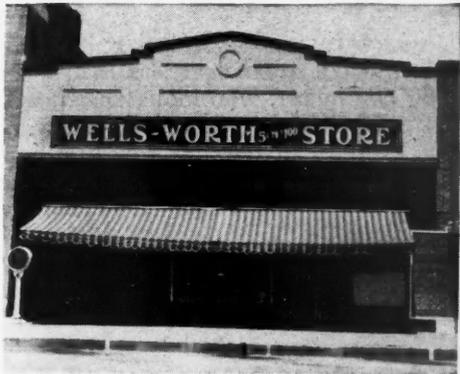
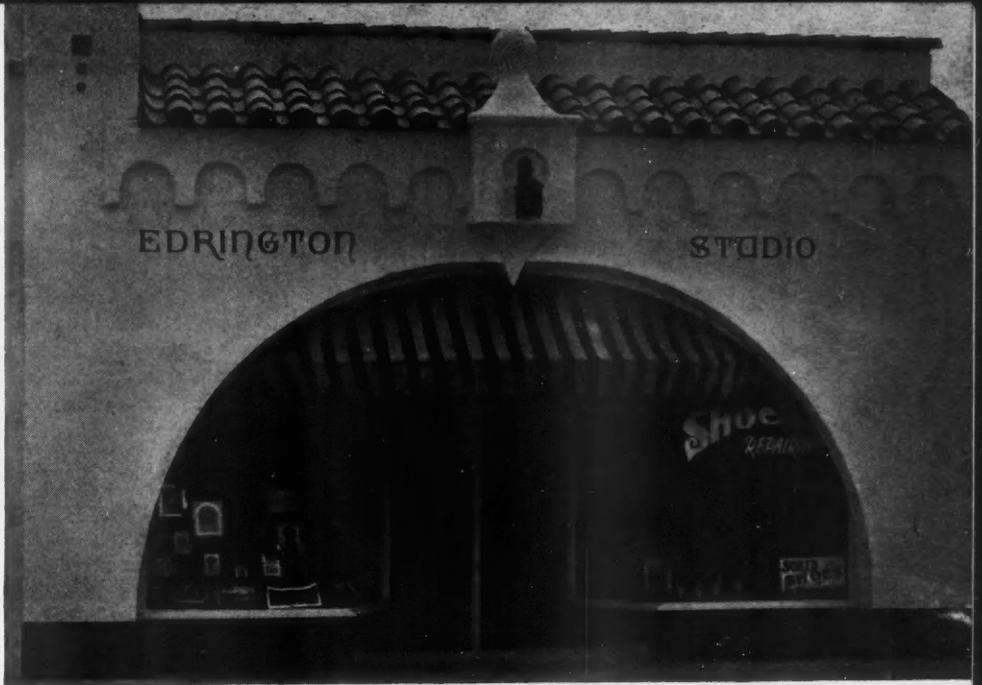
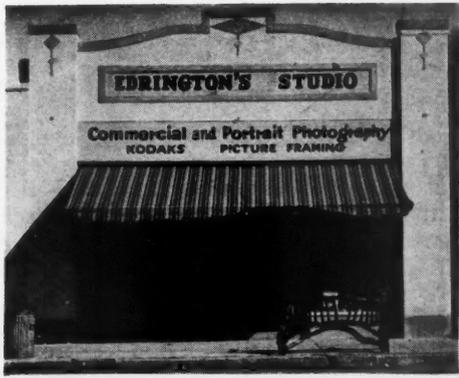
General contractor for most of the work was Ray O. Carter. R. Newell Waters was the architect.

Owners feel that a value far out of proportion to the cost has been added to their buildings; while businessmen report appreciable business increases due to the undoubted attraction of the eye-catching alterations. Thus it appears that Weslaco's investment in "Spanish atmosphere" has been a worthwhile one.

—John Low.



NEW Spanish fronts cost about \$10 per lineal foot; a paying investment.



WESLACO, TEXAS

Before remodeling: typical examples of the usual commonplace business district.

After remodeling: the same buildings now transformed by their attractive "Spanish fronts."



Recent Heat Wave Tests Low Cost

ON the afternoon of July 11, after five days of sweltering heat with unofficial readings in Milwaukee ranging between 106 and 110 degrees, I set out to check the inside temperatures of a dozen or so of the double-wall stone houses I have been building the past several years. I found these "Ageless Art" houses delightfully cool in spite of the extreme outdoor heat. Thermometer readings inside ranged from a minimum of 81½ degrees to a maximum of 83 degrees.

In order to make a comparison with ordinary veneer construction under identical conditions, a check was made at the same time of the inside temperatures of neighboring houses. These temperatures ranged from a minimum of 89 degrees to a maximum of 92 degrees, the average difference being 10 degrees between the insulated stone wall houses and ordinary construction.

Everyone will agree that 10 degrees difference is the difference between comfort and discomfort on a hot day. In order to accomplish this 10 degree reduction

in temperature an expensive refrigerating system would have been required.

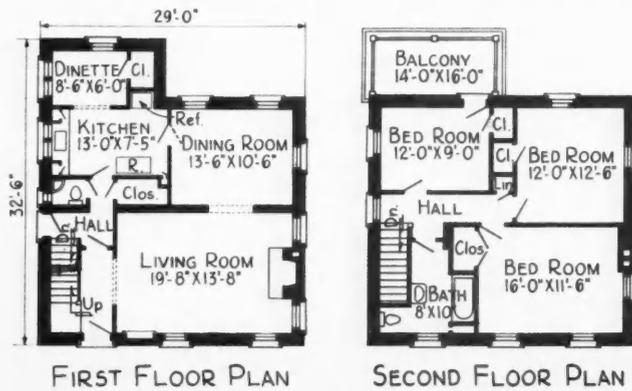
The well insulated house is not only comfortable in hot weather but also warm and thrifty in the winters, conserving fuel costs.

The winter of 1935-36 was the coldest in many years. During this severe winter "Ageless Art" homes set up some almost unbelievable records for comfort and economy. A five room bungalow, 28' x 40', was heated with four ton of coke at a cost of \$36.00. In addition to heating the home, this fuel also supplied the domestic hot water. A sizeable six room colonial home, with a stoker, burned 8 ton of stoker coal at a cost of less than \$58.00. A similar home was heated with oil at a cost below \$80.00. These costs are not exceptional but typical of the results obtained by "Ageless Art" home owners and are based on statements made by them.

"Ageless Art" homes cost no more to build than brick or stone veneer but a great deal less to live in.

The alert building contractor, who looks ahead, will realize the trend toward firesafe, permanent construction. He knows better than anyone that low first cost will probably mean higher ultimate cost due to the need for expensive repairs and maintenance. From my own experience, I believe the "Ageless Art" system of masonry construction is the only system that can come anywhere near competing with veneer construction in cost, at the same time giving the residence building

(Continued to page 106)

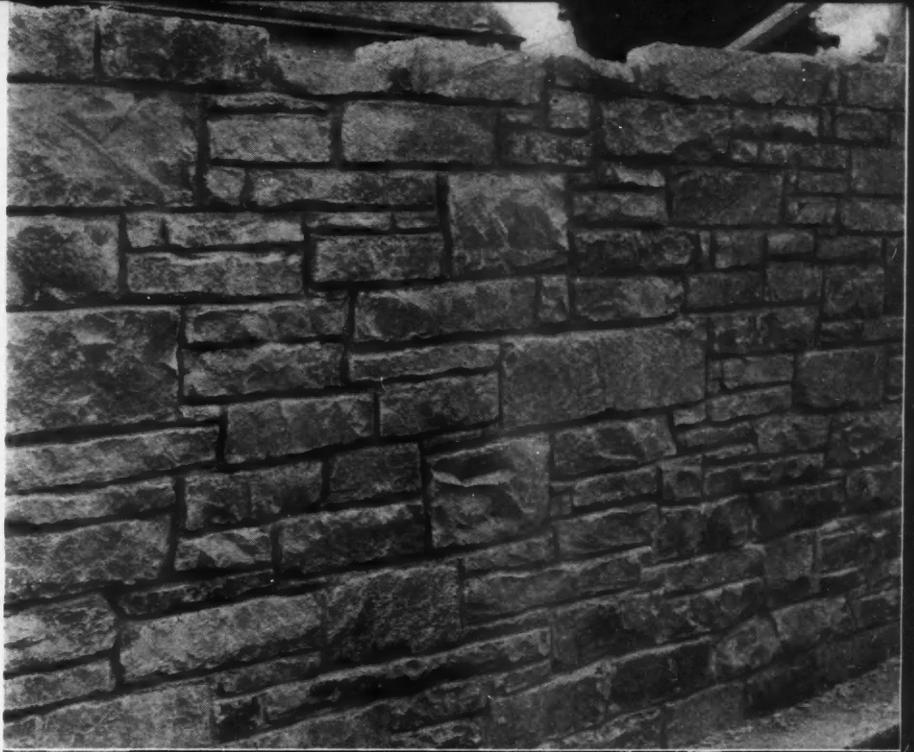


ONE of the Milwaukee "Ageless Art" Homes built by John D. Edwards which was "cool as a cave" during recent hot spell.



t Stone Walls

FINISHED OUTER WALL—This photo shows the finished outside wall of "Ageless Art" Stone Construction. The entire floor and roof construction is carried on this wall. The wall is a minimum of 8" thickness, but may range from 8" to 11" while the inside of this wall is rough and irregular, the outside is straight, rugged, and beautiful.



IRREGULAR INNER FACE—This photo indicates the irregularities of the inside surface of "Ageless Art" Bearing Walls. This is the only construction whereby it is possible to utilize solid stone walls of irregular dimension. Eliminating the need of cutting the stone to a definite dimension is a vital factor in the savings effected by this double wall construction.



INSIDE LINING WALL—This photo of "Ageless Art" Double Wall Construction tells a big story. Against the inside of the outer wall is a blanket of waterproof sprayed-on insulation averaging $\frac{1}{2}$ " to $\frac{3}{4}$ " in thickness. The inner wall, which consists of a 3" light weight cinder or gypsum block, covers the irregularities of the stone wall and provides a plaster base.



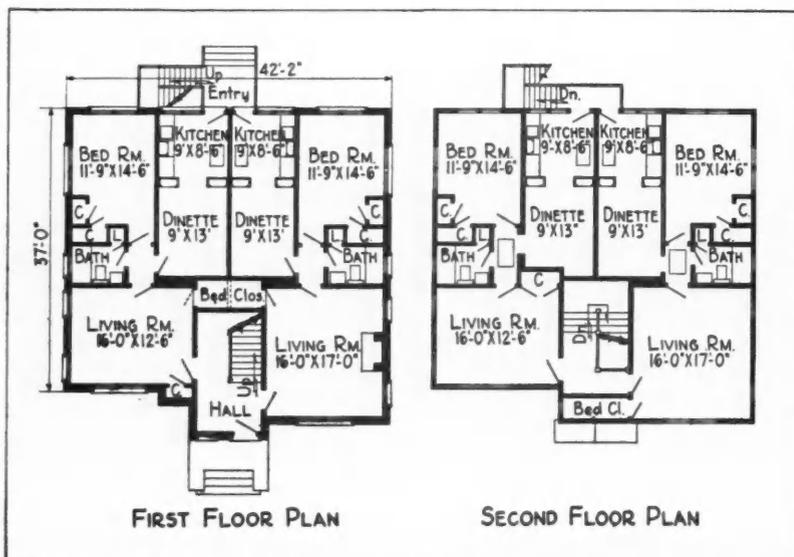


INCOME PRODUCER

J. Peyton McKay Apartments

Jackson, Miss.

FOUR 3-room apartments of modern layout and high efficiency are built into this home-like structure. Brick veneer for first story and siding above cover a stud frame. There is no basement. Winter heat is provided by gas burning floor furnaces in each apartment. Summer cooling is effected by means of Emerson Exhaust wall units and a Reed attic ventilator. Laundry facilities are in garage at rear. First floor closets provide for extra bed storage.



Architect—White's Lumber Yard

Design Dept., Russell E. Hobgood, Mgr.

Contractor—L. T. Nicholas

Materials furnished by

White's Lumber Yard, L. C. Gilbert, Mgr.

Cost Complete—\$10,500.



25 YEARS AFTER YOU BUILD,
WILL YOU BE ABLE TO SAY —

*“the sheet metal parts are
still in good condition?”*



● That's what the owner of this home in Little Falls, N. Y., can say today—because, when it was built in 1911, Toncan Iron was used for the eaves, downspouts, ridge rolls and other sheet metal work.

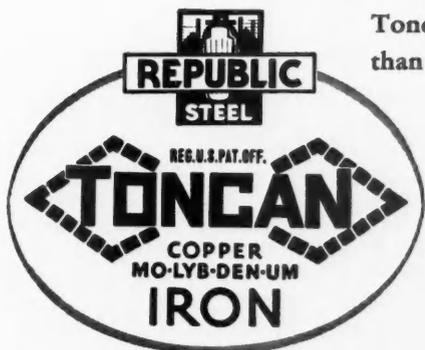
Twenty-five years' service is not unusual for this rust-resisting metal. In buildings of every classification and in many branches of industry, Toncan Iron installed more than 25 years ago is giving good service today.

Toncan Iron resists rust better than any ferrous material in its

price class—because it is an alloy of refined open-hearth iron, copper and molybdenum. Furthermore, it is equally rust-resistant throughout its entire thickness.

You can build long life into the sheet metal parts of your next building with Toncan Iron. You can protect it against costly repairs and give it increased value for sale now or in the future.

“The Path to Permanence” tells many interesting facts about this long-lasting sheet metal. Write for a copy.



Republic produces plain carbon steel, copper-bearing steel, copper-bearing iron, Toncan Copper Molybdenum Iron and Enduro Stainless Steel sheets. Also plain carbon steel, copper-bearing steel and Toncan Copper Molybdenum Iron Pipe.



VISIT THE REPUBLIC EXHIBIT AT THE GREAT LAKES EXPOSITION, CLEVELAND, OHIO, JUNE 27—OCT. 4

When writing Republic Steel Corporation for further information, please address Department AB

Diminishing Costs and Increasing Comforts

NO one knows better than the general contractor that with expansion in operations costs must be more and more closely watched. Probably no one is better fitted to instruct the homeowner in this matter than this same building contractor. Since it is a fact that the average owner is coming to contemplate not only complete winter air conditioning for the home but is reaching out for summer conditioning as well he must be shown that mechanical equipment to provide for this must be built for efficient service.

There is no longer the old feeling that if we get enough heat, any kind of heat, to give a dry-bulb temperature of 70 degrees in the cold weather that the house is well equipped. Nor do we still believe that drafts and cold spots are dispensed by providence. Most of us are sure that we would prefer to build or at least occupy houses which could show the proper degree of warmth and percentage of humidity during the winter, with an equal feeling of comfort in all spots and no drafts. And if our suppressed desires point to an equally comfortable house for the summer's disagreeable heat, then very little persuasion may be needed to gain our desires' expression.

Two of the chief reasons for going the full distance in equipment for heating and cooling are the necessity for improving the property value on a generous long-term mortgage contract and equipping with heating, and cooling, units which are built to diminish operating costs. It is heard generally that real estate is the best of present investments. Even if that were only a feeling the rise in values on improved property would induce the present builder, if wise, that substantial equipment adopted now would proportionately increase the later valuations. In regard to equipping with heating and cooling units that are built to reduce operating costs we mean just that, and we refer to any heating equipment that has ever been used.

The question of fuels may lead to oil, gas, coal, or coke. The question of mediums would include steam, hot-water, warm air, and, in some instances, electricity. These are all very much on the job.

Whenever a chimney smoked it used to be said that the householder was sending a good part of the coal up the chimney. If he fired better and the chimney ceased to smoke nearly everyone was content. But that is no longer the case. When a modern piece of heating equipment is installed and operating the manufacturer wants to call around and "take readings." He wants to see that not only is his equipment sufficiently insulated to direct the heat as it should be directed, that it is properly and efficiently operating, but he wants to know whether there may be features in the construction of the

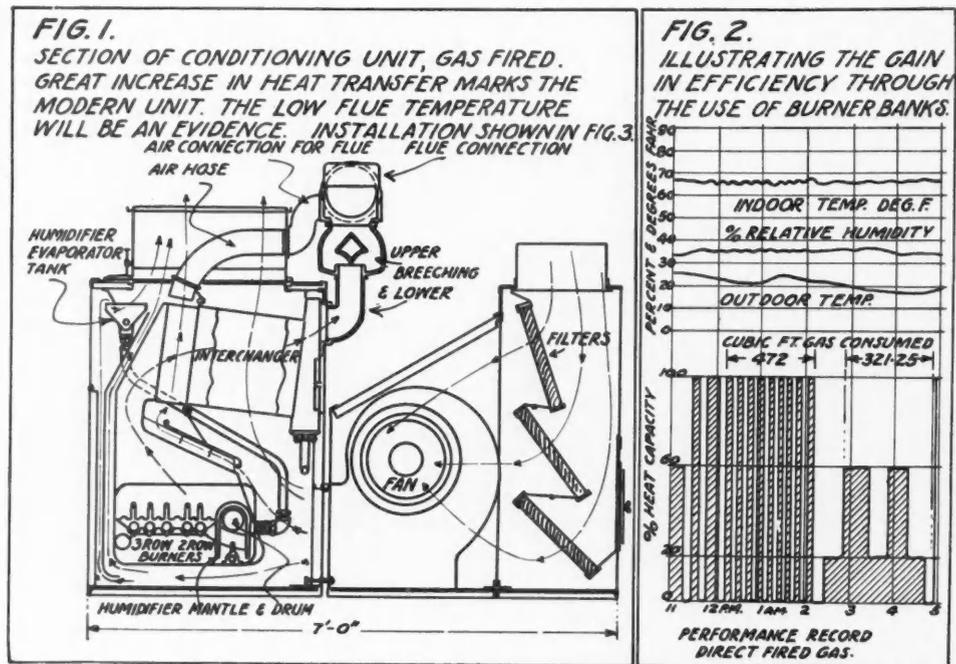
By **V. L. SHERMAN**

Department of Mechanical Engineering
Lewis Institute of Technology, Chicago

house that work adversely. Some of these justly snooty manufacturers are not content with the "readings" of one or two seasons, they want to follow the plant for at least a year. Well, with their research departments having prodded them so much of late years it is hardly to be wondered at.

Picture the once rule-of-thumb furnace installation of a few years ago, and then note the layout in Figures 1 and 3 and the graph or performance chart in Figure 2. With the old-time furnace the firepot must be oversized for any guarantee of comfort, if the casing has large enough and short enough leaders. And that was not the end of the ifs. But times have changed. What looks very much like the old-time furnace is still being installed. There is a difference, however. The manufacturer or his agent wants to know about the house first, its layout of floors, and provisions are to be taken against any awkwardness in heating. He wants to know what coal you burn, and is ready to adapt his equipment to oil, gas, or stoker firing. And lastly he pries into your ability as a fireman. If you are not proficient he is willing, more than willing, to give you complete instruction. Then he may hint to the gentleman who sells you fuel that his help would be welcome and that he might keep an eye on operations.

The chief motives for all this may be selfish, if you like to put it that way, but the heating industry has expanded and developed because so many instances have been shown of diminishing costs and increasing comforts. Even with the most elementary types of plants



"... We wouldn't be without SKILSAW on any job!"—says MR. JULIAN

TEL. KEYSTONE 2063

JULIAN CONSTRUCTION CO.
GENERAL CONTRACTORS
1786 SUNNYSIDE AVE.
CHICAGO

August 12, 1936.

Skilsaw, Inc.,
3314 Elston Avenue,
Chicago, Illinois.

Gentlemen:

Please accept this letter as a confirmation of our order phoned today for another Model E SKILSAW, to be delivered to our new Lincolnwood job.

I just want you to know how my brother and I feel about SKILSAW. We now have five MODEL E's. The first was bought about ten years ago and, as our business grew, we continued to buy them because of the satisfaction given and the time and money that they saved for us.

We have been surprised at the service they have given us. We certainly abuse them plenty. They are used on every job, large and small, — on new and remodeling work. Not only do we use them for most cuts in framing the job but also for cutting stone, tile, concrete and slate.

We always take SKILSAW savings into consideration on every job we figure. We believe that this is an important reason why we are one of the very few builders in this area to have had practically continuous work during these past five years.

We continue to buy SKILSAWS because of the wonderful improvements you have made and because they are the best there is. We wouldn't be without SKILSAW on any job!

Yours truly,
JULIAN CONSTRUCTION CO.

Alfred C. Julian

The experience of Mr. Julian, who is one of the leading building contractors in the Chicago area, is typical of the experience of every SKILSAW user. SKILSAW does the job quicker, better and cheaper than can be done by hand—it reduces costs, it increases profits, it pays for itself on the first job! Thousands in use. Cuts wood, metal, stone, compositions. Made in 7 powerful sizes. See them at your hardware dealer's.



● Cuts off 222 ft. of 2 in. decking in only 12 minutes!

● Rips a 2 in. plank, 12 ft. long, in only 40 seconds!

● Crosscuts ten 3 x 4 in. studs in only 40 seconds!

● Bevels thirty 2 x 12 in. rafters 45°, in only 10 minutes!

● Cuts out a 16-step stair stringer from 2 in. rough, in only 10 minutes!

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HEATING-AIR CONDITIONING-PLUMBING AND WIRING

care in design and in operation have shown great results since the necessity of that care has been recognized. But it remains a fact that when design goes further and means are used to grasp all advantages the costs are further diminished.

In Figure 1 is shown the section of an air conditioning unit similar to the one shown in the photograph, Figure 3. This unit is gas fired for heating and supplied refrigeration by the unit shown at the right in the photograph. To size up the equipment we may say that the photograph shows a trifle more than half the basement width of a house about 32 feet square. This unit can supply 150,000 British thermal units per hour, delivering air (at full load) at 185 degrees, with 1215 cubic feet per minute (Cfm) and an available static pressure of .16 inches of water delivered from a fan driven by a $\frac{1}{4}$ horsepower motor. The amount of water evaporated for humidifying at full load is $4\frac{1}{2}$ pounds or .54 gallons per hour.

Supposing that this particular unit was found not quite suited to another house having about the same heat loss. The motor horsepower could be increased to $\frac{1}{3}$ h.p. or $\frac{1}{2}$ h.p., the fan speed stepped up from 390 revolutions per minute (rpm) to 480 or 576, the amount of air delivered increased from 1215 cfm to 1500 with the available static pressure rising to .23 inches or .33 inches. The temperature of the delivered air could then be lowered from 185 degrees (at full load) to 167. The flue gas temperature would drop from 160 degrees (at full load) to 150 degrees.

It is a great mistake for some of us to suppose that units are built to supply heat or coolness by fixed requirements. Just as in the previous case the same heat

requirements may call for different delivery temperatures, different static pressures, and so on. But units are built so that slight interchangeability plays a great part in suiting the unit to the needs. The common feature of all units which are reliable is complete control of the air used and of the fuel. The first of course is done by delivering air at known temperatures in known quantities and at known pressures and velocities. The second is done by controlling combustion and the transfer of heat from the gases to the air.

The transfer of heat is always the severe problem. Hasty design, careless construction, guesswork all cause failure here. One gentleman wants to know why, after a complete rebuilding of his furnace, the furnace casing insists on heating up around the cold-air boot. Just to be mean, for I know he is not that sort, it might be suggested that the entrance is too high and that it is the first time the firepot has really been clean. In fact any number of suggestions might be made, all of little or no value. But if the furnace is the product of a substantial manufacturer the owner himself would be no more eager to diagnose the case than the builder.

The control of the fuel, the combustion, and the heat transfer is a considerable subject when it comes to effectiveness and operating costs. Figure 2 shows a performance record with direct-fired gas heat operating by two different methods. At the top of the chart, which reads from 11 P.M. to 5 A.M. on a given day, there are the indoor temperature record, the percentage curve for relative humidity, and the outdoor temperature record. The shaded areas below indicate the performances of the gas burners. At about 11:30 P.M. the burners were set to the use of full capacity or nothing, and were

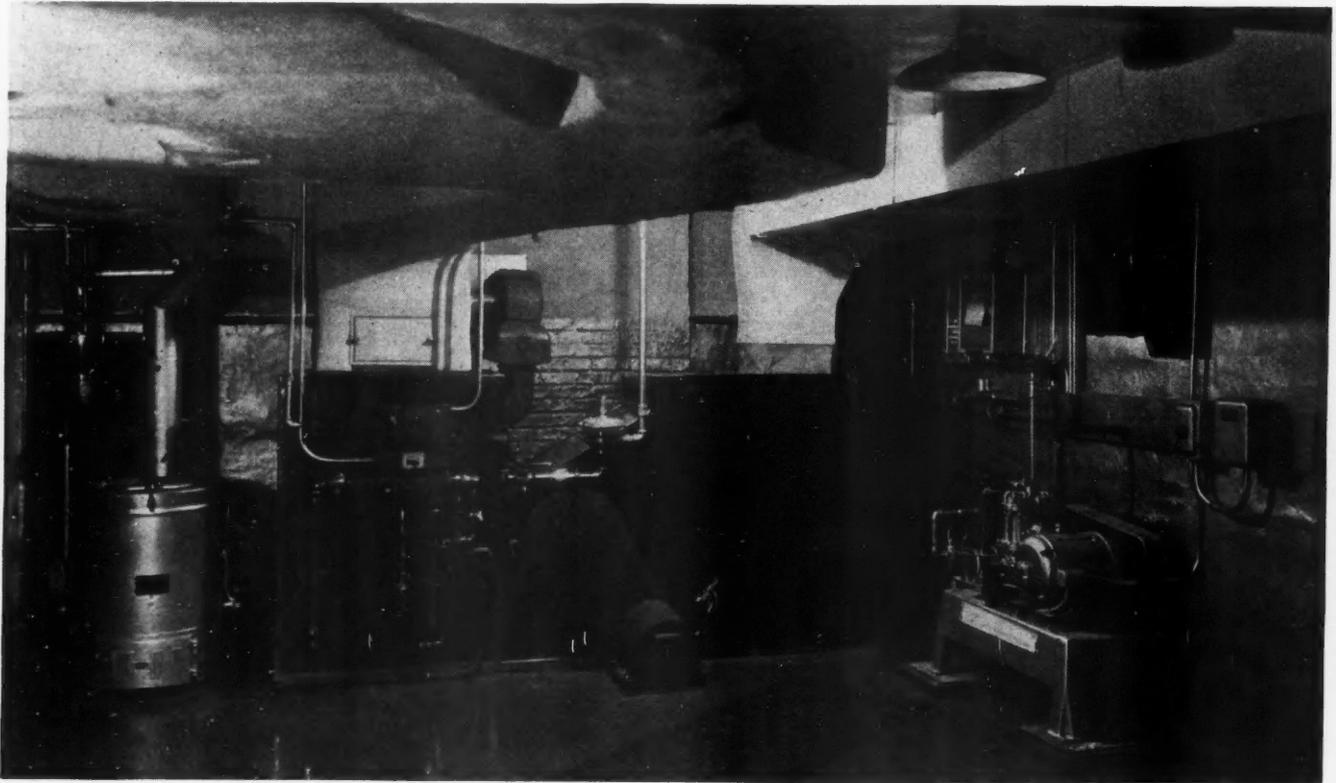


Fig. 3: Basement layout for complete air conditioning. Same type unit as shown in Fig. 1. Incinerator at left. Recording instruments on right hand wall.



OF COURSE YOU'RE BUILDING UP-TO-DATE HOMES *and there's nothing like gas for keeping them Modern!*



*There's
Nothing Like
GAS for*
COOKING
REFRIGERATION
WATER HEATING
HOUSE HEATING

Illustration from an advertisement in the "Modernize Your Home With Gas" campaign in national magazines of 14,000,000 circulation.

WHETHER the homes you build represent the last word in functional planning or take their lines from more conventional designs, modern gas equipment will make them *stay* up-to-date as long as they're lived in!

For the reputation of gas as the ideal fuel goes back literally for generations and has earned it an established place in more than 15,000,000 homes. Continuous development of appliances has made its use truly modern in terms of convenience. Up-to-date gas ranges with

automatic lighting, dependable oven heat control and effective insulation take much of the worry and bother out of cooking. Gas refrigeration offers the last word in silent, simplified operation in addition to its proved economy. And modern automatic gas water-heating and house-heating equipment makes gas the perfect answer to every domestic need for heat. In addition to its firmly established rep-

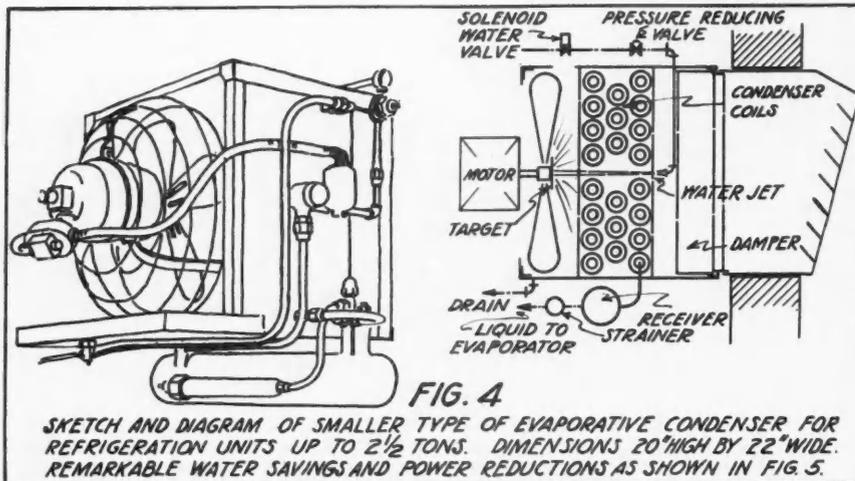
utation for efficiency and dependability, gas now offers worthwhile economies in homes completely equipped to use this ideal fuel.

Your local gas company will gladly cooperate with you in the selection and installation of modern gas appliances. Make up-to-date gas equipment a standard item in your specifications—then you'll know the homes you build will *stay* modern!

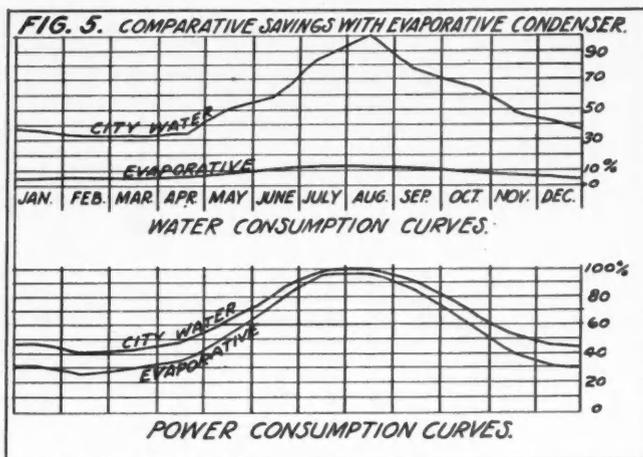


AMERICAN GAS ASSOCIATION

MECHANICAL EQUIPMENT FOR 20-YEAR FINANCED HOUSES



SKETCH AND DIAGRAM OF SMALLER TYPE OF EVAPORATIVE CONDENSER FOR REFRIGERATION UNITS UP TO 2½ TONS. DIMENSIONS 20" HIGH BY 22" WIDE. REMARKABLE WATER SAVINGS AND POWER REDUCTIONS AS SHOWN IN FIG. 5.



so operated by the controls until about 2:10 A.M. During a period of two hours the gas consumption amounted to 472 cubic feet with the outdoor temperature ranging about 23 degrees. During this time the indoor temperature and the percentage of relative humidity ranged within a couple of degrees but with enough comparative oscillation to indicate a very efficient air circulation.

However, even taking these temperature and humidity vibrations with a grain of salt, it would appear that the same unit when operating under a system of 20 and 60 percent capacity, instead of all or nothing, controlled a later two hour period of lower outdoor temperatures with less variation in house temperatures and humidities with the gas consumption reduced nearly 32%.

This chart is not presented as a "bear story" but to point out the case of rapid rise and fall in heat transfer. When heat is to be delivered the amount delivered is mainly controlled by the differences in temperatures between the combustion side and the air track. Aggravation of this difference in both directions coupled with continued air circulation through the house might cause the jittery curves for temperature and humidity. It surely would cause excessive gas requirements to meet rapid temperature variations within the unit. But still more serious would be the exaggerated air delivery temperatures which cause cold and hot drifts of air to fill a room much to an occupant's discomfort. The right amount of heat to be used and the right amount of air to be used are not subjects for guesswork.

It may be that by the time this is in print any suggestion

of summer heat and its conquest will be without attraction. But with the chance of a further conviction in the matter of summer cooling let us add a few words about refrigeration and the reduction in costs of operation. Some means must be used, of course, to get rid of the heat. To do this the liquid refrigerant under pressure is allowed to expand into the cooling coils, absorbing the heat from the air surrounding the coils because of the great loss of its own heat during expansion. The refrigerant, then, must be returned to the compressor and leaves the latter, in its circuit, as a gas at higher pressure but hot. To condense the gas and to remove the heat picked up through the cooling coils and

through its compression considerable heat must be removed from it. This is done by means of a condenser where the heat can be transferred to surrounding air or to water flowing over the pipes.

The temperature of the air passed through the condenser has a great deal to do with the quantity of heat transferred from the condensing coils, and the amount of water used, if that is the cooling medium, also has a great deal to do with the quantity of heat transferred. Where the water rates are high it has been the fashion to sink wells, both for lower temperature water and lower condensing costs. But since it is just as possible to absorb heat by means of evaporation as it is by expansion it has been found that by blowing a mist of water across the coils there is sufficient evaporation on the surface of the coils to remove the heat.

In well built "evaporative condensers" the water left unused in evaporation is very small. And, on the other hand, the amount of water used by evaporative condensing as compared to that used by gas to water transfer is only about one-tenth. The condenser shown in Figure 5 is for a 2½ ton unit. Its dimensions are 20 inches high, by 25 deep, by 22 wide. This is certainly not very large. Five larger sizes are built in this type of condenser, giving quite a capacity range.

Throughout this summer, and even previously, it has seemed that inquiries regarding new construction and alterations have so largely taken the improved methods and heating and cooling for granted that the majority have asked about insulation. It must be a general satisfaction that the trend in improvements along one line of equipment is being so closely tied up in our minds with improvement in construction. Of course it is only reasonable to expect generous reactions toward ourselves in building when the conditions of financing are so generously improved. Substantial mechanical equipment is that part of the home which should be stressed. It has, more than ever, proved the deciding factor in the real worth of a home.

The improvement in construction which has come with improvements in methods of financing shows also in the improvements in planning for the future. What used to be called "unit" houses which provided for additional space at a future date to come within the original plans is now quite common. It is now just as common to provide for future cooling in homes which are begun with modern heating equipment only. It is the safest bet, requiring little alteration for the later installation and little additional expense comparatively.

IF YOU BUILD A HOUSE
LIKE THIS



WHAT TELEPHONE ARRANGEMENTS
WILL YOU SUGGEST?

FOR A FAMILY
LIKE THIS



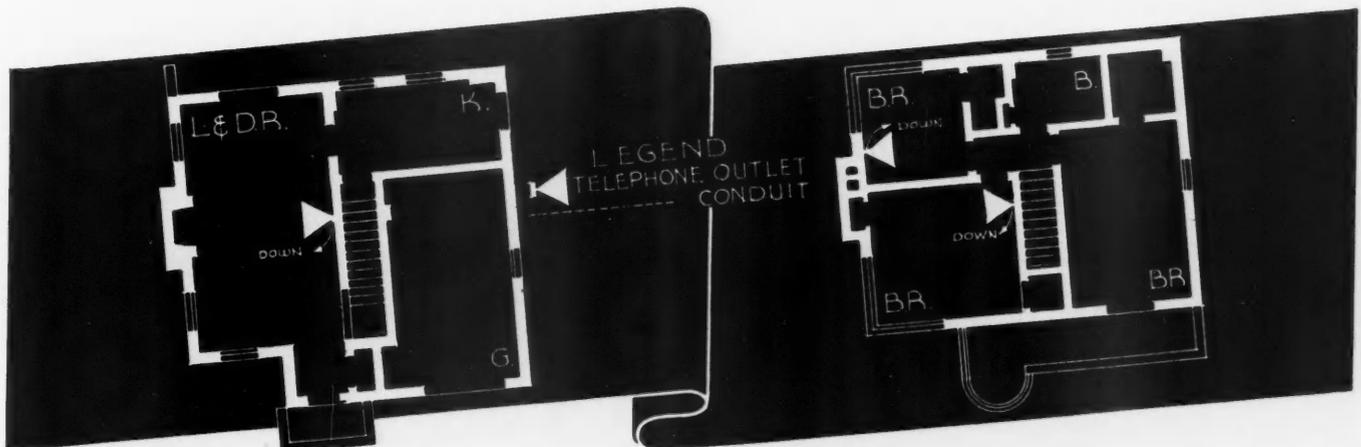
HERE'S a modest house for a family of young moderns—father, mother, two daughters, aged three and five. Reinforced concrete construction. Modern design, but not extreme. *How would you plan the telephone arrangements?*

With the use of concrete and many other modern building materials, it is much more satisfactory to provide ample telephone facilities during construction.

A conduit or pipe from the basement to telephone outlets. Two or possibly three outlets should be sufficient for present and future

needs. One in the upstairs master bedroom, of course, since mother's going to do the housework. Possibly one in the guest-room for the convenience and privacy of visitors and use by the children later, and one in the combined living-room and dining-room to take care of the first floor.

Your local telephone office will be glad to furnish any further information regarding conduit for moderate-priced houses such as this, as well as for more pretentious dwellings. Just ask for "Architects' and Builders' Service."



SHOPCRAFTER'S Corner

Things To Build for Profit or Pleasure

WHILE people are beginning to think about their own housing for the coming winter and either putting the finishing touches on new homes or fixing up present quarters before cold weather actually arrives, it is a good time to consider housing for the family's faithful friend and companion, the dog. In line with requests for such a project, the Shopcrafter's Corner this month presents working drawings and a bill of material for a neat and well designed dog house. It will be a welcome item for use by anyone building it, or in some instances it will find a ready sale to neighboring pet owners and to fill orders secured through breeders.

The bill of material at the right lists the ordinary stock lumber in proper sizes for minimum waste. Of course it will be necessary to add such items as nails and paint or stain; in choosing the finish, the color scheme of the house, garage, etc., will be a good guide. The perspective and elevations below show dimensions and construction details. Battens over T&G joints make the house weather-tight and at the same time lend a neat appearance.

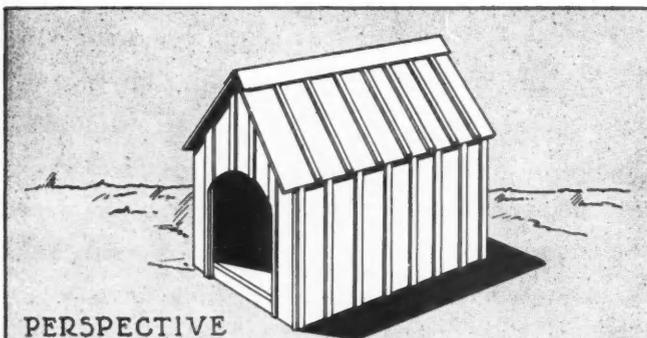
BILL OF MATERIAL

FRAMEWORK:

- 4 pcs, Sill and plate, $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times 22\frac{1}{2}''$
- 4 pcs, Sill and plate, $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times 36\frac{1}{2}''$
- 2 pcs, Front braces, $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times 10''$
- 4 pcs, Rafters, $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times 15''$
- 1 pc, Ridge-board, $1\frac{3}{4}'' \times 3\frac{1}{2}'' \times 36\frac{1}{2}''$

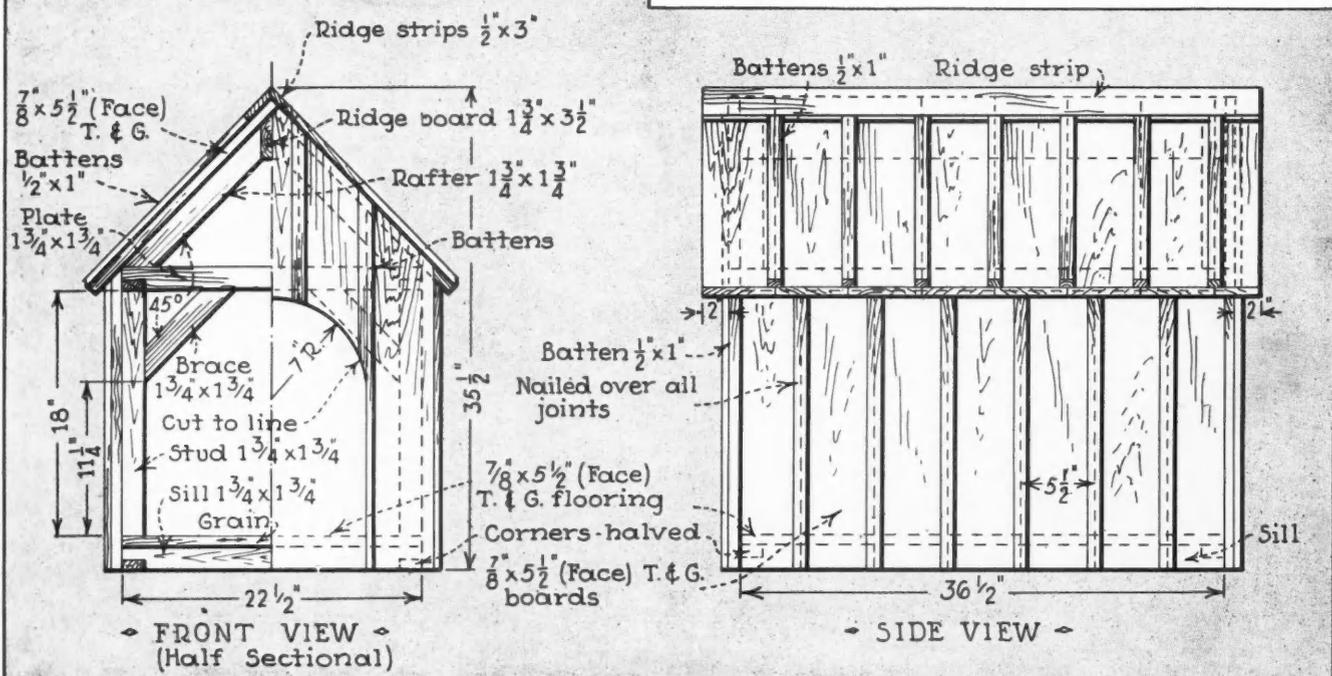
BOARDING:

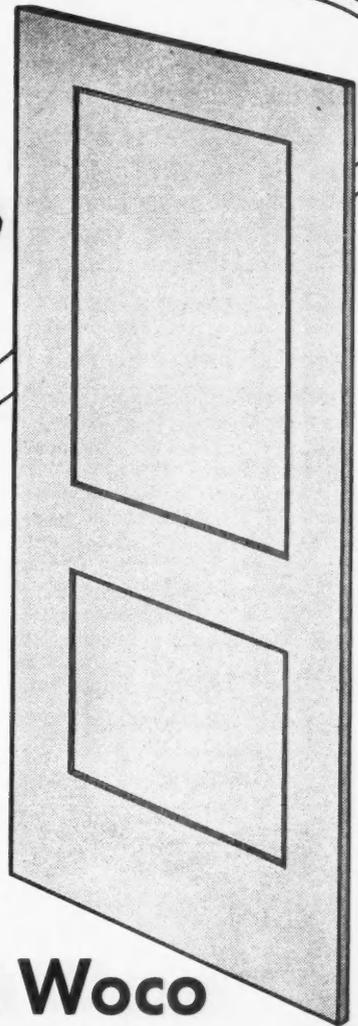
- 14 pcs, Long sides, $\frac{7}{8}'' \times 5\frac{1}{2}''$ (face) T&Gx22''
- 1 pc, Ends, $\frac{7}{8}'' \times 5\frac{1}{2}''$ (face) x34'' T&G
- 2 pcs, Ends, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 33''$ T&G
- 4 pcs, Ends, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 27''$ T&G
- 2 pcs, Ends, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 20''$ T&G
- 1 pc, Ends, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 14''$ T&G
- 7 pcs, Floor, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 22\frac{1}{2}''$ T&G
- 8 pcs, Roof, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 20''$ T&G
- 8 pcs, Roof, $\frac{7}{8}'' \times 5\frac{1}{2}'' \times 19''$ T&G
- 1 pc, Ridge-strips, $\frac{1}{2}'' \times 2\frac{1}{2}'' \times 42''$
- 1 pc, Ridge-strips, $\frac{1}{2}'' \times 3'' \times 42''$
- 12 pcs, Battens, $\frac{1}{2}'' \times 1'' \times 17\frac{1}{2}''$
- 14 pcs, Battens, $\frac{1}{2}'' \times 1'' \times 17\frac{1}{2}''$
- 4 pcs, Battens, $\frac{1}{2}'' \times 1'' \times 28''$
- 2 pcs, Battens, $\frac{1}{2}'' \times 1'' \times 33\frac{1}{2}''$
- 2 pcs, Battens, $\frac{1}{2}'' \times 1'' \times 14''$



PERSPECTIVE

BILL OF MATERIAL and working drawings for building a well designed dog house. Design from "Things to Make for the Lawn and Garden," William W. Klenke, Manual Arts Press.





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Troubleproof Service!

ONLY 10-POINT DOORS PROVIDE ALL 10 POINTS OF SUPERIORITY

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- 2** No loose or torn grain.
- 3** PERFECT, UNIFORM DISTRIBUTION OF GLUE IN DOWEL HOLES AND CORNER JOINTS.
- 4** Smooth, clean mouldings around panels—no ragged edges.
- 5** No warping or swelling in Laminex construction; and maximum resistance in Woco solid designs.
- 6** No open joints.
- 7** Heavy dowels to give 30% more glue contact area.
- 8** Smooth, perfectly sanded finish.
- 9** Carefully selected woods—scientifically dried—easy to mortise and gain.
- 10** TRADE-MARKED, GUARANTEED AND BACKED BY MORE THAN 45 YEARS' EXPERIENCE.

When you install Laminex or Woco 10-Point Doors, you are sure of a satisfactory job.

Scientifically designed by door engineers, 10-Point Doors won't warp or sag—joints stay tight. When properly installed, these doors are guaranteed troubleproof. Ten points of superiority make these doors an outstanding value.

You can get Laminex and Woco 10-Point Doors in styles to meet every requirement. Send the coupon for further information.

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Osgood 10-Point Doors.

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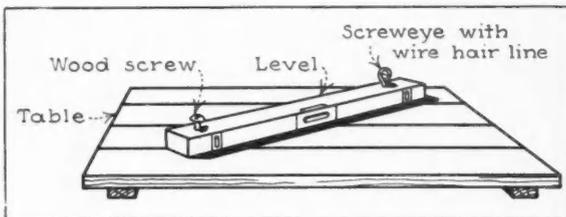
City..... State..... AB9

PRACTICAL JOB POINTERS

A READERS' EXCHANGE of tested ideas and methods, taken from their own building experience. Two dollars or a year's subscription to American Builder is paid for each item when published. State business connection or trade.

Makeshift Level Serves in Emergency

WHILE working on a job out of town my builders level was knocked over and broken. I could not get it repaired for 10 to 15 days, elevations had to be given and I was at a loss, so I constructed the above "makeshift" level which worked very satisfactorily, and the work went on uninterrupted. The table was screwed to the tripod and set level. The height of the wood screw head must be the same as the wire on the screw eye. Sighting on the rod is done through the screw eye and the top of the wood screw with remarkable accuracy. I have used this many times on small building jobs, and wish to pass the idea on to the readers of the *American Builder* "Practical Job Pointers" page.—WM C. WALLACE, Architect and Builder, Kansas City, Mo.



EMERGENCY builders level made of plumb and level.

Compact Kitchen Cabinet

A KITCHEN cabinet, as seen in illustration and built under a stair landing, consists of one unit of revolving shelves, one unit of shelves on panel equipped with rollers, two double drawers and tills on main doors.

Any article on the revolving shelves can readily be reached by turning shelf unit, thus bringing the article wanted to the front of cabinet. The shelves on panel equipped with rollers



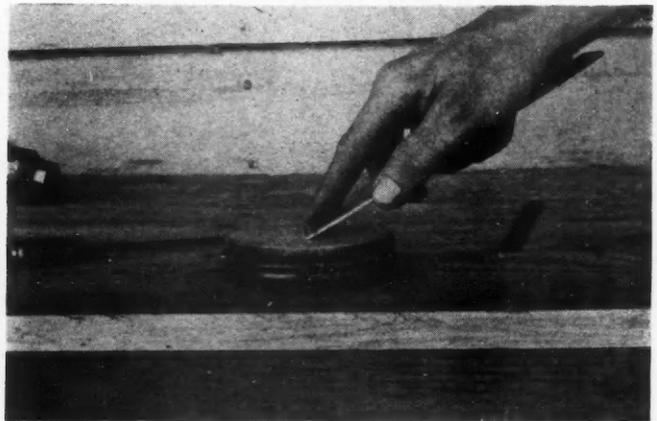
HANDY kitchen storage space built under stair landing.

can be pulled out of cabinet into kitchen, making it convenient to reach any article at rear of shelf. Each drawer unit has one in front and one in rear; the front drawer is hinged to back drawer. When pulling out a unit of drawers, the front drawer drops down in front of the operator, permitting easy access to front drawer and permitting articles to be removed from rear drawer. Main doors of cabinet are equipped with loose bottom tills which are easily cleaned.

This cabinet takes the place of three portable cabinets which were discarded, leaving more room in kitchen.—ALTON L. LOGAN, Building Contractor, Edwardsville, Ill.

Aluminum Piston As Tool Hone

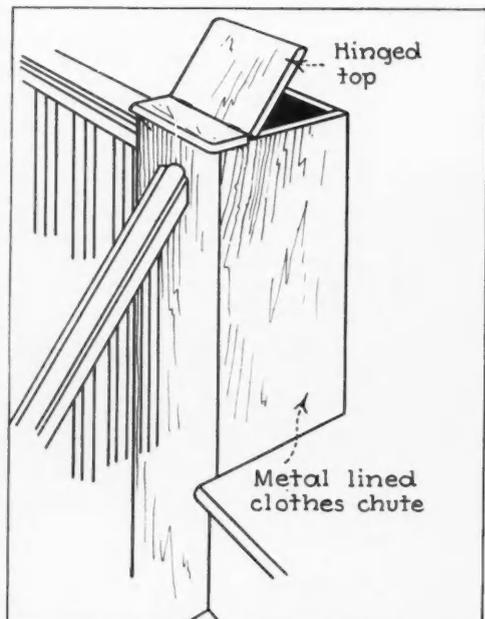
IT IS a well known fact that a piece of aluminum is one of the best materials for honing and removing the wire edge from the blades of cutting tools after filing or grinding them. An excellent addition to the shop bench and one that will be in constant use is an old aluminum piston or the cut-off top of one, mounted rigidly on the bench top, as shown. The upper surface of this piston, being a perfect flat, makes an ideal honing surface.—W. C. WILHITE, Edelstein, Ill.



HONE of cut off aluminum piston mounted on bench top.

Concealed Clothes Chute

THE post at the top of the stairs, as shown in the sketch, which appears slightly large but not out of keeping with a Colonial type of house, was the only place that could be found to conceal a clothes chute. The top is hinged, the inside metal lined and leads directly to the laundry. The owner's wife declares that of all their modern conveniences, it has saved the most steps.—W. F. MESSENGER, Ballston Spa, N.Y.



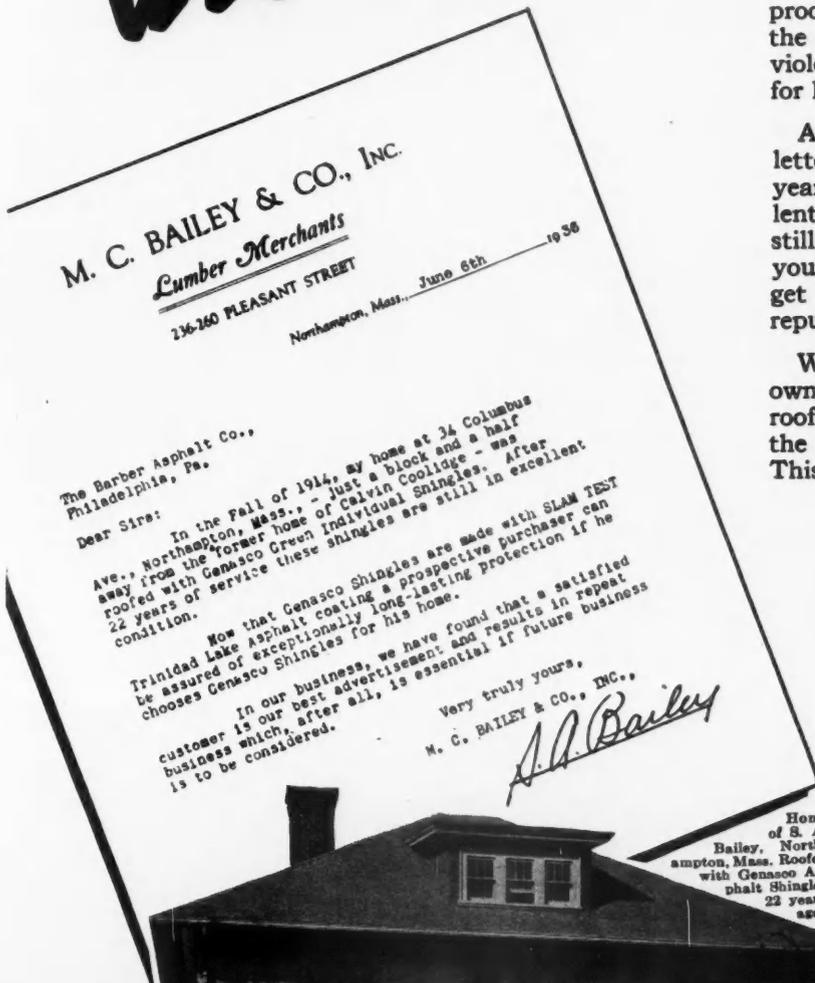
A NEWEL post conceals convenient, metal lined clothes chute, leading to basement laundry.

Genasco roofs are long-life roofs

Roofs made with Genasco Asphalt Shingles last a long, long time. That's because they are made with high grade felt and then waterproofed with Trinidad Lake Asphalt Cement—the slam test coating—which resists the ultra violet rays of the sun, roofings' worst enemy, for long periods of time.

As an example of a long-life roof, read the letter alongside: Says Mr. Bailey—"After 22 years of service these shingles are still in excellent condition." When shingles last that long, still looking fine, still giving excellent service, you can be satisfied that customers are going to get their money's worth and you will get a reputation for doing a quality job.

Winter is coming. There are plenty of homeowners who want *durable, colorful, fire-safe* roofs. Supply this demand by applying one of the many types of Genasco Asphalt Shingles. This business is yours if you go after it.



M. C. BAILEY & CO., INC.
Lumber Merchants
236-260 PLEASANT STREET
Northampton, Mass. June 6th 1936

The Barber Asphalt Co.,
Philadelphia, Pa.
Dear Sirs:

In the Fall of 1914, my home at 34 Columbus Ave., Northampton, Mass., - just a block and a half away from the former home of Calvin Coolidge - was roofed with Genasco Green Individual Shingles. After 22 years of service these shingles are still in excellent condition.

Now that Genasco Shingles are made with SLAM TEST Trinidad Lake Asphalt coating a prospective purchaser can be assured of exceptionally long-lasting protection if he chooses Genasco Shingles for his home.

In our business, we have found that a satisfied customer is our best advertisement and results in repeat business which, after all, is essential if future business is to be considered.

Very truly yours,
M. C. BAILEY & CO., INC.,
A. D. Bailey

Home of S. A. Bailey, Northampton, Mass. Roofed with Genasco Asphalt Shingles 22 years ago.

Genasco Asphalt Shingles

Waterproofed with
TRINIDAD LAKE ASPHALT CEMENT

THE BARBER ASPHALT COMPANY
PHILADELPHIA

New York Chicago St. Louis

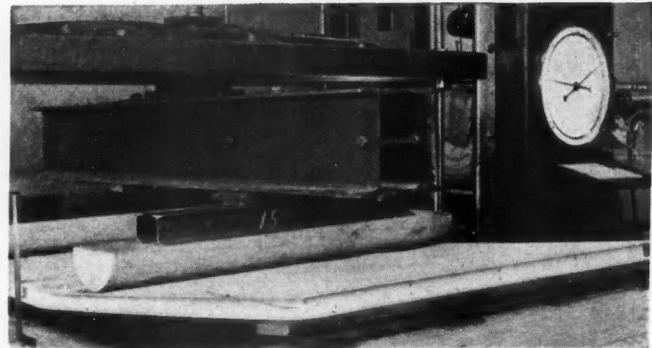


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AB9
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Please send me the folders describing
the shingles checked below:
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..... Genasco Sealbac Shingles.
..... Genasco Hexagon Strip Shingles.
..... Genasco Latite Shingles.
Name.....
Address.....



Fabricated Wall Panel Strengths Shown in Tests



FABRICATED plywood wall panels in testing machine at Forest Products Laboratory to determine construction strength.

Previous tests at the Forest Products Laboratory, U. S. Department of Agriculture; have shown that the strength and rigidity of floor and wall panels with plywood coverings may be increased enormously by gluing, instead of nailing plywood to studs, plates, and sills. Increasing interest in this type of panel, especially since its use in an experimental house recently built at the Laboratory, led to the following series of tests in which the superiority of certain details of construction were determined.

SIX wall panels, each 4 feet wide by 8 feet long, were used in this series of tests. Panel No. 1 had five western white pine studs each $\frac{3}{4}$ inch thick and $1\frac{1}{8}$ inches wide, smallest size used. Panel Nos. 2, 3, and 4 were similarly constructed but with studs $1\frac{3}{4}$, $2\frac{1}{4}$, and $3\frac{5}{8}$ inches wide, respectively. Panel Nos. 5 and 6 were similar in construction to Panel No. 1 except that crosswise pieces were inserted at right angles to the length. All studs were spaced approximately 12 inches apart. The covering was 3-ply $\frac{1}{4}$ -inch Douglas fir plywood and was glued with casein glue (F. P. L. formula B-4) to the two sides of the studs. The necessary pressure during setting of the glue was provided by permanently nailing the plywood to the studs with $1\frac{1}{4}$ -inch brads spaced 3 inches apart. The direction of the face grain was parallel to the length. A vegetable protein glue was used in the manufacture of the commercial plywood.

The rigid attachment of the coverings to the studs by means of glue gives high resistance to sheer between the studs and the coverings, thus causing one covering to be thrown into tension and the other cover-

ing into compression when resisting an external force. The panel acts essentially as a box girder and thus permits the use of a very thin wall to obtain the required strength.

The panels were tested in static bending over a span of 7 feet $9\frac{3}{4}$ inches with the load applied at the third points. The rate at which the loading device descended ranged from 0.16 inch per minute for the panels $4\frac{7}{8}$ inches in depth to 0.30 inch per minute for the panels $1\frac{7}{8}$ inches in depth. Deflections were read to the nearest 0.01 inch for each 100 pounds increment of load. Illustration shows the method of testing.

Control specimens cut from the panels after failure were tested in accordance with standard procedure to determine their strength properties.

The results of the tests are given in the table below.

In calculating the moment of inertia of the panels and the small specimens cut from them, all plies running perpendicular to the length of the panels were neglected. Because of the sanding incident to the manufacture of plywood the outer plies are often thinner than the nominal ply thickness. Such differences will materially affect the strength and therefore, the actual thickness of the plies were accurately determined and used in the calculations.

Panel No. 1 had a maximum strength of 118 pounds per square foot when adjusted to the basis of a uniform load. A 60-mile wind has a pressure of about 12 pounds per square foot, which is approximately 0.1 the maximum load. The corresponding deflection for a 60-mile wind would be less than $\frac{1}{4}$ inch at the center of the panel height. Panel No. 1 is therefore amply

(Continued to page 114)

Dimensions and performance characteristics of 4 by 8-foot wall panels with stressed plywood coverings (Span 7 ft. $9\frac{3}{4}$ in.; third-point loading)

Panel No.	Width (in.)	Nominal thickness of 3-ply coverings (in.)	Studs (Number, Size)	Stiffeners (No., In.)	Overall depth (in.)	Weight of panels (lb.)	Moment of inertia (in. ⁴)	Section modulus (in. ³)	Max. load (lb.)	Equivalent load if uniformly distributed (lb. per sq. ft.)	Modulus of elasticity (1000 lb. per sq. in.)	Deflection at 15 lb. per sq. ft. (in.)	Maximum stress if uniformly distributed (lb. per sq. in.)	Shear (lb. per sq. in.)
1	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 1-3/8	0	1-7/8	53.2	10.05	10.74	2780	118	1520	0.33	4040	198
2	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 1-3/4	0	2-1/4	58.0	16.02	13.77	3140	134	1470	.22	3560	186
3	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 2-1/4	0	2-3/4	59.9	25.92	18.82	5140	219	1460	.13	4270	249
4	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 3-5/8	0	4-1/8	66.2	67.22	32.38	8760	373	1413	.05	4230	283
5	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 1-3/8	7	1-7/8	58.0	10.31	10.89	1860	79	1578	.31	2670	132
6	48	$1\frac{1}{4}$	5 : $3\frac{3}{4}$ x 1-3/8	7	1-7/8	60.0	9.75	10.32	3500	149	1825	.28	5300	249

In calculating moment of inertia, plies which ran perpendicular to length of panel or specimen were neglected.

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LIBBEY · OWENS · FORD
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 THE
 LABELS
 ON**

Millions of people know the L.O.F label when they see it and recognize it as a symbol of superior quality. Consistent national advertising for many years has made it one of America's familiar trade marks. This widespread public recognition can mean a lot to you. When you build a house that you in-



tend to sell, leave the labels on the L.O.F Quality Glass from the time you glaze until the deal is completed. They tell prospects that the glass is the finest of its grade obtainable—and logically imply similar high standards of quality in all other details, Libbey · Owens · Ford Glass Company, Toledo.

NEW PRODUCTS

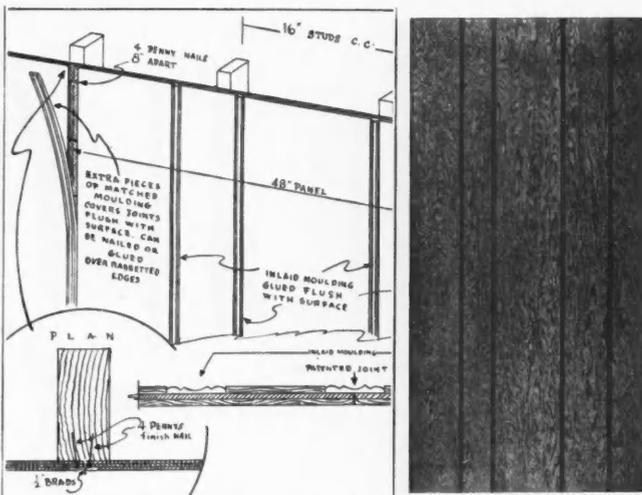
FOR INFORMATION ABOUT any new product
write American Builder Information Exchange
105 West Adams Street, Chicago, Ill.

Plywood Panel Joints Without Battens

A NEW Douglas Fir wallboard has recently been developed by the Vancouver Plywood and Veneer Company, Vancouver, Wash., which entirely does away with the necessity of battens. The new material is made like plywood, three-ply, and in 4 foot by 8 foot panels. The new and novel feature is the fact that the panels are grooved by special machinery and into these grooves, or dados, neat, simple mouldings are inlaid flush with the surface, bound with water-resisting glue. The mouldings are used to create standardized panels of random plank, standard plank, and tile patterns. These panels are joined by a separate piece of the same moulding which covers rabbeted edges.

The new material is copyrighted under the name of Art-Ply and patents are pending in Washington, D.C. Newly perfected machines at the Vancouver, Wash., plant groove the plywood for the inlaid moulding and other machines lay and glue it. Four standard patterns are now available: Random Plank, Standard Plank, Rectangular Tile, and Square Tile. The company has been experimenting for about a year, and is now in production.

Art-Ply is packed like ordinary plywood; ten 5 foot by 8 foot panels to the package; wrapped in manila, with the necessary moulding to cover the joints. The approximate weight is 252 pounds to the package.



DETAILED drawing (left) showing how plywood panel joints are covered with flush, matching moulding; (right) random plank patterned panel, one of the standard types now available.

Oil-Fired Conditioning Unit

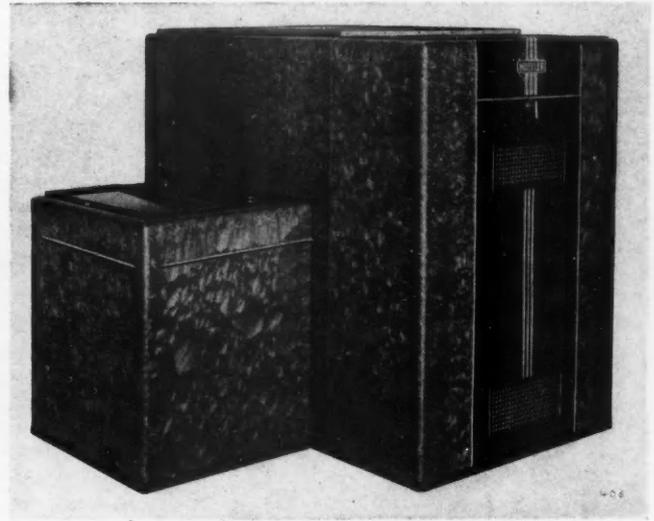
A NEW oil-fired, air conditioning unit to sell at moderate price, known as the Series Twenty, has just been announced by the L. J. Mueller Furnace Company, Milwaukee, Wis.

It consists of furnace, fan, filters and air moistener, and is modern in design, accommodates practically any gun type burner; furnished with or without burner; the outer casing or cabinet completely insulated. An inner casing encloses the heater body, reducing the area and assuring positive impingement of air delivered by the fan upon the heating surface of the body and radiator—an assurance of uniform air temperature in the air chamber above the unit.

A series of tubes in the extra large radiator provides considerably increased heating surface. The tubes are in two rows, with a vertical baffle plate between the rows, compelling

the products of combustion to come in contact with the entire surface of each tube before escaping to the chimney.

The drum is of heavy gauge steel, riveted and welded. Radiator is welded at all joints.



OIL-FIRED air conditioning unit features moderate price.

Air Conditioning Insulation

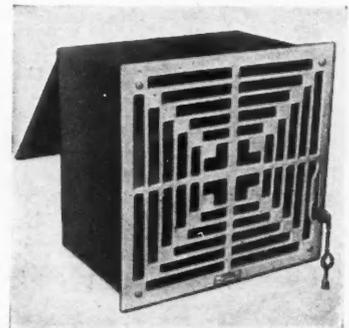
A NEW type of corkboard insulation for ducts has been developed by the Armstrong Cork Products Company, Lancaster, Pa., to meet the requirements of small commercial air conditioning installations. The new product is known as Armstrong's DI (Duct Insulation) Corkboard.

To prevent condensation rather than to conserve refrigeration, the new type of corkboard, offered in 1/2-inch thickness, is sufficient; where insulation is required to conserve refrigeration, standard corkboard in heavier thickness is recommended.

DI Corkboard is not affected by moisture, and a thin mastic coating on one side strengthens the material, increases its flexibility, seals it against moisture penetration, and provides a finish. It can be erected readily in waterproof cement or asphalt and, because of its light weight, reinforcement with wires or bands is not necessary in many cases and can be made to conform readily to sharp curvatures and can be cut and fitted with a sharp knife. The thermal conductivity value of DI Corkboard is high due to its special light density. It is available only in 1/2-inch thickness in 12 x 36 inch sheets.

Wall Cabinet Kitchen Ventilator

THE Universal Blower Company of Birmingham, Mich., has announced as a recent addition to its line of kitchen ventilators the Airstocrat wall cabinet type fan. A feature of this unit is the large amount of air moved by the patented, all-aluminum fan, with extreme quietness and small consumption of electricity. Model 10 has a 10-inch fan and moves over 700 cubic feet of air per minute, using 40 watts. The use of a mercury type switch for lifetime, trouble-free operation, is stressed. The outside door is manually opened by levers, which also actuate the switch, and since the door is under spring tension at all times, it cannot rattle. The steel cabinet is rust-proofed and enameled, and is built into the wall without special framing. The polished aluminum grille is of modernistic design.



WALL CABINET type kitchen ventilator has all-aluminum fan and rattle-proof door.



Here is the perfect answer for the prospect who says, "I don't need a new roof. It doesn't leak." The "Slow Fire" story is bound to catch and hold his interest and give him convincing arguments why a new roof is sound economy.



A practical selling help to help sell **BARRETT ROOFS**

Here is a new and effective sales device to help you sell Barrett Roofs to home-owners. Roofing salesmen who have tried it out say that it has unequalled sales-closing power—that no other type of selling approaches its effectiveness in overcoming sales resistance.

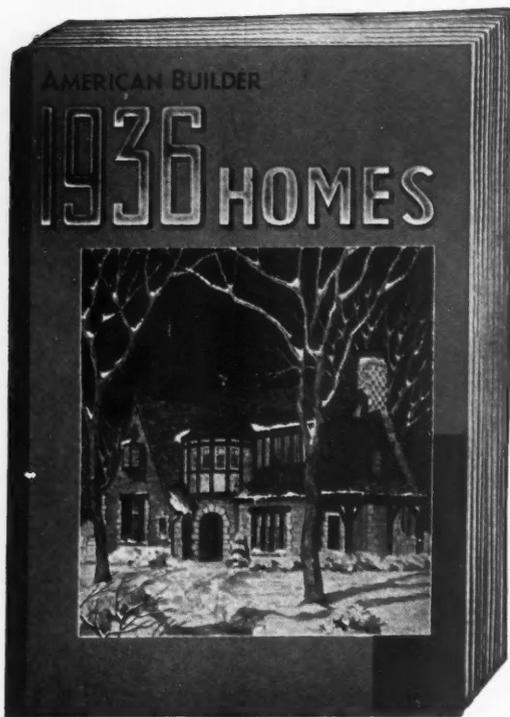
The portfolio is 11½" x 14½", handsomely covered in blue fabricord bound at the top with a practical, easy-turning, wire binding. It can be set up on a desk or table, in front of a prospect, in pyramid style.

The 29 pages are dramatically illustrated and attractively printed in two colors, and tell the Barrett "Slow Fire" story in a logical, thoroughly convincing, step-by-step way that is bound to make a powerful impression on any home-owner.

Put this valuable selling help to work for you at once. Use it to go after profitable fall business. The Barrett salesman will gladly show it to you and tell you how you can get copies.

THE BARRETT COMPANY, 40 Rector St., New York, N. Y.





172 pages—300 illustrations
 12 pages in 4 colors Well
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Better Homes for Here's How to

THE home-buying public is asking for bigger values today. It demands more for its money than it has ever yet received—in architectural charm, step-saving layouts, structural soundness, modern equipment.

To meet this demand there must be careful and complete advance planning of every detail. The whole job must be thoroughly thought through, built on paper and mentally lived in before ground is broken or a nail driven. A large part of the higher costs comes from changes made in the plans after the building is started.

The capital new Plan Book—"American Builder 1936 Homes"—now offered FREE with an *American Builder* new or renewal subscription order—not only presents such a wide range of designs to choose from, but also goes into such detail that it is comparatively easy for the builder and his client to decide upon every detail of the home that is to be. The use of it will help to take the gamble out of the average home building job and obviate the expensive "second thoughts" which are the bugbear of both builder and owner.

"Better Homes for Less"

is the title of the first article in the FOREWORD of "American Builder 1936 Homes." It strikes the keynote of the whole book, and is one of its most valuable features.

Other captions in the FOREWORD are "How to Get a Higher FHA Rating"—"The Points on which FHA Mortgages are Rated"—A brief explanation of the Cost Key Method of Estimating.

A Sensible Modern Low-Cost House

built at Wantagh, Long Island, is presented on pages 14 and 15, with five illustrations, including front and rear views, a first-floor plan, an attractive kitchen and an unusual kitchen-dining alcove arrangement. Outside stairs lead to a railed-in garage roof whose open terrace appeals to outdoor living.

Other sections of Chapter 1, "FORWARD-LOOKING HOME DESIGNS" include a Stream-lined Home of Concrete Units—a Shop-Cast Panel House—a Chicago Ultra Modern Concrete House—a Modernistic Brick House—and some Grand Prize Homes, large and small, for North and South.

Carefree Cottage at Hempstead

Splendidly done! A truly low-cost house, yet meets all the needs of modern living. Built in the Cape Cod fashion with shingle exterior. Gives a quaintness and homelike appeal that make it one of the best of the country's model homes exhibited this year. Two pages of illustrations and descriptions and two pages of Working Plans.

Other sections of Chapter II, "DESIGNS OF TESTED WORTH," present the Silver Star Sample House at Washington—a distinctive Manhasset Model Home, with dramatic detail—A Virginia Exhibit Home of unusual charm—Lancaster Realty Board Model Home in modernized Early American—Popular Styles for New Jersey Suburbs—An Air Conditioned Cotswald Cottage—Triple-Insulated Time Proof Home, with two pages of construction details—A Westchester Model Home—An unusually inexpensive Connecticut house for Country Living—a 6-room Kansas City Colonial—New Ideas in Recreation Rooms, Study and Bath.

The Old Made New

Chapter IV, "New Value Through Re-Styling and Modernizing," fairly bristles, throughout its 34 pages, with helpful, proved ideas for making homes more livable and attractive, without and within.

Here are some of the sub-heads: "Interiors with a

Less Money Get Them!

Modern Touch"—For Kitchen Splendor, Breakfasting in Style, Basement Fun, Built-in Bar—Planning More Efficient Kitchens—"As Good as New, at Half the Cost"—From Old to New in Kalamazoo—What's New in Garage Designs—Remodeled Tea Room Attracts New Trade—4 pages in the Shopcrafter's Corner—The Use of Enameled Sheets for Wall Finish—Veneering Job Brings Happy Ending.

Plans for Low-Cost Homes

Thirty-four pages of them! Mainly for suburban and small-town areas. Showing what amazing values can be had in 3, 4 and 5-room houses when expertly planned. With three useful introductory articles on "What Can be Accomplished on a Half-Acre Lot," "Wherein Low-Cost Homes of Today are entirely different from those of Yesterday—and "Today's Small House Requires New Methods and New Materials."

A few of the presentations, each with illustrations, floor plans and Cost Keys: Low-Cost Built-In—A 5-room Curtis House Expertly Planned—Build Now, Finish Later—A broad and airy Southern Cottage—New Style Brick Bungalow—Two Designs for Week-end Cottages—A 4-room Vacation House—Home for Narrow City Lot—Flat-Roof Cement Home—Northwest Economy Home—Three Houses with Similar Plans—Midget Housing—Woodsy Lodge—Low-Cost Brick House—and many others.

Better Farm Homes and Out Buildings

Chapter V contains 34 pages of worked-out suggestions for Country Homes and Farm Structures, both new and remodeled.

Low-Cost Homestead Houses—New Homestead Barns — Rooms over Garage—Shed Roof Hennerly—Combination Barn and Garage—Open Front Poultry House—Concrete Hog House—Firesafe Smoke House—Concrete Dairy Stable—How to Lay Out a High Corn Crib—How to Build a Wind-Proof Gothic Barn—Master Material List for Wind-Proof Gothic Barn—Roadside Market Meat Plant—etc., etc.

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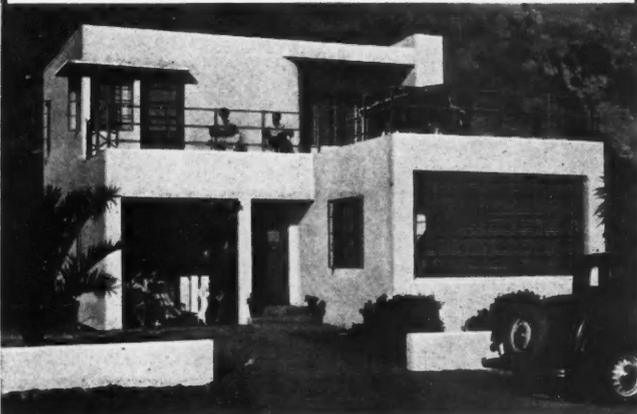
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For instance, the ceilings in the house illustrated are of MASONITE INSULATION — left in its natural warm-brown finish in every room except the living-room, where it is painted white. Walls are of MASONITE INSULATION and QUARTRBOARD, a combination which offers unusual decorative effects — plus coolness in summer and sound-deadening qualities all year round. Floors are of MASONITE TEMPERED PRESWOOD over QUARTRBOARD, an arrangement that provides resiliency and expensive hardwood appearance at low cost.

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111 W. Washington St., Chicago, Ill.
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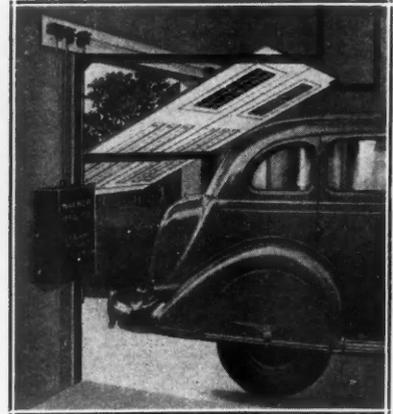
City _____ State _____

Upward Acting Door Hardware

THE Wagner Manufacturing Company, Cedar Falls, Iowa, is marketing canopy overhead garage door hardware. The Wagner Set No. 917, which is adapted to any one-section door or to a door made up of two or more sections, is used to change old style garage doors to modern over-head construction, or with entirely new door installations.

When open, the door is out of the way where it cannot be hit by the car; a minimum of space is required between the car and the garage door when closed. The entire width of the opening is available for driving the car in and backing out of the garage. Snow and ice do not hamper the opening and closing of this type of door.

Besides the Wagner No. 917 for openings 8 feet wide by 8 feet, other sets for larger openings are available.



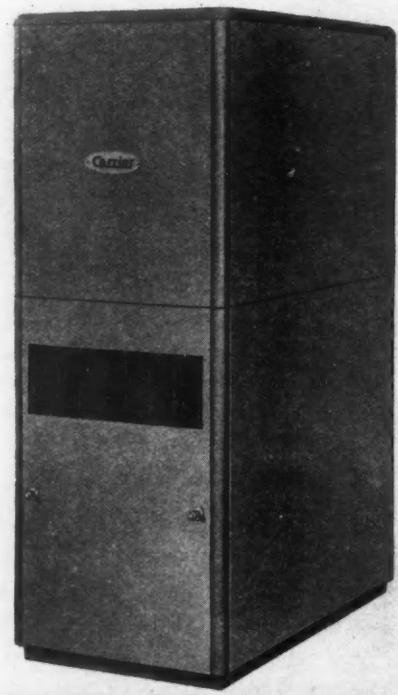
DOOR equipped with Wagner Hardware in operation.

New Line of Heating Equipment

SIZES, combinations and capacities for the new residential air conditioning and automatic heating equipments, and for the oil burner, have been announced by Carrier Engineering Corp., Newark, N.J. Two sizes of the Carrier home air conditioner are introduced complete, with either oil or gas furnace, and for winter and year 'round service.

Maximum ratings are 190,000 Btu per hour and 323,000 Btu respectively, for oil; 150,000 Btu per hour and 260,000 Btu, for gas. Because of the unit design of the furnace and air conditioner, the required floor space for the two sizes is 27 by 46 inches, and 27 by 67 inches, respectively.

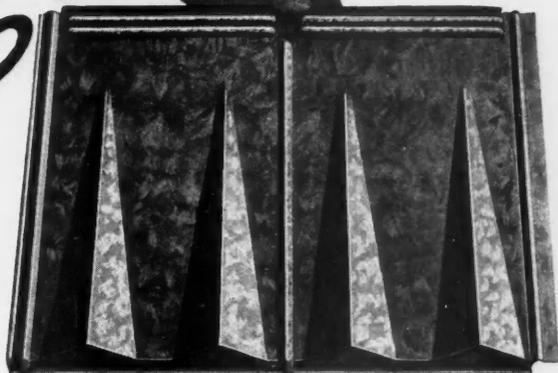
Filters are of the throw-away type and are replaceable through a removable panel in the casing. Humidification is provided with



CARRIER home air conditioner showing furnace below with conditioning unit mounted on top.

here it is . . .

Edwards



TWIN (2 in 1) METAL SHINGLE

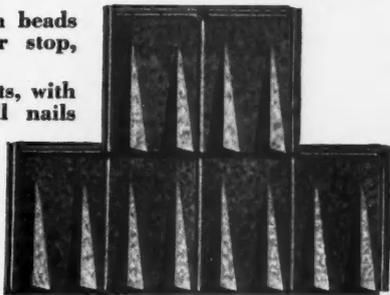
**Twice as big . . . Lays twice as fast . . .
More profit for you!**

Look at it . . . as big as two 10"x14" shingles and all exposed to the weather except the storm locks and the nailing flange! Each Twin (2 in 1) Shingle covers as much roof area as 6 composition shingles or 13 wood shingles.

Gives your customer a better roof, too, handsomer in appearance; proof against fire and lightning; wind and weather-tight. Your costs are less and your profits larger.

**You get these exclusive advantages with
Edwards Twin (2 in 1) Metal Shingles**

- Two over-sized storm beads with right angle water stop, prevent syphoning.
- Extra large lock joints, with nailing flanges and all nails covered.
- Unusually thick butts emphasize the modern design.
- Centering guide makes a continuous bead from gutter to ridge.
- Only two nails needed per shingle.
- Flat overlaps make unbroken butt lines.
- Adapted to any roof with pitch of 4" per foot or more.
- One package to each square makes easy handling.
- Cost less than other individual shingles to buy and to install. More profit for you.



Write immediately for full sized sample and prices.
Ask for Twin (2 in 1) Metal Shingle Folder No. 1413.

THE EDWARDS MANUFACTURING CO.
542-562 EGGLESTON AVE. CINCINNATI, OHIO

**You can't Buy
"as good"**

EXPERIENCED users of SAMSON SPOT Sash Cord will tell you that there is no other "as good."

Samson Spot Sash Cord will give at least 25 years of dependable service; many times that of cheap cords. This long wear is obtained by putting quality into Samson Spot Sash Cord.

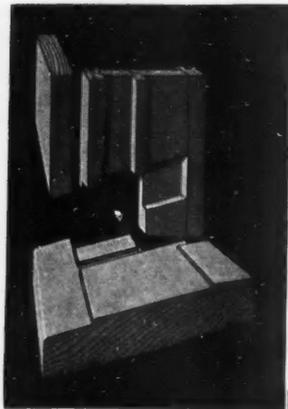
Made in one grade only, from extra quality 3-ply cotton yarn. Firmly braided and smoothly finished to increase wear and prevent stretch. Specified for more than forty years by leading architects everywhere.

Always identify Samson Spot Sash Cord by the trade-mark, the colored spots. Samples free. Send for them.

SAMSON CORDAGE WORKS
BOSTON MASS.

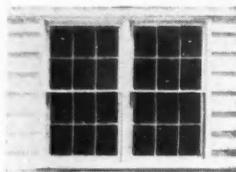
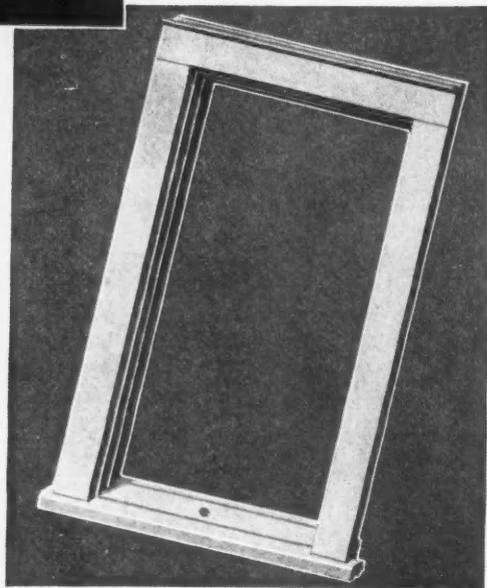
**SAMSON
SPOT 
SASH CORD**

THIS EXCLUSIVE LOCKED SILL-JOINT FEATURE



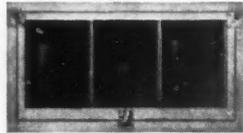
makes
Andersen
Master Frames
ABSOLUTELY
LEAKPROOF!

LOCKED SILL-JOINT construction—Holds sill and jamb rigid so they cannot pull apart when weight is applied. Prevents leakage. This construction has all the advantages of both the sill-dadoed and jamb-dadoed frames with none of their disadvantages.



Andersen Narroline Double Hung Window

A complete, easy-to-install unit. Leak-proof and weathertight, dependable, trouble-free sash operation. Andersen-Bruce Treated against termites and decay.



Andersen Basement Window

A complete unit including frame, sash, hardware and screen. Economical. Bruce Treated against termites and decay.

EXCLUSIVE with Andersen Weathertight Master Frames: the leakproof locked sill joint construction; the steep sill slope; the chamfered blind stop; the removable jamb liner; the mortar clinch grooves; Andersen noiseless, wear-proof pulleys with lifetime guarantee of trouble-free operation.

Thousands of contractors have told us they save time and labor by using Master Frames. 87% reported a saving of more than 25 cents per opening and one-fifth of these saved more than \$1.00 per opening! Ask your dealer to demonstrate for you. Or use the convenient coupon below.

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ANDERSEN FRAME CORP.
Bayport, Minnesota

AB96

I would like complete details and a demonstration on Andersen items checked below:

- MASTER FRAMES
- NARROLINE WINDOWS
- ANDERSEN CASEMENTS
- BASEMENT WINDOWS

Name _____

Address _____

an evaporative pan type humidifier, equipped with complete and remote control. A forward-curved blade fan is utilized for its quietness. A modulation control with by-pass principle insures the economy of re-circulation without continuous burner operation. Acoustic elbows, treated for sound absorption, and flexible canvas duct connections are further features for quiet delivery of air. Duct connections may be made from either side or top.

The heating coil is of the fin-type, thus increasing the primary radiating surface with minimum space requirements. For the smaller size, the radiation area is 88.7 square feet, and for the larger unit, 177.5 square feet.

For summer air conditioning, space is provided for the insertion of a fin-type cooling coil for use with Freon or cold water. Heating is supplied by the Carrier home furnace, using oil or gas, and also produced in two sizes.

Flexibility in design enables installation with existing steam or hot water, automatic or manual, boilers. The air conditioning unit, only, may be mounted from the ceiling. Side duct connections are provided for this installation. The Carrier home air conditioner is also adaptable to the "split" system of air conditioning and heating.

Either tank or tankless type domestic water heaters are provided for. Hot water is available in summer without delivery of heat to rooms.

The Carrier home air conditioner consists of two basic units—the furnace and air conditioning unit. The former is floor mounted. The air conditioning unit is placed on top of the furnace, making a total height of 72 inches for the smaller size, and 77 inches for the larger. The Carrier home furnace alone is 42 inches high. This sectionalized feature facilitates handling, erection, and location.

Each separate section and the complete unit is encased in an 18-gage steel jacket, with crackle enamel finish. A removable panel provides access to all internal parts. The casings are styled to be a part of any recreation room color scheme. Two tones of neutral gray are employed to give a pleasing effect in mass and design.

Caulking Compound Cartridges

To eliminate the disagreeable, dirty and laborious job of filling caulking guns with bulk caulk from drums and cans, the Calbar Paint & Varnish Company, 2612-26 N. Martha St., Philadelphia, Pa., has put on the market a cartridge, the Handy-Load, containing Calbar Caulk-O-Seal caulking compound.

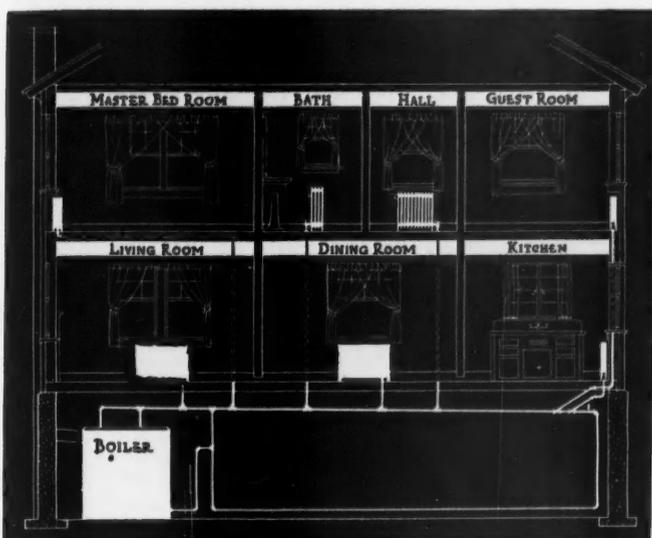
The Handy-Load is a metal cylinder, 1/8 gallon capacity, with a hard fibre plunger cap in one end, the plunger of the gun pressing against the cap and ejecting the caulk as the trigger is operated.



WORKMAN inserting Handy-Load cartridge in Albion caulking gun.

This cartridge slips into the new Albion 32-2 x 10 cartridge gun with no adjustments necessary, or in any of the older type Albion guns by substituting a metal plunger for the leather plungers. These attachments are available from the Calbar Company. Plunger leathers are also included with cartridge guns, so as to be available for regular use.

Caulk-O-Seal in the Handy-Load cartridge comes in limestone, grey and natural colors as well as white. The cartridges are packed in 4 nests of 8 to the shipping carton.



This shows you how simple the Burnham Unit-Air Conditioner System is. The Unit-Air Conditioners are located in the living and dining rooms downstairs and the master bedroom upstairs. Rest of heating done by the Burnham Slenderized Radiators.

A Simplified Radiator System

of Air Conditioning

No Ducts—No Tinsmithing—No Registers

No one knows better than you architects, that after all is said and done there is no heating that is as satisfactory in so many ways as radiator heat. The only thing it has lacked is air conditioning.

But now that lack has been fully met in a simple, every-way-practical way by Burnham. With the Simplified Burnham Unit-Air Conditioning System there is no more piping in the basement than with any radiator heating. Still in every way it performs the same satisfactory heating, while also filter-cleaning the air, humidifying it, and keeping it in circulation.

It is done by the Burnham Unit-Air Conditioner located in certain rooms. It takes up no more room than the average grille-enclosed radiator. Can be recessed under the windows. Costs no more than a warm-air system giving an equal performance. Has the advantage of giving both radiant and convected heat. Requires no separate boiler for hot-water supply. Send for Catalog giving facts in detail.

Burnham Boiler Corporation

Irvington, New York Zanesville, Ohio

Representatives in all Principal Cities
of the United States and Canada

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Waterproof Cement Paint is the
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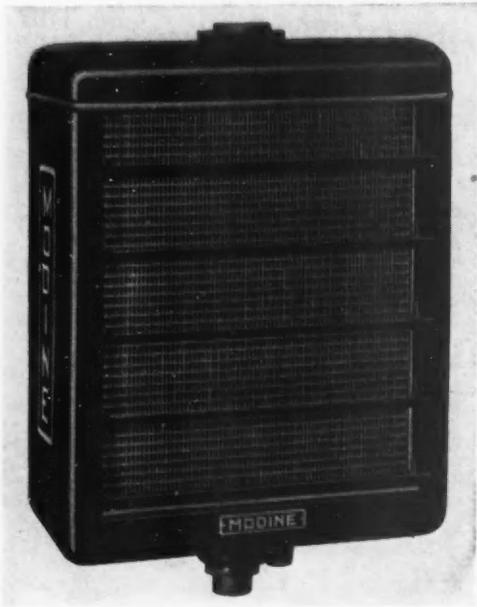
Town _____

Cold Water Type Unit Cooler

A NEW cold water type unit cooler has been placed on the market by the Modine Manufacturing Company, Racine, Wis. This unit offers a simple yet effective method of cooling by the circulation of cold water. Suspended in a room, it is equipped with a motor and fan which draws the room air through the unit, absorbing heat and moisture and returning cooled and freshened air into the room.

Installation of the Modine unit cooler is quickly and easily accomplished without complicated duct work or alterations.

It provides for 360 degree rotatability so that it can be turned in any direction without changing existing piping connections



MODINE cold water type unit cooler for ceiling suspension.

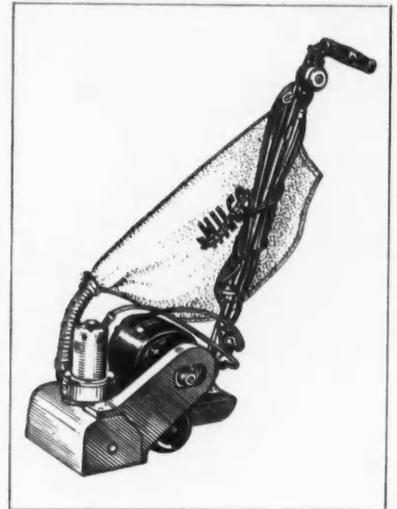
whatsoever. Vertical fins and a specially insulated drain tank make it unnecessary to use a moisture eliminator; thus no mechanical change is necessary to convert the cooling unit into a heating unit. Tap or well water that is sufficiently cold, water pre-cooled by ice or mechanical refrigeration, or alcohol, glycerine or other non-corrosive brines, may be used as the cooling medium.

A wide range of application includes stores, restaurants, mortuaries, barber shops, beauty parlors, taverns, offices.

Floor Finishing Machine

A COMBINATION machine known as the Hilco Handy Sandy for finishing, maintaining or renewing floor surfaces is being manufactured by the Hilger Company, St. Cloud, Minn. For sanding purposes it cuts a full 8-inch strip, leaving no chatter marks, and sands up to the quarter round.

A set of attachments includes steel wool cylinder for simplified maintenance, a scrubbing brush using a special cleaner, and a waxing brush for polishing. By attaching a handle grip, the device serves as a desk or table sander; placed upside down on brackets, it is converted into a stationary bench sander.



HANDY SANDY floor finishing machine for sanding, cleaning, scrubbing and waxing.

C L E A N A I R

DUST STOP

FIBERGLAS MEDIUM • OIL-RESISTANT • COATED • REPLACEMENT-TYPE

...helps to **SELL HOMES**

● Tremendous strides have been made in the heating industry since the last home-building era. Such strides, in fact, that the room which contains the heating unit is now a show place and claims a good share of the spotlight in selling . . . Show DUST-STOP Air Filters at the unit—then trace the effect of CLEAN AIR delivered to every room in the house! Clean walls, drapes and furniture; better health through the arrestment of dust, pollen and dust-carried bacteria . . . You'll find the industry's leading blowers, air-conditioning units and warm-air furnaces equipped with DUST-STOP as standard. OWENS-ILLINOIS GLASS COMPANY, 303 MADISON AVENUE, TOLEDO, OHIO.

AIR CONDITION with the modern, "SPLIT SYSTEM" as supplied by The FITZGIBBONS BOILER-AIR CONDITIONER

This unit provides cleaned, humidified, tempered, circulated air in those rooms where it is desirable. In all other rooms (bath room, kitchen, garage, etc.) it supplies comfortable radiator heat.

Furthermore, from the same unit, comes abundant, year-'round DOMESTIC HOT WATER SUPPLY with no tank or other usual hot water equipment.

The beautiful enameled steel jacket of this unit houses everything needed for these essential services. Even the oil burner is concealed inside, behind easily removable panels. Where stokers are used, they are often accommodated in the same location. Think of what this compactness means in the planning of the extra basement room that the modern home buyer demands.

Get the facts—write today for full information.

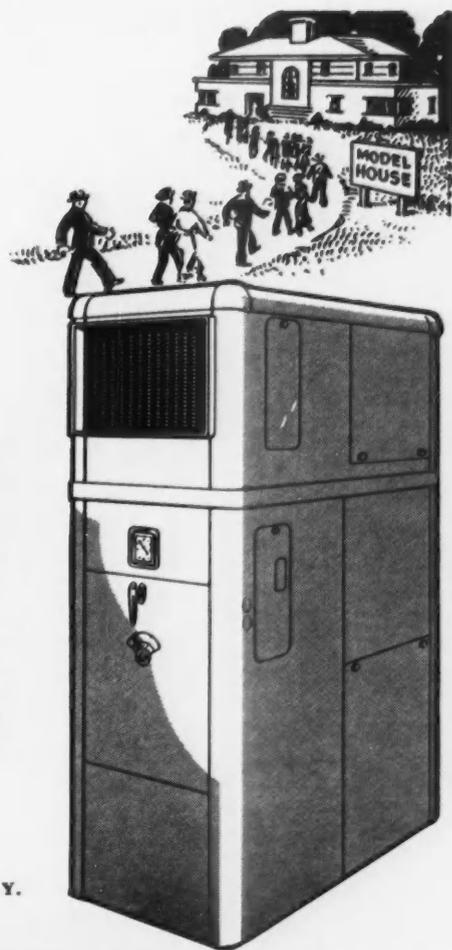
Fitzgibbons Boiler Company, Inc.

GENERAL OFFICES: Architects Bldg., 101 Park Ave., NEW YORK, N. Y.

Works: OSWEGO, N. Y.

BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

Built in types for use with any good oil burner, any gas burner, any coal stoker. Select your own method of firing.



YOU'VE GOT A BIG SELLING "EDGE" WHEN YOU BUILD WITH CELOTEX INSULATION!

More and more builders are making every home they build a Celotex Insulated Home because they can offer positive assurance of these worthwhile advantages:

- A stronger, better braced house!
 - Permanently efficient insulation!
 - Greater comfort winter and summer!
 - Lasting fuel savings!
 - More value for their money!
- Celotex Insulating Sheathing and Lath are superior building materials that cost but little more than the ordinary sheathing and lath which they REPLACE!*

In addition Celotex-Built houses are easier to sell. More homes are insulated with Celotex than with any other building insulation. And the Celotex program of consistent and vigorous advertising tells a powerful selling story to millions of readers every month.

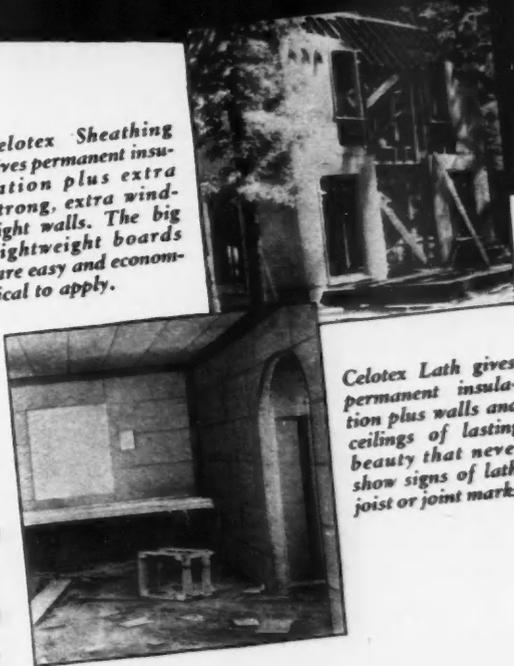
Celotex Sheathing gives permanent insulation plus extra strong, extra wind-tight walls. The big lightweight boards are easy and economical to apply.

Celotex Lath gives permanent insulation plus walls and ceilings of lasting beauty that never show signs of lath, joist or joint marks.

CELOTEX

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World's Largest Manufacturer of Building Insulation



Borrow this Pictorial Color Chart



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You will find the Lowe Brothers Pictorial Color Chart very helpful when you interview prospective customers. These *actual painted* reproductions of attractive exteriors and charming interiors contain ideas on color schemes for every painting need. They make color selection easy and they get the decisions which land those profitable contracts.

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And when submitting bids, explain to your prospects why they can depend on Lowe Brothers paint for maximum economy and enduring beauty. Shrewd buyers will be glad to know that you are protecting their investment by recommending Lowe Brothers nationally advertised, known quality paint to assure them ultimate savings.

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Lowe Brothers

PAINTS • VARNISHES

Quality Unsurpassed Since 1869

Modern Gas-Burning Mantel

MODERN gas-burning Radiantfire-Mantels, complete fireplaces in themselves, ready to be installed in any room, are being marketed by General Gas Light Co., Kalamazoo, Mich. These units consist of beautiful wood mantels finished walnut brown, fitted with Humphrey gas-fired heating inserts. The inserts are furnished in a choice of stainless steel in armor bright finish; or black japan with armor bright trim. No chimney, ash pit foundations or tiling construction are necessary.

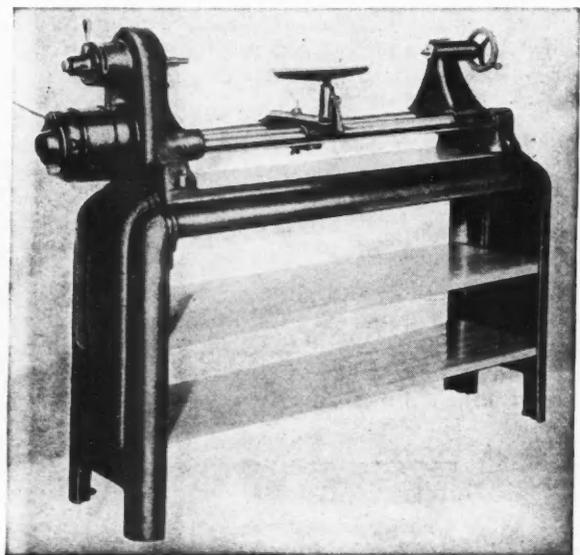
To install the unit, the wooden mantel is placed directly against the wall, a gas line is run to the heating unit, easy venting provisions are made, and the fireplace is ready. Overall width 53 inches, depth 9½ inches, height 45½ inches.



COMPLETE fireplaces consisting of finished mantel and gas unit come ready to install.

Small Woodworking Machines

YATES-American Machine Company, Beloit, Wis., recently announced that it is in production on its line of woodworking machines for home, school and light industrial use. This line consists of floor and bench type lathes and drill presses, band jointers, circular saws, twelve and twenty-four inch jig saws, single and double grinders, belt and disc sanders. Attractive, economical and practical combinations consisting of a jointer and circular saw mounted together on a pedestal and driven from one motor and a belt and disc sander similarly mounted are also furnished.



NEW LATHE in modern design for light use.

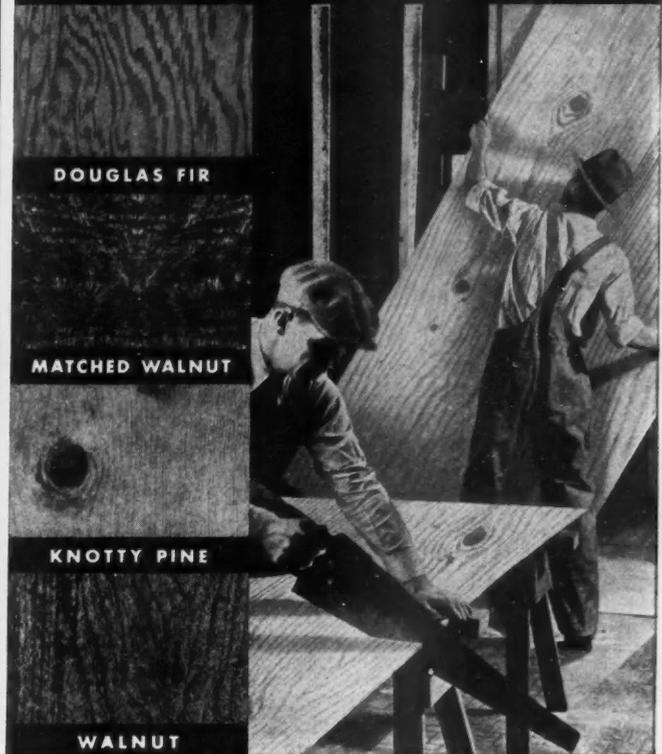


**... because
you can do so without
sacrificing quality**

Only an expert can tell Sloane-Blabon Linoflor from genuine inlaid linoleum. It has a long-wearing, genuine inlaid surface. Patterns are of the same high-styled type found in the most expensive inlaid. Back is cushioned felt-base, accounting for the moderate price. Let us send you the name of the authorized Sloane-Blabon contractor in your city who will furnish you with samples and prices. W. & J. Sloane, Selling Agents Division, 295 Fifth Avenue, N. Y.

Sloane-Blabon LINOFLOR

**THE BEAUTY OF
WOOD PANELING
AT WALLBOARD PRICES**



SHEETROCK

THE FIREPROOF WALLBOARD

*Pre-decorated Surface Saves
on Cost of Interiors . . .*

■ From every point of view, Wood Grained Sheetrock is the ideal interior finish for homes, offices, shops—wherever beauty plus fire protection is wanted. Made by an exclusive process, it gives all the individuality, all the rich distinction of genuine wood paneling at wallboard prices.

GUARDS AGAINST FIRE

In addition, Wood Grained Sheetrock is fireproof—it will not burn nor support combustion. That is why it helps protect the home from fire. Use it as a non-combustible finish to give greater interior beauty for much less cost. Sheetrock is quickly, easily installed and comes in four beautiful finishes. Mail the coupon now for generous free sample and complete details.



SEND FOR FREE SAMPLE

UNITED STATES GYPSUM COMPANY
300 West Adams Street, Chicago, Illinois

Please send me, free of charge, sample of Wood Grained Sheetrock. **U.S.**

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Address..... State.....

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AUTOMATIC HEAT

AND AIR CONDITIONING

to fit every need • meet every budget



OIL BURNING AIR-CONDITIONING FURNACE

For years, leading architects have recommended Herman Nelson Equipment because of its proven quality, efficiency and practicability. Now the full value of Herman Nelson's vast experience in the field of heating, ventilating and air conditioning has been concentrated upon the development of a complete line of automatic heat and air-conditioning equipment for the residential and small commercial market.

These scientifically designed Herman Nelson products are sufficiently diversified to meet every local condition and every individual requirement. You can recommend Herman Nelson Automatic Heat and Air-Conditioning products of the same quality and efficiency you have known for years. They are made available through carefully selected distributors.



PRODUCTS TO MEET EVERY INDIVIDUAL REQUIREMENT

Self Contained Summer Air Conditioner



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GENERAL OFFICES AND FACTORIES AT MOLINE, ILLINOIS

News of the Month

Building Activities and Meetings

Real Estate Outlook Promising

Price Advances, Better Home Site Market and Higher Earnings Shown in Survey

A REAL ESTATE outlook that for a very large proportion of the cities of the country is the most promising in many years, is shown by the Twenty-Seventh Semi-Annual Survey of the Real Estate Market made by the National Association of Real Estate Boards. The survey is from confidential reports made to the Association by local member boards covering 252 cities. (For comparison see 26th Survey, page 100, March 1936 *American Builder*.)

Stiffening earning power of real estate, including business as well as residential properties, forms the backbone of the advance. New home building, its most striking expression, is held back in some communities by construction costs, in some communities by difficulty still experienced in adjusting mortgage terms to buyers' needs, and by other causes, but in many cities it has reached the point where home sites again are in demand. The real estate market in general is more active than a year ago in 92 per cent of the cities of the country, the survey finds.

Real estate is selling for higher prices than a year ago in 77 per cent of the cities of the country, while only 1 per cent show a price level lower than last year. Many reports comment that "steals" are no longer to be found.

Outstanding new feature of real estate recovery is the way rents for central business properties are stepping up, a trend of importance for the indication it gives of how far business in general is preparing for coming activity. Central business property, the survey finds, is leading for rates higher than a year ago in 62 per cent of all cities represented. Only 2 per cent of cities report these rates going lower. The Association's survey of six months ago, which found business property rates up in 54 per cent of the cities, was the first in ten years of these surveys in which a majority of cities had reported such a trend.

Considerable variation is shown between the various geographic sections of the country in the spread of real estate advance, and individual cities even in the same section vary both in respect to details covered in the survey and in respect to general market activity.

Trends Revealed in Survey

The survey gives these important measures of the real estate outlook:

1. Under-supply of single-family dwellings is shown in 76 per cent of the cities reporting, as against 66 per cent so reporting six months ago. Only 1 per cent show any oversupply.
2. Under-supply of apartments is reported in 45 per cent of the cities, as against 43 per cent of the cities six months ago. Only 4 per cent show any oversupply.
3. Rents are higher than last year for apartment space in 83 per cent of cities reporting, and for single-family dwellings in 91 per cent of the cities. More, there is almost complete absence of any down-trend. Only 1 per cent of cities show lower rates, whether for detached houses, duplexes, or apartments. In two geographical sections, the East South Central and the Mountain Sections, 100 per cent of the cities show uptrend in single-family house rents, and one of these, the East South Central section, shows 100 per cent up-trend in apartment rates.
4. Rent advance most frequently reported is 10 per cent. This is true both for detached houses and for apartments. Rents for single family dwellings in representative metropolitan centers are now at about 88 per cent of their 1926 level. But apartment rents are still at only approximately 58 per cent of that level.
5. Interest rates for real estate mortgage loans, probably the most important single factor in the costs of home ownership and the outlook for profit on a given real estate investment, are falling in 40 per cent of the cities surveyed, rising in only 1 per cent of the cities.
6. Capital is seeking mortgage investment in 74 per cent of the cities, as against 64 per cent six months ago. Loans are seeking capital in only 15 per cent of the cities. In every city of over

(Continued to page 98)

PERFORATED ROCKLATH

THE FIREPROOF LATH

Gives Unequalled Fire Protection at the Price!



■ Equal Protection in face of fire can cost as much as twice the low cost of Perforated Rocklath. †

That Perforated Rocklath has amazing resistance to fire is proved by test made at the laboratories of the Bureau of Standards.* At the conclusion of the test, a Perforated Rocklath partition, plastered with one-half inch of Gypsum Cement Plaster, was shown to have qualified for a one-hour fire rating — an extraordinary performance.

Perforated Rocklath is made of gypsum. It is fireproof as gypsum is fireproof. It will neither burn nor support combustion. It is easily applied, the large units go on rapidly. It can be "scored" along a straight-edge and broken as needed.

PLASTERERS PREFER PERFORATED ROCKLATH

Perforated Rocklath is three-eighths of an inch thick, 16 inches wide and 48 inches long. It has three-quarter inch circular perforations, spaced four inches apart. Plasterers like the "feel" of plastering over this unique lath. The plaster keys through the perforations—takes hold in a new way as he runs the trowel over it.

TESTED 3 YEARS ON PACIFIC COAST

Perforated Rocklath is not an experiment. It has proved itself in every way—in laboratories, in the field. Millions of feet of Perforated Rocklath are now in use—and thousands of homes are safer to live in because of it.

Perforated Rocklath is patented and manufactured exclusively by the United States Gypsum Company . . . Mail coupon for Free large sample of Perforated Rocklath.

† Trade-Mark.

* Complete information on request.

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300 West Adams Street, Chicago, Illinois
Please send me, free of charge, a sample of USG Perforated Rocklath.

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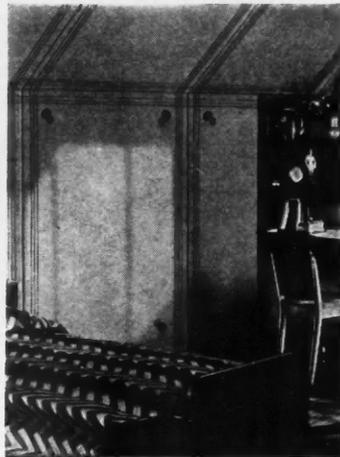


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Tells How to BUILD, MODERNIZE, ORNAMENT

With FIBRE BOARD



8 big pages of valuable information — how walls and ceilings can be modernized and beautified with special designs in fibre board. How to build a simple working table for handling fibre board. How to make the many useful and decorative cuts possible with Stanley Fibre Board Tools, including grooving, beveling, mitre joints, ship lap joints, and circular cuts.

This book can open the door to a valuable and profitable new kind of work for you. If you do nothing but read it, it is sure to give you much useful information. It costs you nothing. Sit down now and send the coupon—it will pay you.



STANLEY TOOLS

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Stanley Tools
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Send me your new book No. P47 on building, modernizing and ornamenting with fibre board.
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— of the Pilgrim's Pride



Homes of simple beauty and dignity—and amazing durability—were built of white pine by the Pilgrim Fathers. Many of these homes still stand, an inspiration to present day builders.

Today, with the Western Pines, you can build homes for the present generation of fastidious owners and for the critical judgment of coming generations. The same qualities that made the early settlers' homes structures of enduring beauty are present in these Western Pines.

Of delicately figured grain—perfectly seasoned—workable and weather resisting—the Western Pines are first choice of fine craftsmen and builders. For any purpose for which softwood is desirable, you will find a grade of the Western Pines especially adapted to your needs.

● Send for illustrated booklet, "Western Pines." Address Dept. B-9, Western Pine Association, Yeon Building, Portland, Oregon.

WESTERN PINES

Idaho White Pine • Ponderosa Pine • Sugar Pine

Real Estate Outlook Promising

(Continued from page 96)

500,000 population, and in more than 96 per cent of all cities of over 200,000 population, capital is seeking real estate loans. Considerable regional variation as to mortgage supply is still shown.

7. New home building is being readily absorbed. A number of cities report that already new building cannot keep ahead of demand.

8. Home sites are selling. Activity in the subdivision market is greater than a year ago in 65 per cent of the cities. Only 1 per cent show a less active market.

9. Office space continues to lag behind business space both in demand and in rental recovery. For both business and office space, outlying sections of cities show far less space absorption than does downtown property. Central office properties show rents higher than last year in only 28 per cent of the 252 cities, but the depression low was passed for this type of structure a year ago, and the present survey found rates lower in only 1 per cent of the cities.

Rents for outlying business properties are shown by the present survey as higher than a year ago in 40 per cent of cities reporting, as against 27 per cent so reporting six months ago. Rents for outlying office structures are higher in 18 per cent of the cities as against 13 per cent so reporting six months ago. In only 2 per cent of cities are outlying business property rents going lower, in only one-half of 1 per cent are outlying office property rents reported going lower.

Special Inquiries on Residential Property

The survey included two special inquiries, on: (1) actual interest rates at which first mortgage loans on new moderate priced homes are now being made; (2) change in residential rents.

Rising real estate activity is shown by 100 per cent of the cities of over 500,000 population represented in the survey. Every city of over 100,000 population reporting shows advance in activity with the exception of one city which reports a condition level with that of last year.

In the East South Central and the Mountain sections 100 per cent of the cities report a more active market than last year at this time, and in the East North Central, South Atlantic, and West South Central sections 95 per cent of the cities report a more active market.

As to higher selling prices, the Pacific section has the best report, with 92 per cent of its cities showing price advance over last year. In the Mountain section and the West south Central section 90 per cent of the cities register price advance. In the East South Central section and the East North Central section 89 per cent of cities show upping of price level.

The one Canadian city reporting, Winnipeg, Manitoba, gives an interesting comparison with survey totals for the States. Details include the following: Market more active than last year. Prices, on last year's level. Under-supply of single-family dwellings. Supply of apartments and of business property, normal. Rents higher than last year for single-family dwellings by about 10 per cent. Rates for heated apartments advanced about 10 per cent. Interest rates falling. Commonest rate for first mortgage loans on new moderately priced homes, 6 per cent.

Honolulu shows both market activity and price level higher than last year. A normal supply of dwellings, apartments and business property is reported. Interest rates are steady, with 6 per cent as the commonest rate for first mortgages on new moderate priced homes.

J-M Adds New Salesmen

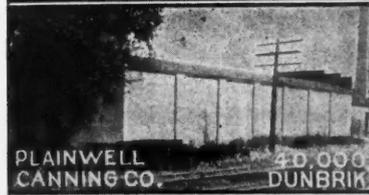
CONVINCED that the market for remodeling and new home construction will continue to show marked improvement, Johns-Manville has augmented its sales staff by the addition of 60 new junior salesmen in the building materials department. These new men will work out of J-M offices east of the Rockies, under the guidance of present salesmen in those territories.

As a prelude to their work for Johns-Manville, the men were brought to New York for an intensive training course designed to acquaint them with the various problems the building industry faces today, and to give them the highly specialized knowledge necessary to properly service J-M building material dealers and contractors as well as consumers of J-M industrial building materials.

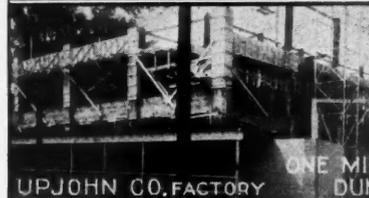
LOCAL DUNBRIK MANUFACTURER GETS THE BEST JOBS IN KALAMAZOO



SOUTHERLAND PAPER CO. 120,000 DUNBRIK



PLAINWELL CANNING CO. 40,000 DUNBRIK



UPJOHN CO. FACTORY ONE MILLION DUNBRIK

Val Berry, the authorized DUNBRIK manufacturer in Kalamazoo territory, gets all this desirable business because his product and price are beyond the reach of competition.

Val Berry's sales are easy because of the high quality of his product—absolute uniformity—square true edges—water repellent faces and strength greater than any building requirement. In addition to common brick, he supplies face brick and DUNSTONE (3 sizes), all in 40 colors, shades and textures, enabling him to supply complete masonry material market.

With DUNBRIK design he saves 20% in material—makes a one-fifth lighter brick,—thus effecting a saving in hauling, handling and laying. In addition he delivers direct from factory to job, eliminating high transportation costs.

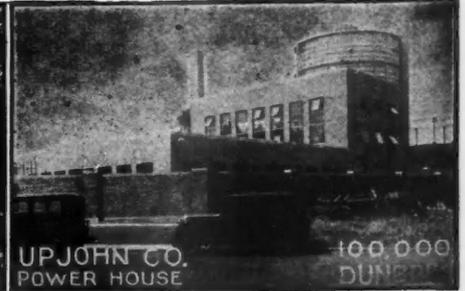
On top of all these advantages, Val Berry's labor cost is less than \$1.25 per thousand. The automatic line production DUNBRIK machine not only eliminates every chance of human error but enables a few men to do the work of a large force and at a fraction of the investment. THEIR BUSINESS FUTURE ASSURED—From Spokane to Newport News—From St. Petersburg to Montreal, wherever located—Authorized DUNBRIK manufacturers are getting as high as 80% of the good jobs.

YOUR OUTSTANDING OPPORTUNITY—Why not learn how you too can assure your business future by becoming the exclusive DUNBRIK Manufacturer in your territory. Write today for free book "4 Keys to Success"

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



UPJOHN CO. OFFICE 150,000 DUNBRIK



UPJOHN CO. POWER HOUSE 100,000 DUNBRIK

Here's 94 Pounds of Sanding Machine that Actually Outmodes them All . . .

•• in Speed •• in Capacity •• in Ease of Operation •• in Quality of Work •• in Economy •• in Profit •• Earning

Through new modern principles of high-speed operation, the Dreadnaught outmodes conventional sanders by years. It packs twenty years of sanding machine specialization in its unique design and precision build.

Amazing capacity is wrapped up in a compact unit that uses the high speed of light weight to out-operate the slow speed of bulkier, clumsier machines. To boot, there's the vital advantage of ready portability.

Tremendous drum speed puts razor-like cutting keenness into the feathery touch of the sandpaper. Old varnish is whisked off old floors at the rate of 600 to 2000 square feet per 8-hour day; new floors sanded almost twice as fast. Cleanly, evenly, and without the waviness of dead-weight pressure. Doesn't clog sandpaper—uses less of it. Sands close to the 1/4-round; dustless in operation.

Contractors by the hundred have proved its money-earning value, its durability and outstanding performance; their evidence is your assurance of its efficiency on any kind of work. And this is backed up by a strong guarantee that means something.

To truly appreciate this little giant of sanders you must see it operate; drop us a line and we'll arrange for this immediately—without cost or obligation.

Clarke Sanding Machine Co., Dept. A-936, Muskegon, Mich.

DREADNAUGHT



Get a Demonstration
—No Cost—No Obligation

Operates from any convenient electric outlet.

Announcing
THE NEW



Designed Like the SMITH BOULDER DAM MIXERS

SMITH 3 1/2-S

- with -
- Spring Mounted Axle
 - Hyatt Roller Bearings
 - Low Charging Height 34 1/2"
 - Big Wide Feed Chute (optional)
 - End-To-Center Mixing Action
 - Short Drum Tilt (thru 40° arc)
 - All Steel Electric Welded Frame
 - Pneumatic or Cushion Rubber Tired Wheels
 - Stover Enclosed Crankcase Engine
 - Machine Cut Gear and Pinion
 - Gears and Engine Completely Housed
 - Telescopic Hauling Stub

A brand new machine • the ONLY mixer with ALL these quality features. Write for new bulletin.

SMITH

MIXERS

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

July Construction Highest Since 1931; Residential Volume Shows Small Decline

CONSTRUCTION work started during July was larger in volume than was reported for any other month since June 1931, according to F. W. Dodge Corporation reports covering 37 eastern states. The July total, which incidentally was larger than for any other July since 1930, amounted to \$294,833,800 and compares with \$233,054,600 for June and with only \$159,257,500 for July, 1935.

Of the July 1936 total, \$72,093,600 was for residential building; \$96,125,200 for non-residential buildings of all descriptions; and \$126,615,000 for civil engineering jobs of all types.

The July figure for residential building compares with \$73,604,600 for this class of work in June and \$48,394,800 for July of last year. For non-residential building the June volume was \$79,078,900 while the July 1935 non-residential building figure totaled \$56,969,100. The June figure for civil engineering projects of every description amounted to \$80,371,100 while the total for July 1935 amounted to only \$53,893,600.

37 Eastern States	July 1936	July 1935	June 1936
Residential	\$ 72,093,600	\$ 48,394,800	\$ 73,604,600
Non-Residential	96,125,200	56,969,100	79,078,900
Public Works and Utilities	126,615,000	53,893,600	80,371,100
Total	\$294,833,800	\$159,257,500	\$233,054,600

Total construction work started in the 37 eastern states during the first seven months of 1936 amounted to \$1,532,564,500 as against only \$855,764,300 for the first seven months of 1935.

Saylor Now with Gar Wood

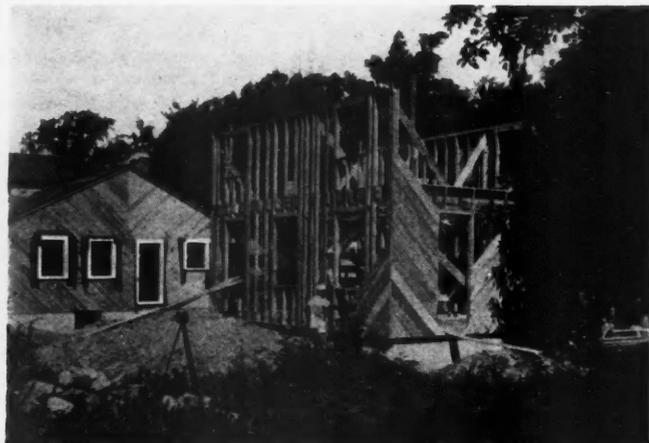
NORMAN Saylor, president and sales manager of the Saylor-Beall Manufacturing Company for the past sixteen years, has been appointed sales manager of the air conditioning division of Gar Wood Industries, Inc., Detroit, Mich.

N.L.M.A. Houses to Open Next Month

THE three low cost demonstration houses being built in Bethesda, Md., a Washington, D.C., suburb, by the National Lumber Manufacturers Association in co-operation with the Federal Housing Administration, are well on the way toward completion. Approximately 100 persons have already requested the opportunity to purchase one of these houses, which will sell complete with lot for \$3450 and \$3850.

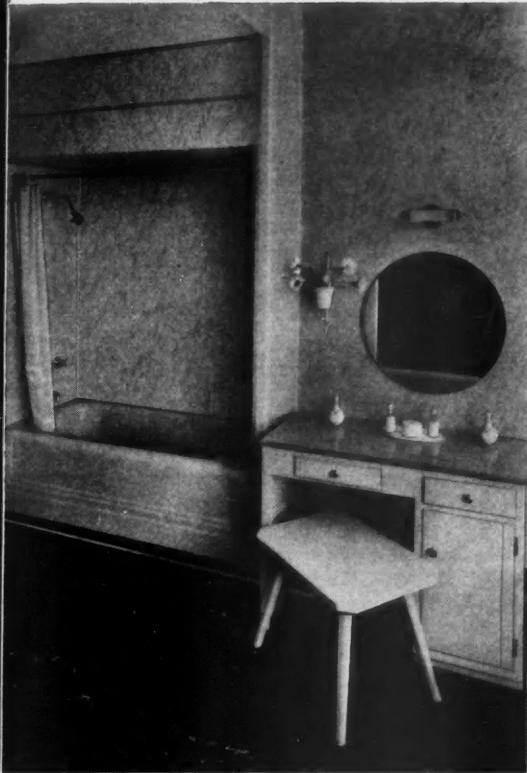
The designs, which were taken directly from suggestions for low cost homes, contained in the FHA bulletin, "Principles of Planning Small Homes," are intended to demonstrate the maximum in living space at a minimum cost. The Association's purpose in erecting the homes is to prove that lumber is the ideal material for the low cost home and that the average American family which is unable to pay more than \$25 to \$28 a month rent can secure adequate accommodations through the construction of a house of this type, using traditional methods.

It is expected that the houses will be completed about Sept. 15, at which time they will serve as exhibits to the public, following which they will be taken over with FHA loans by the first inquirers on the list of 100 potential purchasers.



CONSTRUCTION view of low cost FHA design houses.

In this attractive bathroom, the Armstrong's Linoleum Floor is No. 02 Black Marbelle with No. 42 Jade feature strip. Walls are Armstrong's No. 705 Peach Linowall.



THE FLOOR IN THE BATHROOM CAN MAKE A DIFFERENCE

ONE easy way to make the bathroom help sell your houses is to give it a colorful new floor of Armstrong's Linoleum. Armstrong's Floors are inexpensive to install, and you have five price-groups to choose from. They "set off" the other up-to-the-minute appointments . . . or make old fixtures look young.

Help get that "white elephant" off the vacant list by putting an Armstrong's Linoleum Floor in the bathroom. When you see the results, you'll realize what a big difference the right bathroom floor can make. Send ten cents now for color-illustrated book, "Floors That Keep Homes in Fashion" and "Gay Floors for Basement Playrooms."

Armstrong Cork Products Company, Building Materials Division, 1218 State St., Lancaster, Pa.



ARMSTRONG'S *Linoleum*
and **RESILIENT TILE FLOORS**
LINOLEUM - ACCOTILE - CORK TILE - RUBBER TILE LINOWALL - ACOUSTICAL CEILING

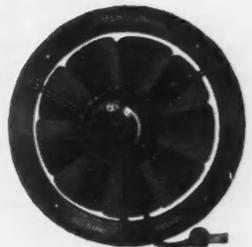


A case of "Give-'em-the-air" and Get the Business

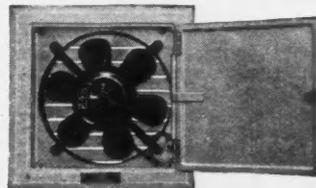
Due to their own experience and to constant educational publicity from many sources, people have become "ventilation-conscious." Nowadays the more desirable tenants and buyers are as much concerned about ventilation as they are about efficient heating, lighting and plumbing. Fortunately, you can "Give-'em-the-air"—rapid and complete air changes—quickly, easily, and at reasonable cost. Simply install Emerson Exhaust and Ventilating Fans in all the business buildings, offices, homes and apartments you erect or modernize. They're sales and lease-clinchers. They'll attract better tenants—justify higher rents and higher sales prices. They enable you to meet fully the public's demand and, at the same time, give you a *real competitive advantage!*

Two-Speed, Ball Bearing EMERSON Exhaust Fans

Emerson Exhaust Fans boast an enviable reputation for efficiency, for trouble-free performance and long life. Actually, they work like magic—in quickly and quietly clearing the air of offensive odors and excessive heat. Can be easily installed in old or new buildings — any type of construction. Used extensively in homes for summer (attic) ventilation.



Complete Line of Kitchen Ventilators



The 9 and 12-inch Emerson Ventilating Units are equipped with quiet, electrically reversible motors. By means of toggle-switch control, the direction of air movement of the fan is reversed—thus cooling breezes may be drawn in, or stagnant inside air, smoke, fumes, odors, heat or steam may be exhausted. Automatic starting and stopping of the fan is provided by door-switch in the wall box, which is adjustable to wall thickness. Easily installed in homes under construction or already completed.

Write for Folder 55-J "How to Select Emerson Exhaust and Ventilating Fan Equipment"

THE EMERSON ELECTRIC MFG. CO.
ST. LOUIS • Branches—New York • Detroit • Chicago

EMERSON  **ELECTRIC**

MOTORS - FANS - APPLIANCES

Leaders in the Fan and Motor Industry Since 1890

**HI, THERE, JIM, SLAP
ANOTHER SHUTTER
TOGETHER FOR ME**



SOUNDS crazy, doesn't it? But still it could be done. You could make your own shutters right out on the job—but you know a better way.

There's also a better way to put in windows, since Curtis perfected the new *Silentite* pre-fit window unit. All parts—frame, sash, trim, storm sash and screen—are pre-fit at the factory. Instead of taking an hour to fit old-fashioned windows, you can now do a better job in 15 minutes with *Silentite*. Even the hardware comes in handy cartons, properly marked.

Install *Silentite* Windows and you'll save time and money. You'll have fewer "kicks" and come-backs. And homeowners will certainly thank you. For *Silentite* is an insulated window, with built-in weatherstripping. Fuel savings run up to 25%. Troubleproof, too, with no sash cords, weights or pulleys to get out of order. *Silentite's* also dipped to add longer life. It sure has everything! Mail coupon below for all the facts. Install windows the modern way.

- CURTIS BROS. & CO., CLINTON, IOWA
- CURTIS & YALE CO., WAUSAU, WIS.
- CURTIS SASH & DOOR CO., SIOUX CITY, IOWA
- CURTIS DOOR & SASH CO., CHICAGO, ILL.
- CURTIS-YALE-PURVIS CO., MINNEAPOLIS, MINN.
- CURTIS COMPANIES INC., CLINTON, IOWA
- CURTIS, TOWLE & PAINE CO., LINCOLN, NEB., TOPEKA, KAN.

Gurtis Woodwork is available through the following distributors:

- Allen A. Wilkinson Lumber Co., Indianapolis, Ind.
- Rust Sash & Door Co., Kansas City, Mo.
- Morrison-Merrill & Co., Salt Lake City, Utah
- Hallack & Howard Lumber Co., Denver, Colo.
- Campbell Coal Company, Atlanta, Ga.
- Jacksonville Sash & Door Co., Jacksonville, Fla.
- W. P. Fuller & Co., Boise, Idaho; Portland, Ore.; Seattle, Tacoma, Spokane, Wash.



THE "INSULATED" WINDOW

Other Curtis products:

- Exterior and Interior Doors • Frames • Trim • Entrances • Moldings
- Panel Work • Kitchen Cabinets • Cabinet Work • Mantels
- Stairways • Shutters • Screens • Storm Doors and Windows
- Garage Doors • Miterite Door and Window Trim

CURTIS COMPANIES SERVICE BUREAU
Dept. 509, Curtis Building, Clinton, Iowa

Please send me complete information on Curtis Silentite, the "insulated" window.

Name

Address

City State

Title I Funds Used Chiefly to Improve Residential Properties

OUT of a total amounting to \$395,882,687 covering 1,086,423 FHA insured loans for the modernization of private property from Aug. 1, 1934, through June 30, 1936, residential properties account for 917,331 loans amounting to \$278,212,038. Single-family residential property loans insured by the Federal Housing Administration number 708,403 with a total value of \$211,180,696. Multiple residential property loans number 208,928 with a total value of \$67,031,342. Retail store and service trades loans number 80,163 for a total value of \$55,719,417. In this classification retail stores represent the largest individual group of borrowers. Stores account for 28,553 loans amounting to \$24,089,487.

The average loan is \$364.39. The figures involve all loans made by private banking and lending agencies and insured under terms of Title I of the National Housing Act.

In classifying the major improvements made with modernization credit funds, 54.8 per cent of the dollar volume or \$216,968,345 went for structural alterations and repairs while 45.2 per cent or \$178,914,342 went for the purchase and installation of machinery and equipment.

The types of property improved, the number of loans and the dollar volume in each classification are:

- Single family residential—708,403 loans, total \$211,180,696;
- Multiple residential—208,928 loans, total \$67,031,342;
- Retail store and service trades—80,163 loans, total \$55,719,417;
- Commercial other than retail—14,431 loans, total \$16,621,644;
- Farm property—39,943 loans, total \$14,930,297;
- Industrial—6,529 loans, total \$14,859,074;
- Institutional—4,224 loans, total \$3,351,139;
- Unclassified property—23,802 loans, total \$12,189,078.

Celotex Buys New Plant

THE Celotex Corporation has announced the purchase of the Metuchen, N.J., plant of R. J. Scott & Company, manufacturers of asphalt roofing material. This new property will be used by The Celotex Corporation for the manufacture of certain new products now under development.

White Made U. S. Radiator President

UNITED States Radiator Corporation, Detroit, has announced that Henry T. Cole, who has been president of the company for many years, has been elected chairman of the board of the Corporation, and that Elwood S. White has been elected president.

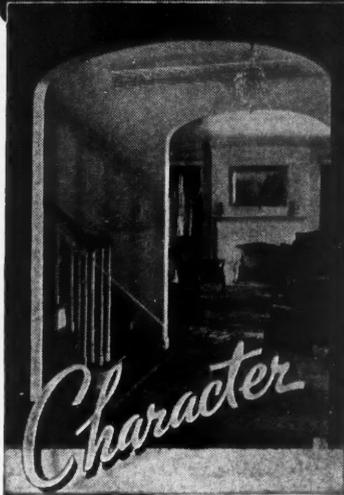
Carrier Holds Dealer Meetings

THE new developments in the Carrier line of air conditioning equipment for the home were presented to the Chicago district franchise dealers of Carrier Engineering Corporation at the Stevens Hotel on Aug. 4 and 5; 120 dealer representatives attended these all-day sessions, preparatory to the distribution of the new air conditioners and automatic heating furnaces.

Other meetings were held at important cities around the country at which Carrier dealers had the complete program for air conditioner and furnaces presented to them by research, engineering, and sales executives from Carrier Engineering Corporation at Newark, N.J.



DEALERS attending district meeting of Carrier at Chicago.



Dr. W. V. Stephenson, Woodville, Ohio, chooses Ohio Sanlime Sand Finish to harmonize with his modernly appointed home in the world's lime center.

DEPENDS ON THE FINISH

● Greater strength for permanent beauty is one outstanding advantage of Ohio White Finish—the ideal plaster material. It offers many others, each an important reason why Ohio White is used in plastering so many attractive, modern interiors. Ohio White is a cool, fat lime. Highly plastic. Spreads easily and quickly, increasing the workman's production, and insuring a uniformly clear velvet-smooth white. It has definite acoustic properties. It preserves metal lath. Whatever the desired decorative effect, you can depend on this superior Ohio Lime for satisfactory, enduring results. All Ohio Lime is 99½% pure dolomite. It far exceeds the standards set by the U. S. government and American Society for Testing Materials. The Ohio Hydrate & Supply Company . . . Woodville, Ohio.

OHIO PRODUCTS SOLD EVERYWHERE IN FAMOUS ZIG ZAG BAGS
Ohio White Finish—Hawk Spread White Finish—Ohio Rite-wall Fibered Lime Plaster—Ohio Sanlime Finish—Mastite Masonry Mortar—Ohio Masons Lime—Ohio Ground Lime.

Original **OHIO WHITE**
L I M E F I N I S H

SISALKRAFT

Cooperates with you and the Home Owner

Every contractor who knows SISALKRAFT says it co-operates with him. He will be thanked for his thoughtfulness when



SISALKRAFT won't rip, tear or puncture when pulled about corners like this. Try tearing a sample and you'll understand why.

he tells a potential home owner about its importance as a building paper. It wraps up and protects a home in a wind and water-proof blanket and protects what is perhaps the most important purchase of a lifetime.

And again, SISALKRAFT co-operates with him on every job because it is so tough and strong. It goes into place on flat surfaces, around openings and corners without trouble. He can handle it rough without danger of tearing, ripping or puncturing it. Windy weather won't stop its application. There will be no time wasted for patching or repairing. Every contractor who has used it welcomes it on every new job.

REMEMBER SISALKRAFT'S THREE IMPORTANT USES: Over sheathing, under hardwood floors and under roofing.

OTHER PRACTICAL CONTRACTOR USES: For curing concrete, closing in against the weather, protecting materials and stock piles and lining tool sheds and shanties.

Over 15,000 Lumber Dealers carry SISALKRAFT in stock. Ask them or write us for full information.

The Sisalkraft Co.

205 W. Wacker Drive Chicago, Illinois

101 Park Ave., New York 55 New Montgomery St., San Francisco

**ECONOMY
ACCOUNTS FOR
Gar Wood
LEADERSHIP**

"MAN, IT'S
GR-R-AND AND THR-R-IFTY!"

OUTSTANDING fuel economy has placed Gar Wood in a unique position of leadership. Everywhere, owners say Gar Wood oil heat costs less than coal. This economy is available, not only for air conditioning and heating homes with warm air, steam or hot water, but also in a complete line of water heaters for domestic and commercial use.

For regions where gas is a logical fuel, there is now a gas-fired Tempered-Aire, which absorbs and uses the same high percentage of the heat generated as the oil-burning units do.

Write and we'll give you all the facts, including details of how we cooperate with architects and builders through our field engineering staff.



<p>Burner and firebowl are coordinated, combustion is complete.</p>	<p>The large combustion chamber insures complete heat absorption.</p>	<p>The "Economizer" increases heating surface to 3 times that of a furnace of conventional design.</p>
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AIR CONDITIONING DIVISION
GAR WOOD INDUSTRIES, INC.
DETROIT ★ MICHIGAN



"From Nov. 15 to Mar. 15, the oil used was 1500 gal. Heat has been uniform and satisfactory."
R. B. Moody



"We reduced our heating cost over coal and wood hand-firing approximately 35%."
Chas. P. Pinardi



"Our heating cost for 7 large rooms for 5½ months was \$78.20."
J. F. Feltmann

Republic Steel Changes Personnel

FRANK C. Miller, formerly associated with the Detroit sales office, has been appointed manager of sales, Tin Plate Division of Republic Steel Corporation. Mr. Miller succeeds George E. Totten recently resigned.

P. H. Hubbard has been named assistant manager, as has J. B. DeWolf, formerly district sales manager of the Philadelphia territory. Further alignments in the division include the appointment, as field man, of W. H. Ungashick, who was formerly associated with Canton Tin Plate Company which was recently acquired by Republic. J. T. McBride has been named chief clerk of the division.

Plan Sales Increase

JOSEPH M. Wright, president of National Plan Service, Inc., reports that they have sold more house plans this year than any year for five years, showing an increase of some two thousand per cent. The feature of these sales of great interest to *American Builder* readers is that practically all the sales are for houses ranging in cost from \$3,500 to \$7,000. This confirms the statistics published by the *American Builder* and other sources, indicating that the greatest active market today is for houses in this price range.

Faculty Changes at Armour Institute

LOUIS Skidmore, Chicago architect, has been appointed director of the Department of Architecture and professor in charge of senior design at Armour Institute of Technology, Chicago, for the school year beginning in September, 1936. He succeeds Earl H. Reed, who has resigned in order to give full time to his architectural practice.

Mr. Skidmore will be assisted in administering the Department by Jerrold Loebel, of Loebel and Schlossman, who will serve as assistant director. Mr. Loebel, a graduate of Armour in 1921, has served during the past year on the Advisory Committee of Architects, and is in close contact with the work of the Department. Mr. Skidmore, a graduate of Massachusetts Institute of Technology, and a winner of the Rotch Traveling Fellowship, spent three years traveling in Europe and studying at the Ecole Beaux Arts and the Academy of Rome.

Building Made Huge Paint Display

CAPITALIZING the location of the Alabastine Company, in Grand Rapids, Mich., and dramatizing the major expansion program begun by the firm early this year, a redecoration project has been completed to convert the main plant into a large outdoor advertising display. A specially prepared light-reflective cement coating covers the entire exterior surface of the plant. At night, powerful 5000 watt floodlights play upon the structure, brilliantly illuminating the entire surrounding area as well as the plant proper.

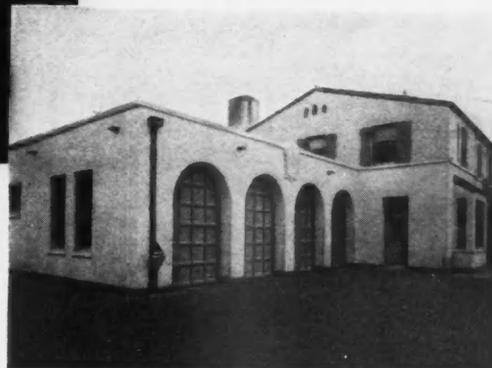


EXTERIOR of Alabastine plant lighted for night display.

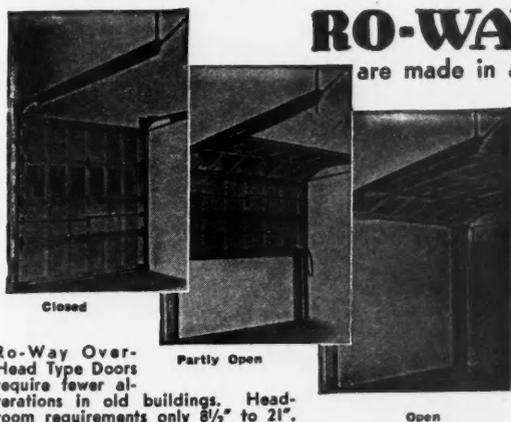
THEY STAND UP *in Hard Service*

When you install Over-Head Type of Doors, for commercial and industrial use, put up the kind that will bring you the future business. Ro-Way Doors "stand up" . . . because of eight "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 3/4" 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 waterproof 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 1/4" thick by 3/4" wide.
- 8 Vertical and horizontal tracks are especially made of special steel and reinforced with angles.



U. S. Government Inspection Station. Note all Ro-Way Doors have arch segment tops, to conform to architect's design.



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

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

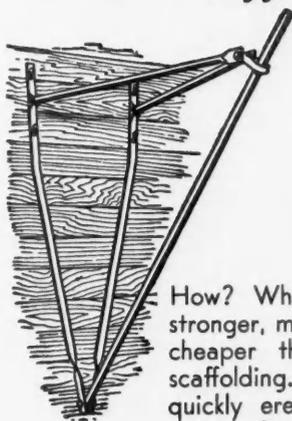
Rowe Mfg. Co.

737 Holton St.,
Galesburg, Ill., U. S. A.

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.

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



EARN TWO PROFITS

Build these attractive, modern Steelex homes and earn a sales profit on materials too.

Steel Buildings, Inc., of Middletown, Ohio, largest steel homes company, wants alert, progressive builders and dealers. Protected territories. We furnish all materials except masonry, wiring and plumbing roughing in.

Fifty beautiful plans. Three to seven rooms. \$2,250 to \$7,500, erected. Approved for FHA Mortgage Insurance. Steelex construction is rugged, enduring, fire- and lightning-safe, termite proof. All homes heavily insulated and easy to erect.

For complete details mail coupon attached

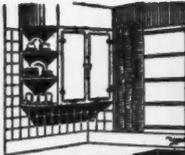
STEEL BUILDINGS, INC. AB-936

MIDDLETOWN OHIO

Please send me, without obligation on my part, complete details on your Steelex homes. I am interested in construction information (). In becoming a distributor ().

Name _____
Address _____
Town _____
State _____

Modern Kitchen Cabinet Hardware in Crome



EXTRA PROFITS for You! Easy sales in every kitchen remodeling job. A "natural" for new kitchens. Matches surrounding appliances, gives style to cabinets—that's smart modern designed cabinet hardware in sparkling non-tarnishable Crome finish. That's what the home buying and remodeling public are shopping for. Shopping for new, up-to-the-minute ideas and their money's worth. Here's the line, *exclusive but not expensive*. Order through your dealer. Send for catalog-folder showing complete line. Handy to take on jobs to quickly figure costs. No obligation. Write.

NATIONAL BRASS CO. Mfrs.
Grand Rapids, Michigan

DEALERS:
It's a fast selling profit maker—if it's out-in-front on the counter. Two Junior Panels. (Right) Jr. "Colonial" conservative styled cabinet hardware. (Left) Jr. "Moderns" modern designed cabinet hardware.

PANEL FREE!
FREE to Dealers: These beautiful metal displays—choice & colors: Black, Yellow, Green—offered free; you purchase only the hardware on them. Write for complete information, catalog, dealer's prices. No obligation.





National Brass Co.
Certified Builders Hardware
Cabinet Hardware
Screen Door Hardware

Heat Wave Test

(Continued from page 68)

public an exterior wall of beautiful stone.

"Ageless Art" homes are now being built by franchise builders in many Wisconsin cities and recently the Illinois territory has been tapped by the granting of a license to A. C. Dallach of La Grange, Ill., who is completing his first unit of three homes and is ready to start a second unit of six homes. Wherever these homes are built they are watched by prospective home builders with the greatest interest and this interest is bringing in orders for homes—homes built to last one hundred years—"Ageless Art" homes.

The Edwards "Ageless Art" system of double wall construction includes new and valuable improvements in fireproof building construction and is particularly adapted for low cost, damp-proof, insulated, natural stone homes.

The system is fully protected by several major claims allowed by the U. S. patent office. It must not be used without authorization without liability for infringement.

To use the system, builders, architects or engineers are issued licenses on a royalty basis. The service may or may not include the architectural service. It does include complete instructions and consultation service. It also includes a delivered price on the rough trimmed quarry stone used for the outer, or bearing, wall of the double wall construction.

The ability to use this rough trimmed quarry stone with an irregular inner face effects a substantial saving.

The "Ageless Art" double wall consists of an outer bearing wall of stone, having an irregular inner face. This outer wall is a minimum of 8" in thickness but may range from 8" to 11". The concrete floor structure is supported by this outer wall. The inside of this wall is then covered with a layer of a half to three quarters of an inch of a waterproofing and insulating material known as Spray-O-Flake which is applied by a spraying process, thereby sealing the wall against the infiltration of air or moisture.

The inner wall, which is erected after the insulation and waterproofing is applied, is supported entirely by the floor structure and consists of a curtain wall which may be built up of any light weight non load bearing material, such as 3" gypsum block.—John D. Edwards, Builder and Patentee, Milwaukee, Wis.

K & E WYTEFACE

TRADE MARK
STEEL MEASURING TAPES



for **VISIBILITY!**

Here is a black-on-white Steel Tape that's as easy to read as a newspaper headline. WYTEFACE visibility is not only a convenience, but it greatly reduces the possibility of costly errors.

And WYTEFACE stays white—the surface will not crack or chip. Superior resilience gives WYTEFACE a remarkable resistance to kinks and curls. The corrosion-proof surface protects the steel from rust.

You'll want to know more about WYTEFACE Tapes. Write for complete information.

KEUFFEL & ESSER CO.
EST. 1867
NEW YORK, N. Y. CHICAGO, ILL. SAN FRANCISCO, CALIF. MONTREAL

PWA Is Largest School Builder

THE Public Works Administration has been responsible for three-quarters of all school construction during the last three years. As America's largest school builder, PWA has encouraged the merger of rural school districts to provide the so-called consolidated or union high schools. While this policy is primarily intended to strengthen the security for PWA loans by increasing the area of taxable property backing them, it has had the effect of centralizing educational opportunities in larger plants, providing better equipment and improved instruction for rural pupils.

Plan Gas Appliance Campaign

DEALERS in gas appliances throughout the country are preparing to co-operate actively in merchandising activities which will tie in with the comprehensive national advertising campaign of the American Gas Association. Initial advertisements sponsored by more than 700 gas companies will appear in September publications. The advertisements will tell the public that "There's nothing like gas for cooking, refrigeration, water heating and house heating" and will explain just why gas is the ideal fuel for these purposes.

"And... the kitchen has a **VICTOR IN-BILT VENTILATOR**"



● She made up their minds they would buy that home the minute she saw the Victor In-Bilt and realized what it meant to the comfort and healthful living they would enjoy in their new home. The gleaming, smartly styled grill of this most important household convenience adds an air of swank to the modern kitchen and has a feminine appeal that is practically irresistible. Test its amazing sales power by installing one in the next home you build. Be sure it's a Victor—not just a ventilator—because only Victor gives you the best in both appearance and mechanical performance. 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 grill in another.

DEALERS

Kitchen Ventilation is a necessity for smart, modern homes. Air-conditioning propaganda has made America aware of the need for healthful, clean air and the elimination of cooking odors, greasy fumes and smoke. Get your share of this profitable business. Write for the whole story, now!

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

Kitchens SELL Homes - Ventilators SELL Kitchens



"I want a job in your shop!"

Put this **MONARCH VARIETY WOODWORKER** to work for you and save time . . . space . . . power . . . MONEY. Quality in every line and operation. Four men can use this machine at one time. A combined Rip and Cut-Off Saw Bench, with Boring Attachment, Hollow Chisel Mortiser and 8" Jointer. Electric motor or

gasoline engine, or supplied without power. Now's the time to "Modernize with Monarchs."

Complete catalog and prices on our full line of modern woodworking machinery, saw mills, etc., sent on request. Write and tell us your own requirements and situation.

AMERICAN SAW MILL MACHINERY CO.

Makers of Woodworking and Saw-Mill Machinery
60 MAIN STREET HACKETTSTOWN, N. J.

This ONE Material Gives You FOUR Ways to Get Jobs

Capturing the prospect's interest is one of the biggest problems in selling any building material. Nu-Wood—the multiple-purpose wall and ceiling covering—gives you at least FOUR ways of doing this. You can sell it as better decoration—for no other material can match Nu-Wood's glowing, varied colors and unique surface texture. You can sell it as insulation—for Nu-Wood gives efficient protection from extremes of heat and cold. You can sell it as a noise-quieting material—because Nu-Wood makes rooms quieter. And you can sell it for acoustical correction in theatres, churches and public buildings.

Nu-Wood appeals to the prospect who wants more for his money. It literally sells on sight—once a customer has seen the beauty of Nu-Wood he is no longer satisfied with old-fashioned materials. And Nu-Wood, too, is priced for quick selling.

Build a profitable business for yourself with Nu-Wood. Write us for the facts!

Nu-Wood Tile on the ceiling and Nu-Wood Plank on walls transform a shabby interior into an interesting new one.

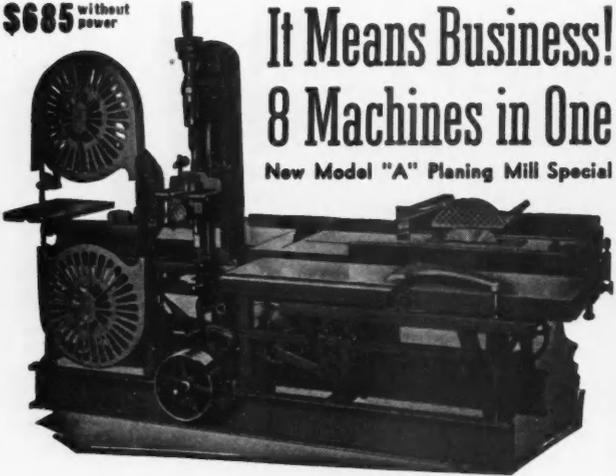
WOOD CONVERSION COMPANY
Room 119, First National Bank Building, St. Paul, Minn.

I want to know more about Nu-Wood. Please send me, without obligation on my part, information and illustrations.

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

NU-WOOD
MADE BY THE MAKERS OF BALSAM-WOOL

\$685 without power



It Means Business!
8 Machines in One
New Model "A" Planing Mill Special

This new model of Parks means business for you and plenty of it, because with its 8 full-sized machines you can do the whole job from rough lumber to finest trim and finish. Each machine is independently operated, equipped with high-grade ball bearings.

Send for catalog of our complete line of individual and combination machines, priced as low as \$50.

THE PARKS WOODWORKING MACHINE CO.
Dept. BL-9 1524 Knowlton Street Cincinnati, Ohio



LETTERS from Readers
on All Subjects
Facts, opinions and advice
welcomed here

Thank You Jim

Cleveland, Ohio.

To the Editor:

I want to congratulate you on the manner in which you have handled the article regarding the questionnaires in this month's issue of your magazine. I think you did a swell job and it should be the means whereby we can get the builders and material dealers to tie into this effort.

Thanking you for your splendid cooperation and with kindest personal regards, I remain,

JAMES GARRET CAFFREY,
Special Assistant to the Administrator,
Federal Housing Administration.

Architractors

Burlingame, Calif.

To the Editor:

We think so much of your editorial on "Meet the Architractor"—because it fits our company exactly—that we would like to obtain reprints of this article.

Will you be kind enough to advise the cost of 100 reprints of this article as it appeared in the July issue of the *American Builder*. We intend to adopt the name of ARCHITRACTORS and would like the reprints to use with our mailing and to give as an explanatory article to those who would not know what the name means.

ARTHUR H. MEYN,
Peninsula Builders.

Architecturally Trained Architractors

Milwaukee, Wis.

To the Editor:

I am enclosing my first request for catalogs for myself. I have heard quite a bit about the fine service you render in that connection.

I am very much enthused about the idea of calling designers (who are architecturally trained) ARCHITRACTORS. It seems to me that there is a vast number of men in the building industry who are trained perhaps as professional architects but who have followed the contracting business. Then there is always the class of contractor who comes up as it were from the ranks and has had no technical training at all.

Why not, then, have three classes of men in the building field—the architect, the architractor who takes the place of the designer, and the contractor. I should like very much to see something done about adopting a kind of code to enforce, as it were, the use of the name Architractor. Let's have that name held as a definite meaning and as standing for a certain class of man.

JAMES A. SCOBIE,
Designer and Builder.

To Learn While Working

Putnam, Conn.

To the Editor:

A renowned educator recently stated that the progress made to date in the science of teaching might well be likened to the progress made by physicians about the time the circulation of the blood was discovered. The technique of teaching, unlike surgery, chemistry and other exact sciences, is based upon philosophical hypothesis rather than upon facts. A student of apprenticeship in the building industry likewise knows that, except in a few instances, not much progress has been made in this particular field since the middle ages.

(Continued on page 110)

Free Ticket
TO DETAILS ON DOORS THAT WILL
GIVE YOU MORE FOR YOUR MONEY

YES! Tell us how RoL-TOP construction means money to us and more satisfactory service to our customers.

Name _____
Address _____
City _____ State _____

Built in any size wood or steel for any service opening in OLD or NEW BUILDINGS. Manually or electrically operated.

Mail Today!
THE KINNEAR MFG. CO.
1560-80 Fields Ave., Columbus, O.



Kinnear RoL-TOP Door

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 **FREE** LEATHER SAMPLE KIT Show your customers the nails you recommend.

GENUINE ONLY WHEN PACKED IN THESE **HANDY 5 LB. CARTONS**




WEATHERBEST Advertising Sales Service
WEATHERBEST Builders and Supplies
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WEATHERBEST Key Contractors—Application Division
WEATHERBEST Colored Photographs Service
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Weatherbest STAINED SHINGLES
 For Roofs and Sides—Walls

WEATHERBEST CORPORATION,
 180 Main St., North Tonawanda, N. Y.

Send details of the new WEATHERBEST Selling Plan—without obligation.

JOIN THE PARADE TO PROFITS!

Put the proven WEATHERBEST Sales and Service Plan to work for you NOW. Send today for all the facts.

Firm _____
 Address _____

Find Out **WHY**



PEERLESS FIREPLACE DAMPERS ALWAYS WORK

When your client asks if the fireplace will work, you need not hesitate to guarantee perfect operation if the PEERLESS FIREPLACE DAMPER is installed because:

- There are no back drafts
- Heat loss and smoke are eliminated
- Perfect operation cuts out all unhealthy drafts
- They wear a lifetime, are made in all standard sizes (3 models to choose from—Rotary Control—Poker Control—Chain Control) and their small cost is repaid many times by saving in fuel, due to proper burning.

Write today and find out further why
PEERLESS FIREPLACE DAMPERS ALWAYS WORK
OTHER PEERLESS PRODUCTS

Fireplace fixtures—ash dumps—coal windows—ash pit doors—garbage receivers, radiant gas heaters, Gas Conversion Burners and Stokers.
 Details and prices on request.

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

GET THIS FLOOR SANDER FREE FOR 5 DAYS TRIAL

BUILT to the specifications of Professional Floor Sanders, the New Improved Schlueter meets every requirement.

It "roughs out" both old and new floors—leaving a ballroom finish in a minimum of time and with minimum effort.

The high-speed, fast-cutting, resilient rubber-covered roller automatically conforms to all floor irregularities without extra weight over drum or manipulation of levers by operator.

- 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 of our 5-Day FREE Trial Offer.



MAIL COUPON TODAY
 LINCOLN-SCHLUETER FLOOR MACHINERY CO., Inc. 636
 222 W. Grand Ave., Chicago, Ill.
 Please send full details of your 5-Day FREE Trial IMPROVED SCHLUETER Offer. Also tell me how I can own it. Interested in Time Payments.

NAME _____
 ADDRESS _____
 CITY _____ STATE _____



Natural texture and rich color preserved through correct drying and seasoning.

Lays without waste and stays where you lay it.

Marked and guaranteed for grade with the NOFMA copyrighted label certifying highest standard of quality.

ASK YOUR LUMBER DEALER
or Address

FORDYCE-CROSSETT SALES CO.
FORDYCE and CROSSETT, ARKANSAS

make **MONEY!** *save* **MONEY!**

MURAL-TONE is the amazing, perfected casein paint. Lithopone and real pigments in a casein vehicle give it revolutionary advantages. One gallon thinned with water yields one and two-thirds gallons of paint. Covers as much as 1,000 sq. feet. Preferred for walls and ceilings. 10 colors—and a white that cannot yellow.

A fraction of a day is all that's necessary for a finished job. Property owners, painters and dealers are amazed at MURAL-TONE's speed, beauty and economy.

Strong ads in the magazines listed below are spreading the good news country-wide. Write today. Get complete facts. The Muralo Company's reputation for quality goes back to 1894. MURAL-TONE is the answer to the crying need for a truly economical flat wall paint. Take advantage of this opportunity to make money—or save money. Please address THE MURALO CO., INC., 568 Richmond Terrace, Staten Island, N. Y. 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 UNSEASONED 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 • Buildings & Building Management • National Painters Magazine • Sweets Catalog

A MURALO PRODUCT

Letters Dept.

(Continued from page 108)

Concerning your very interesting article on the shortage of men in the *July American Builder*, I would like to offer a few comments based upon my experience and knowledge both as a skilled mason and as a trained trade instructor. In most cases indentured apprenticeship in the mason trade may well be classed with such other highly inefficient gadgets as dirt roads, kerosene lamps and the horse and buggy.

The Federal Committee on Apprentice Training is to be commended. The ideas and suggestions in bulletin No. 3 Indentured Apprenticeship, issued by them, are sound and under an ideal setup would unquestionably do much to help the present muddled situation we call apprenticeship. However it may require years of effort to bring about this ideal situation. The present problem is to fill the depleted ranks, keep the cost of building within reason and most important of all provide an opportunity for our young men to learn something useful in order to earn a livelihood and it must be done in a hurry. Whether or not this may be accomplished will depend upon our ability to meet this emergency intelligently and efficiently.

We cannot place the blame for the lackadaisical attitude towards apprenticeship on either the contractors, the manufacturers and dealers, or upon labor organizations.

Skilled workers are not created over night; three to four years of carefully planned and supervised instruction under trained men will most certainly develop a young man of average intelligence and ability into somewhat of a skilled worker in that period of time but a careful analysis of the method commonly employed will reveal that the young man who serves his time, usually in an unorganized manner and under doubtful instruction and supervision must, to use the parlance of the trade, "Go out and take his knocks." In plain English after he has spent three or four years as a so-called apprentice he must go out and be hired and fired until he picks up enough skill and dexterity to hold a job. The length of time required to do this is certainly much longer than should be necessary if the apprentice was taught properly in the first place but it is just what has happened to a large percentage of our present skilled workmen.

It is exceedingly doubtful if the coming building boom will wait until young men have served their three or four years apprenticeship and then from two to four additional years to develop into skilled mechanics nor is it probable that enough young men could be found who would be sufficiently stupid to put up with this so-called apprenticeship or waste three or four years time learning what could be taught in less than a year if a more effective plan of training was made available.

In order to meet the potential demand for skilled workers apprenticeship must be "Streamlined." Modernize it, bring it up to date. For the interest of all concerned let us forget the old order. With the skilled mechanics now available as a nucleus let us give the young men who are interested sufficient intensive training in the art of laying bricks to enable them to secure employment at the trade. Let us recognize the fact that bricklaying is a handcraft trade and regardless of the amount of time spent learning the fundamentals it is necessary for the young man to be encouraged and given employment at a wage commensurate with his ability in order that he may continue to develop greater skill and value after he has completed his preliminary training. This would call for cooperation by hiring these young men in order to gradually build up the depleted ranks of the skilled bricklayers.

THOMAS R. KELLY.

Information for Students

Cedar Falls, Ia.

To the Editor:

I am enclosing herewith your June and July request blanks upon which I have listed the numbers of publications listed, in the respective issues, as available upon request through your office.

Please understand that I am not requesting this literature merely because it is free or with the desire of acquiring something at the expense of these producers or anyone else.

As indicated on each slip, I have charge of the vocational educational department in the Le Mars High School at Le

(Continued to page 112)

Something to
take the eye...

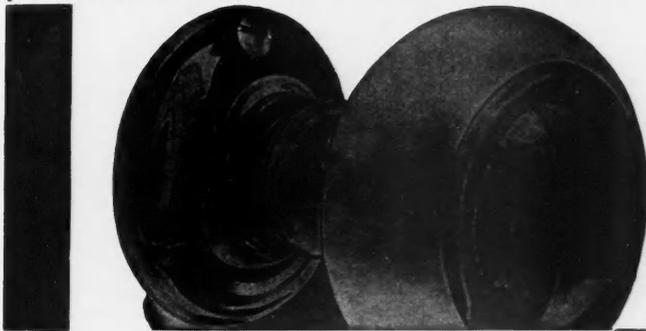
Patrician
HARDWARE

The jewel-like qualities of Patrician are wholly pleasing. Plastic knob material framed in natural metal, is available in a variety of colors and makes possible decorative motifs true to the last detail.

Practical, the knob material will not tarnish and is easily cleaned.

Exclusively by

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



**FOR FLOOR
SANDING**

AMERICAN Floor Sanding Machines surface floors with a speed and cutting efficiency that will amaze you. That's the reason why so many of America's largest floor surfacing concerns will use nothing but American equipment. It is dependable, economical and therefore bound to make you more money. A complete line of floor surfacing machines is manufactured, in all sizes, to satisfy any and all requirements.

AMERICAN SANDERS

FOR THE EDGES

There is no place that a man can lose money quicker than on the edges of a floor surfacing job if he is not properly equipped. The American Spinner is just the machine for edging. It gets right up to the base and doesn't leave a hair of unfinished floor. The sanding disc rotates at a high speed and at an angle that eliminates any possibility of disc marks. This machine matches the border of the floor perfectly.

THE AMERICAN FLOOR SURFACING MACHINE CO.
511 South St. Clair Street
TOLEDO OHIO



**Line Up With
CRAWFORD**



For Increased
Profits

For 100 Per Cent
Dealer Protection
And Customer
Satisfaction

COMPLETE DOOR EQUIPMENT
For New or Old Garages

SECTIONAL UPWARD-ACTING DOORS

of latest improved design—simple, rugged—affording ease of operation, serviceability and long life. Models for residential and commercial use; for public garages, service stations, warehouses, etc.

CRAWFORD UPWARD-ACTING HARDWARE

for changing swinging or sliding garage doors into one-piece doors of the upward-acting type. Also used on new doors, presenting an opportunity to make a double profit every time you sell a standard door from your stock.

Write for literature today.

CRAWFORD DOOR COMPANY

7851 Conant Ave.,

Detroit, Mich.



**NOW YOU CAN MORTISE
A DOOR IN ONE MINUTE**

WAPPAT Model D Lock Mortiser cuts complete mortise (including face-plate recess) in 45 doors an hour.—Pays for itself on first 350 doors.—Always does a perfect job.—Every operation automatic.

A patented WAPPAT feature makes this machine twice as fast as any other. You don't have to go over all your doors once for the barrel mortise and go over them again for face plate. Neither do you have to change cutters.

You will be interested in the WAPPAT portable electric door plane too. It's ten times faster than planing doors by hand.

Let us give you a convincing demonstration. No obligation.



Become the door specialist in your community. Equip yourself with these tools. Take contracts to fit and mortise doors at prices no contractor can refuse. Make big money. Ask about time payment plan.

WAPPAT
INCORPORATED

Division of

Simonds Saw and Steel Co.
7532 Meade Street,
Pittsburgh, Pa.

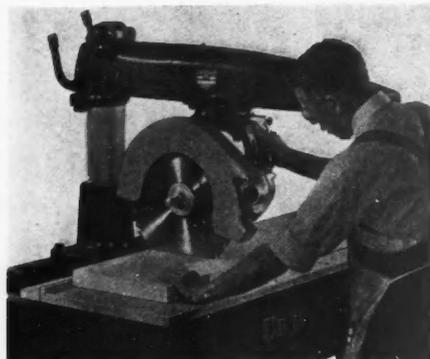
Please tell me more

Name _____

Address _____

City _____

"A GREAT TIME SAVER TO US..."



HUNDREDS of letters in our files tell the same story. DeWalts are great time-savers because they cut off, rip, bevel, mitre and perform 29 distinct operations without tilting the table or swinging the material. No contractor or lumber company can afford to be without a DeWalt. It will pay for itself quickly by saving time, labor and material.

Write for Information and Prices.

DEWALT PRODUCTS CORPORATION
263 Fountain Ave., Lancaster, Pa.

RENEW OLD BUILDINGS with PLASTIC STUCCO

This new machine and process completely solves the problem of permanently surfacing new or resurfacing old masonry buildings, walls, etc. It fuses a prepared waterproofed plastic mixture on any masonry surface. It fills all cracks and checks and can be applied in any thickness desired and in 30 colors and shades. Fully proven by over ten years actual use under all conditions and every climate.

LARGE WAITING MARKET

Owners everywhere want to enhance present values and make their masonry buildings more attractive and livable. The better builders are striving for greater permanence, beauty and salability in their new construction. With Colorcrete stucco spraying, you can supply this waiting market and can offer permanent, colorful surfacing at amazingly low cost. Many operators report costs of 2c or 3c per sq. ft. and sell at from 4c to 7c. Some have paid for their equipment from first couple of jobs. Machine capacity up to 1000 sq. ft. per hour. Equip yourself now to cash in on this big waiting market.

Get the facts. Send for books. "Proven Business Opportunity." Write today. It offers extra income now with big future possibilities.

COLORCRETE INDUSTRIES, INC.,
500 Ottawa Ave., Holland, Mich.

"After giving this saw a thorough try-out, we believe it is the best piece of equipment we have ever operated. It is a great time saver to us, due to the fact that we can run special molding on it, using it for shaping, whereas we would have to wait a day or two on a mill to secure this work."

Geo. W. Owens
Lumber Co.,
Dallas, Texas.

Letters Dept.

(Continued from page 110)

Mars, Iowa. The work of the department centers around the building trades field, and I feel that literature such as you list as available is valuable material for boys interested in this field to become familiar with.

M. O. COWAN,
Vocational Instructor.

Planning Small Homes

Jacksonville, Fla.

To the Editor:

I am at present a subscriber to your magazine and, in fact, am today mailing a renewal subscription to your New York office, as my present subscription has just about expired.

I am seriously considering entering the building business in Jacksonville, having had considerable experience in the line and having devoted considerable study to the various new developments in building materials and methods as they have appeared in your magazine and others. I am particularly impressed with the need for *really low-cost small homes* for young couples or small families who, like myself, for example, cannot afford to pay for a home costing \$3,000 to \$4,000, which is about as low a cost as a new home can be had in a respectable neighborhood in Jacksonville at the present time. Yet do not wish to locate in a low class neighborhood. Real low cost small homes are absent from the market in Jacksonville, so far as I have been able to learn. I was particularly interested in the "Apartment Type Small Home" on page 60 of your May, 1936, issue, as well as the article, "Planning Methods for Small Dwellings," beginning on page 60 in your July issue. It is my present plan to devote considerable time and study to working out a few more or less standard floor plans of homes of three, four, or five rooms, planning them for utmost efficiency possible so far as materials and erection costs are concerned.

In view of the above, it would be of considerable advantage to me to have in my hands enough catalog material to enable me to intelligently select the various items of building materials, equipment, etc., to be considered in making my plans.

FRANK ADAMS,
Adams Brokerage Co.

Houses Like Trailers

Durango, Colo.

To the Editor:

In a recent issue of the *Builder* you mentioned the difficulty of securing plans for an inexpensive house suitable for a poor man. This is certainly true if one is building a \$5,000 to \$15,000 and up house. There is a multitude of plans available at low cost for the man who can really afford an architect. Noticed a set of plans in Collier's recently for \$3.00, for a \$12,000 house. In small towns the drafting is usually crude and leads to unpleasant disputes over extras when building a small house. Most any kind of merchandise can be bought by a poor man and he can see what he is getting—except a house—and I believe this is one of the reasons small home building is lagging in small towns like this—at \$4,000 there are no new homes under construction.

Your remarks about comfort in a trailer could truly be copied by small house building. I have seen some wonderfully comfortable arrangements in an 18 foot trailer; give us some of the built-in details for trailers.

H. R. BURNSIDE.

Sound Basis for Prosperity

Tampa, Fla.

To the Editor:

I wish to use this opportunity to inform you that I am finding your magazine more interesting every day and in my opinion it is one of the biggest contributions to the re-establishment of the prosperity in this country on a solid basis, because no prosperity can be obtained without a sound building program.

DOMINGO RANON,
Ranon & Jimenez.

And Apply **CAULK-O-SEAL**
with the



CAULK-O-SEAL
REG. U. S. PAT. OFF.

Super-plastic, non-staining, elastic caulking compound in year 'round use by building, caulking, painting and roofing contractors. For inside or outside use; makes permanent seal; saves fuel costs. Black and 9 colors in tubes, cans, drums and cartridges.

ASK YOUR DEALER
Send for Descriptive Circulars

CALBAR PAINT & VARNISH CO.
Manufacturers of Technical Products
2612-26 N. MARTHA ST. PHILADELPHIA, PA.

ALBION



PRESSURE GUN

Modernized trouble-free gun. Nothing to get out of order. Power, strength, dependability. Rust-proof cadmium finish.

DEALERS WANTED

SEVERAL VALUABLE FRANCHISES AVAILABLE

WRITE FOR

78 Page

ILLUSTRATED CATALOG

B

Increase profits by selling and installing PROTEX weatherstrips and caulking. 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.

LOOK!!
THE NEW
WONDER
"CUB"

Built like the big Wonders. Sturdy, compact, modern. Delivers a big wheelbarrow full per batch. A money maker for handling low-yardage jobs. Complete with latest 4-cycle, easy starting, air-cooled engine. Write for the facts on this and complete line of larger machines.



\$9950 ON PNEUMATIC TIRES

\$7750 ON STEEL WHEELS

CONSTRUCTION MACHINERY COMPANY, Waterloo, Iowa

10 Day Trial No Deposit

TRY A STERLING CONVERTIBLE LEVEL

for 10 days on your job with no expense or obligation to purchase. Sturdier construction, higher power telescope, and exclusive patented features assure greater accuracy and lower operating costs. Save time and make more money by using a Sterling Level.



Patented

The Gold Medal Level

Sterling Model No. 40

Clip this coupon to your letterhead.

WARREN-KNIGHT CO., 136 N. 12th St., Philadelphia, Pa.
Send new Bulletin F-19 describing Sterling Convertible Level, Model No. 40, and giving details of free trial offer and easy payment purchase plan.

Name _____

Address _____

Position _____

Fabricated Wall Panel Tests

(Continued from page 82)

strong but other considerations, such as the necessary openings in walls for heating ducts, wiring, plumbing, and double-hung windows, may make desirable a thicker wall.

Panel Nos. 2, 3, and 4 had maximum loads of 134, 219, and 373 pounds per square foot when adjusted to the basis of a uniform load. These loads are greater than that for Panel No. 1 in approximately the amount expected because of the greater thickness of the panels. Lesser deflections, for a given load, of course, accompany the greater thicknesses of the panels. The recorded deflections for a load of 15 pounds per square foot, assuming the load uniformly distributed, were 0.33, 0.22, 0.13, and 0.05 inch for panels with overall thicknesses of 1 7/8, 2 1/4, 2 3/4, and 4 1/8 inches, respectively. In other words, increasing the thickness of the wall by using wider studs increases the bending strength about as the section modulus is increased, or at a slightly faster rate than the stud width are increased; and the stiffness increases about as the moment of inertia is increased, or in about the same ratio as the squares of the stud widths.

Panel Nos. 1, 2, 3, and 4 buckled at loads one-fifth to one-third maximum because of the relatively low stiffness of the plywood perpendicular to the length of the panel.

To stiffen the panel in a crosswise direction pieces at right angles to the length were inserted in Panel No. 5. The lengthwise and crosswise pieces are notched half way through at each intersection. Panel No. 5 showed considerably less tendency to buckle across the panel than did Panel No. 1. It was, however, lower in maximum load than Panel No. 1, the first failure occurring at the notches in the studs between one load point and support. The failure at the notches was caused by a high concentration of stresses, which is often several times that indicated by usual calculation. This concentration was brought about by the abrupt change in cross section. The failure at the notch occurred between a load point and a support where the shear stress is the highest. In order to overcome this difficulty and yet obtain greater stiffness than that obtained in Panel No. 1, short pieces were fitted snugly between the studs in Panel No. 6, thus leaving the studs of uniform cross section throughout their length. Panel No. 6 exceeded Panel No. 1 in maximum load by 25 percent and in stiffness by about 20 percent. Panel No. 6 also showed little tendency to buckle until near the maximum load.

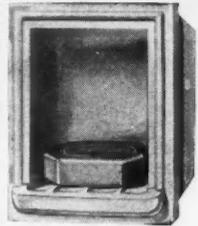
The tests show that wall panels made with stressed coverings, such as plywood glued to joists to form a box girder, can be made with satisfactory strength and stiffness.

For a wall height of 8 feet, 4 by 8-foot panels consisting of five studs 3/4 inch thick and 1 3/8 inches wide spaced approximately 12 inches apart with 1/4 inch 3-ply Douglas fir plywood covering on either side with face grain parallel to length of the panel and glued to the studs are amply strong.

Increasing the thickness of the wall by using wider studs increases the bending strength about as the section modulus is increased, or at a slightly faster rate than the stud width are increased; and the stiffness increases about as the moment of inertia is increased or in about the same ratio as the squares of the stud widths. Wall thicknesses greater than that provided by a 1 3/8-inch stud may be desirable to provide ample space for heating ducts, wiring, plumbing, and double-hung windows.

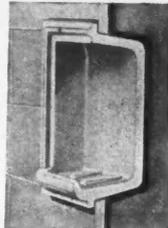
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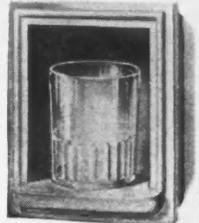


SOAP HOLDER

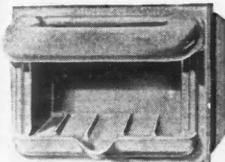
Just cut
a hole



Insert
the piece
with cement



TUMBLER HOLDER



SOAP and GRAB

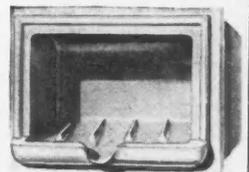
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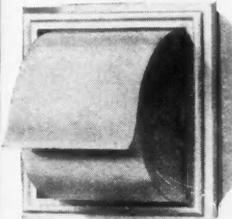
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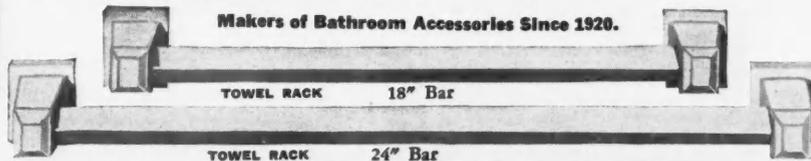
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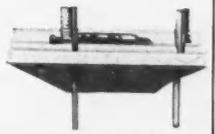
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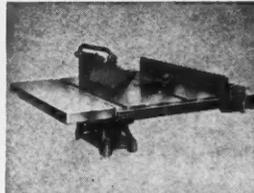
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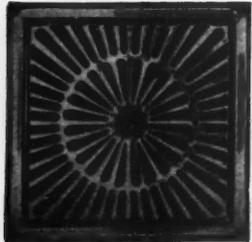


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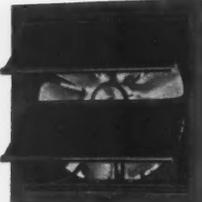
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Specifications Kelvin Houses

(Continued from page 61)

LATHING & PLASTERING—All walls and ceilings of first and second floors and ceiling of basement including the basement stairway to basement ceiling line are lathed with Rocklath with 3 lb. expanded metal lath in all corners and angles and at heads of doors, etc., and approved metal corner beads full height of all exposed corners and around plaster arches. Entire basement ceiling plastered with carpet float finish. Plaster living room, dining room, vestibule and hall with carpet float finish over approved hard walls, and balance with approved brand of patent hard-wall followed by a white putty finish troweled to a smooth surface.

TILE WORK—Walls of kitchen and bathroom tiled 4' 6" high. Bathroom floor to be tiled with 3"x3" tile; marble threshold at door. Bathroom and kitchen windows to have tile stools. Counter shelf and drainboard of kitchen sink to be of ceramic tile with raised colored tile rim and cove at back and ends.

ELECTRICAL—Wiring to be done in accordance with state and local codes, with panel board and switch and fuse cabinet in basement. Service to all switches, lights, plugs, etc., through covered neutral concentric cable assembly. Approved metal boxes for all outlets. Electric lighting fixtures to cost \$35.00. Special electric circuits and control equipment for air conditioning apparatus.

PLUMBING—Main water supply not less than 3/4" pipe. All risers 1/2" pipe. Cast iron pipe for stacks, vents, cleanouts, etc. 4" cast iron sewer pipe under footings. 3" deep-seal cast iron floor drain near laundry tubs in basement. Oil line 3/8" copper tubing under basement floor from oil tank to oil burner.

PLUMBING FIXTURES—24"x48" two-part Chicago Granite laundry tray; Kohler vitreous china washdown bowl with V.C. tank and birch mahogany seat and cover; Standard P-7021 flat rim sink; Case vitreous china water saver closet combination; Kohler 20"x24" white enameled lavatory or Brigsteel No. 709S lavatory; Kohler 5' white Metropolitan enameled recess tub or similar Brigsteel recess tub fitted with Republic combination bath and shower fixture.

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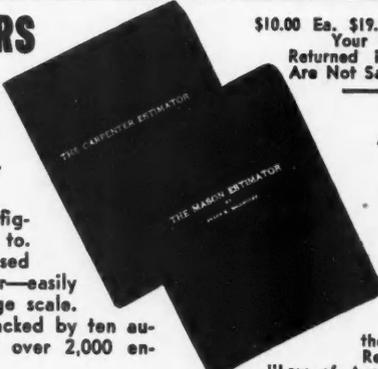
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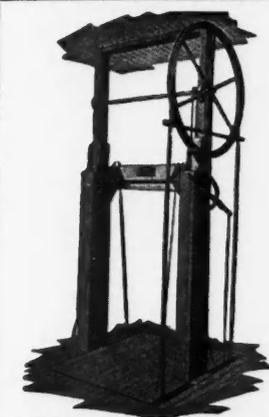
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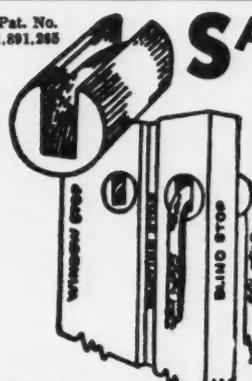
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487-A—The producers of birch, elm and ash have prepared a number of booklets which dealers are finding useful, containing, as they do, many good design ideas and much information regarding the use of these cabinet woods. "Beautiful Birch" describes, with colored illustrations, the correct use of this beautiful cabinet wood for interiors. "American Elm in Architecture" shows some distinctive interiors for homes, churches and other buildings. "Black Ash in Architecture" illustrates the use of this lumber.—NORTHERN HEMLOCK & HARDWOOD MANUFACTURERS ASSN., Oshkosh, Wis.

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488—Gluing Clamps—Information of interest to all mechanics, featuring the Black Bros. gluing clamps, bar clamps, miter clamps, hand screws, etc., presented in a new comprehensive catalog.—THE

BLACK BROS. CO., Inc., Mendota, Ill.
489—Levels and Transits—"How to Lay Out Building Lots Accurately" is a small booklet showing the correct and accurate method of laying out lots by using a modern builder's level.—DAVID WHITE CO., Inc., Milwaukee, Wis.

490—Builders' and Contractors' Convertible Level—Circular G presents illustrations and specifications of the builders' and contractors' fully equipped convertible levels.—GEIER & BLUHM, Inc., Troy, N.Y.

491—Reo Speed Wagons—A new line of catalogs covering the 1½, 2½ and 3 ton Reo trucks and speed wagons.—REO MOTOR CAR CO., Lansing, Mich.

492—Wagner Hardware—A new Catalog No. 34 covers door hangers and tracks, garage door hardware, Glideover overhead doors, electric power operators, and fire door hardware. It is a book of 132 pages, fully indexed.—WAGNER MANUFACTURING CO., Cedar Falls, Ia.

LIVE ITEMS

492-A—"Facts About Salubra" and "Salubra Is Different—Unique" are two of the interesting pieces of information regarding this "oil paint" in roll form. Many dealers are finding that this line works in well with their other products, helping them to establish a real decorative department at small expense.—FREDERICK BLANK & CO., Inc. New York Central Bldg., New York City.

492-B—The Tamms Silica Co., serving the building industry through hard material and lumber dealers, offers Colortone interior colored plaster, non-fading mortar colors, acid-free cement colors and Tam-cote washable kalsomine. Interesting folders, color cards and discounts available on all these products.—TAMMS SILICA CO., 228 N. LaSalle St., Chicago.

American Builder,
 105 W. Adams St.,
 Chicago, Ill.

(September, 1936)

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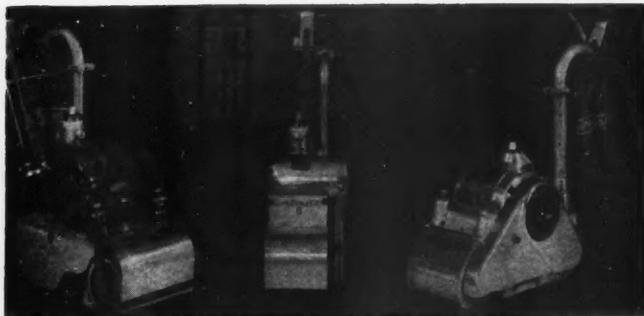
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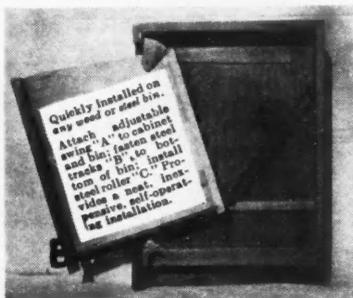
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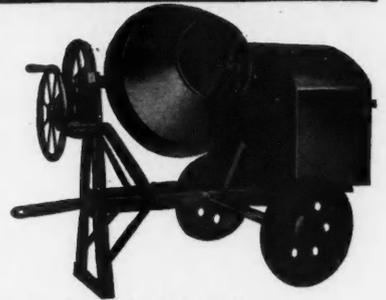
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