

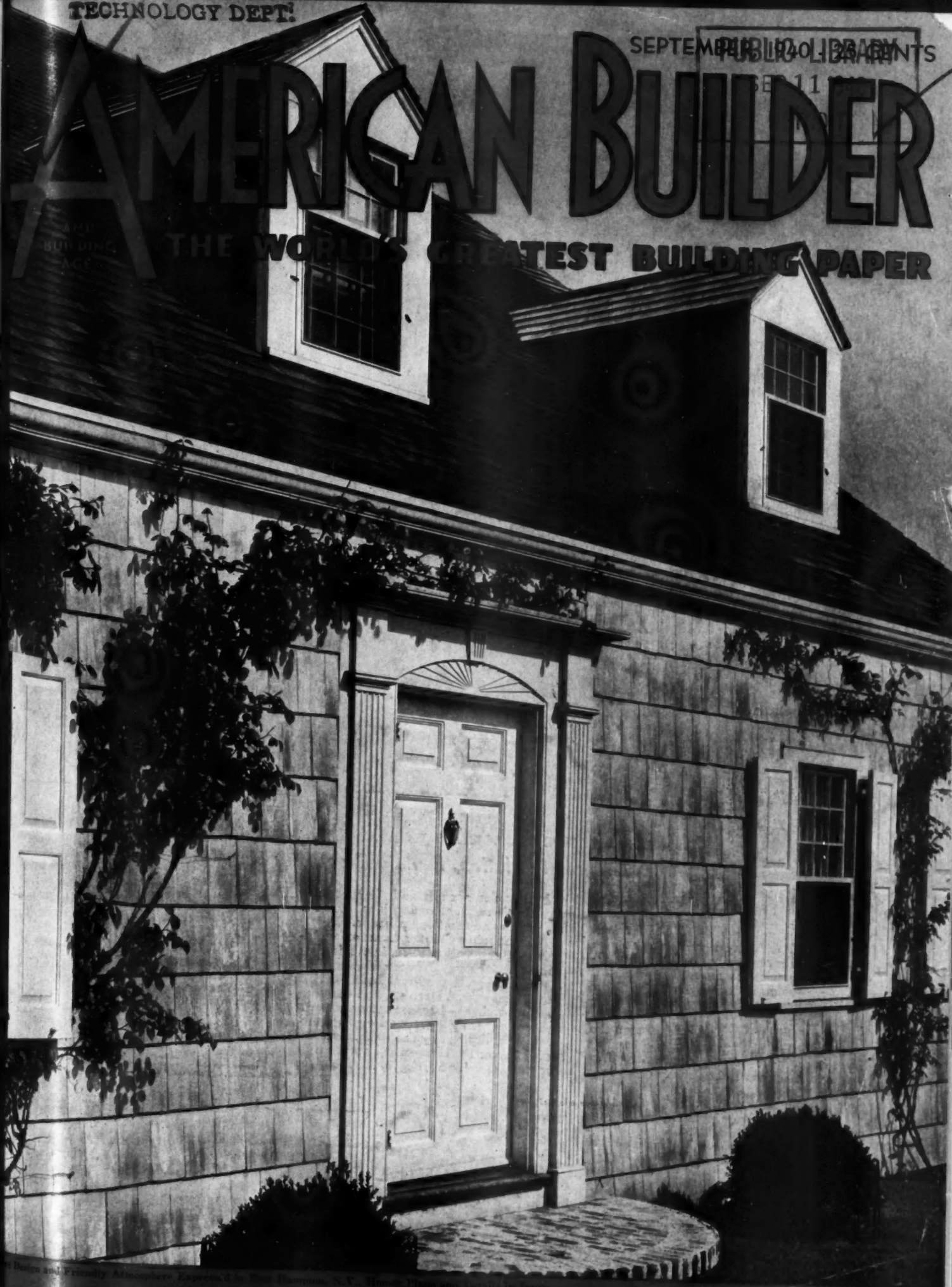
TECHNOLOGY DEPT.

SEPTEMBER 11, 1940

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AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER



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W. C. Tackett, Inc., Builders, Chicago Herman Bruns, Architect

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AMERICAN BUILDER

and Building Age

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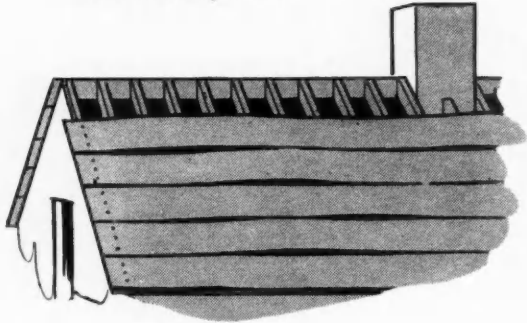
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You know what would happen to roofers nailed at ends only



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For better work . . . for increased customer satisfaction . . . figure your jobs with three butts to a door. It costs less to put the third butt on every door in the house than to repair a single warped door later! The Stanley Works, New Britain, Connecticut.



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PUBLISHER'S PAGE

Business Under the New Deal

EVERY intelligent American recognizes the danger in which this country is being placed by militarism abroad, and the consequent necessity of a vast program of arming ourselves. But too few realize what must be done to make it possible to spend billions annually for arming and keeping armed *without ruining ourselves*. We cannot arm adequately, improve or even maintain our standard of living, and avoid governmental bankruptcy and destructive inflation of our currency *unless business is good*—that is, unless production, construction and commerce are as large as it is practicable to make them.

The New Deal administration is asking for a third term in which to carry on our *defense* preparations. But this same New Deal administration has had seven and a half years in which to carry out its program for “reform and *recovery*.” How much recovery has there been under it, then—how good has business been under it, and how good is business now? How good, especially, has construction been under the New Deal, and how good is it now?

Let us consider construction first. In the accompanying table are given statistics showing *average annual* expenditures for *all* construction by four-year periods during the twenty years 1919-1938,

in the four New Deal years 1935-1938, inclusive, averaged only 4 billion 600 million annually, as compared with 8 billion 700 million annually in the twelve years 1919-1930, inclusive.

Construction has increased in 1939 and 1940, but not enough, as incomplete figures for these years show, to make the comparison more favorable to the New Deal years.

WHY has construction never anywhere near recovered under the New Deal? Because general business has never anywhere recovered—although to cause “recovery” was the principal avowed purpose of its policies. In the twelve years 1919-1930, inclusive, the country’s corporations as a whole paid an average of 2 billion 900 million dollars annually in taxes and had left an average of 5 billion 200 million annually in net income. In the four years 1934-1938, inclusive, under the New Deal, they paid 4 billion 200 million annually in taxes and had left less than 2 billion 900 million annually in net income.

These figures indicate what happened to business in general. But all private construction is done directly or indirectly from the net income of corporations and individuals. Therefore, you can’t fully

Average Annual Expenditures for Construction in the United States				
Period	Total Construction (000,000)	Public Construction (000,000)	Private Construction (000,000)	Residential Construction (000,000)
1919-1922.....	\$ 6,127	\$1,633	\$3,803	\$1,950
1923-1926.....	9,802	1,920	6,612	4,308
1927-1930.....	10,149	2,504	6,194	3,467
1931-1934.....	3,712	1,762	1,460	656
1935-1938.....	4,584	1,937	2,162	1,134

inclusive. *Public* construction, because of the large expenditures by the New Deal administration, was larger in the period 1935-1938, inclusive, than in any preceding period excepting 1927-1930. But *total private* construction under the New Deal in the 1935-1938 period averaged the *smallest* annually in any equal period in the twenty years excepting the extreme depression period 1931-1934—was, in fact, only two-thirds as large annually as in 1919-1922, and *only one-third as large annually as in the eight years 1923-1930, inclusive*. Substantially the same statements may be made of residential construction, which usually is the major part of private construction. Result: *Total construction*—including governmental—

revive private construction without reviving the net income of corporations and individuals. New Deal policies have prevented this revival of private net income both by *restricting* the volume of business in general and *increasing* taxes on business. And they have thus prevented full recovery of construction.

Do you believe that those who have *prevented* recovery for seven and a half years—including recovery of construction—are likely to prove best qualified both to (1) *cause* recovery and (2) provide most economically and efficiently for national defense in future?

Samuel O. Drury

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DEPENDABLE 'INCOR' high early strength cuts concreting costs through reduced form, time and overhead costs. With 'Incor' you place concrete today, strip tomorrow. And because 'Incor' cures thoroughly in a fraction of the usual time, it helps assure strong, dense, watertight concrete. 13-year performance record, exclusive with 'Incor', proves long-time durability of this FIRST high early strength Portland cement. Quality pays... insist on 'Incor'.

'INCOR' GAVE US 100% SATISFACTION"

—SAYS CONTRACTOR'S REPORT

"I TAKE real pleasure in advising that 'Incor' 24-Hour Cement gave us 100% satisfaction and perfect watertight construction." So reads a letter from Boyd Kline, Bloomsburg, Pa., General Contractor for the recently completed filtration plant at Danville, Pa., State Hospital. 'Incor', used in filtration tanks, helped assure watertightness. Charles F. Mebus, Glenside, Pa., was engineer for Pennsylvania General State Authority, owners.

Watertight concrete is simply a matter of quality cement and quality workmanship—right amount of water per sack of cement, proper proportions, thorough mixing, placing without separation, and *keeping the concrete wet until thoroughly cured.*

Other things being equal, the more thorough the curing, the better the concrete. That is why 'Incor' 24-Hour Cement is a big help in producing watertight work; because 'Incor' cures thoroughly in one-fifth the usual time.

If the time-saving and added certainty of thorough curing in 24 to 48 hours offset the slight extra cost of 'Incor',* that is the cement to use; otherwise, use Lone Star. You gain either way, because better cement makes better concrete. Write for copy of "Watertight Concrete." Lone Star Cement Corporation, Room 2231, 342 Madison Avenue, New York.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION
MAKERS OF LONE STAR CEMENT . . . 'INCOR' 24-HOUR CEMENT

AMERICAN BUILDER

AND BUILDING AGE

The Desire for SECURITY

A Fundamental Reason for Increased Home Ownership

AMERICAN BUILDER'S slogan, "Build Now for Security" is based on the fundamental fact that the desire for security is one of the most powerful forces making for home ownership in this country today.

This age-old quest of a man for security for himself and his family has often been reflected in the phrase, "a man's home is his castle." But today this same fundamental need and desire of the average man has been given new point by revolutions abroad and changes at home; by war abroad and the fear of war at home, and by fear and uncertainty of the future. There is the strongest evidence that the present large increase in residential building in this country is a direct result of this feeling. Every time a new "blitzkrieg" is launched, thousands of additional American families turn to thoughts of home ownership.

Americans are coming to realize that no matter what happens, a home of your own is one of the best safeguards against an uncertain future—especially if that home is large enough to include a plot of "good earth" for a garden. Hardly any form of investment can be found in which such security is possible. Stocks and bonds, are, after all, only pieces of paper, but a home is a useful, livable, life-supporting investment that is good under any form of social order or political condition. The most fortunate people in France today are the individual owners of small homes and farms who, while everything else has crashed unbelievably about them, still have a place of their own which will see them through the difficult times ahead.

It has become the big job of the men of the building industry today to guide and direct prospective home

Build Now for Security—10 Answers to Questions of Prospective Buyers Who Hesitate

1. QUESTION—Suppose we get into a war?

ANSWER—Your family will still need a safe, secure place to live. War would probably mean higher living and rental costs, which a home of your own would offset.

2. QUESTION—What if I am drafted?

ANSWER—Congress is considering a plan to prevent foreclosure of mortgages or loss of life insurance policies by men in the service. It is doubtful that the government would stand by and see its soldiers and sailors have their homes taken from them.

3. QUESTION—Am I likely to be drafted?

ANSWER—Men with families and responsible positions—the kind who usually buy homes—would be among the last to be called.

4. QUESTION—Is it a SAFE investment?

ANSWER—There is no other place you can put your money today where it will be of SURE value to you in the years ahead. Particularly for the man of small means, it offers the greatest security of any investment.

5. QUESTION—What about inflation?

ANSWER—You have a fixed, long-term mortgage with a fixed monthly payment in terms of dollars of present value. In case of inflation or sharp rise in general living costs you are on the winning side. Your mortgage is paid off in "cheap" money.

6. QUESTION—Are higher rents probable?

ANSWER—They are very probable. But if you buy a home under the FHA or Savings and Loan plan you can pay for it at a fixed monthly amount which is less than your

present rent. You ANCHOR your living costs and protect yourself against future increases.

7. QUESTION—Won't a house be expensive?

ANSWER—You can pay for it at a total monthly cost less than your present rent. At the same time you will be SAVING the amount applied on the principal so that in a few years you own the home free and clear.

8. QUESTION—Won't the government soon GIVE me a home?

ANSWER—We don't believe the government can provide subsidized housing for everyone. Besides, if you move into a government subsidized slum clearance or housing project, it won't be YOUR home. You'll be just another regimented and closely supervised rent payer, with the government as landlord. If you value independence and traditional American individualism, you'll want to live in a home of your own.

9. QUESTION—Aren't home ownership costs prohibitive?

ANSWER—No. You get more house for the money today and LOWER home ownership costs than ever in history. Interest rates are the lowest ever known and financing terms the most favorable.

10. QUESTION—When is the best time to build?

ANSWER—Now is the best time. Building costs and interest rates may rise under the effect of the huge national defense program. The sooner you buy a house and start making regular monthly payments like rent, the sooner you will have it paid for. Besides, you will be protecting yourself against a lowering of your standard of living due to increased rental and living costs.

Watch for American Builder's Security Issue in October—"Build Now for Security—Fortify Your Future Through Home Ownership."

buyers along sound lines. They fear high taxes, changes in the economic and political systems, uncertainties of employment. They want to put their savings in a safe form of investment, yet no one can tell them what form that investment shall take. They fear high rents ahead and already see definite indications of an increase in their living costs.

All of these fears and uncertainties can properly be turned into sound and sincere arguments for building a home now. "Build Now for Security" is a slogan that can be put to work by the men of the building industry as one of the most powerful aids to home building and buying they have ever had. The response to this slogan and to the ideas expressed in the last month's editorial in *American Builder* has clearly shown that it is one that will take hold everywhere. In order to help its readers carry this message to prospective buyers this publication will devote a large part of the October issue to a complete and detailed presentation of the arguments for home ownership now. This special "Build Now for Security" issue of *American Builder* will be a sales manual for the men of the building industry to use in promoting home ownership. Readers who have been effectively using the "Build Now for Security" theme in their communities are urged to contribute to this issue by telling how they have carried on their program.

No Present Need Justifies "Government Housing" for Defense Workers.

A BARRAGE of newspaper stories containing such misleading statements as "*National defense program in danger of bogging down because of housing shortage*" has called attention to the fact that the U. S. Housing Authority is engaged in a high-pressure drive to get more money to perpetuate itself.

Using taxpayers' funds, USHA is putting on a propaganda drive to extract *more* of the taxpayers' funds. Recent publicity releases have particularly aroused the indignation of building industry men because of the fashion in which national defense is brazenly misused as an excuse for the further extension of this Bureau's activities. Such publicity is only one of the devices being employed by USHA to get vast additional sums to permit the building of additional subsidized government housing.

There is no excuse for any government agency to build houses in competition with private enterprise while the private building industry has the capacity, the ability and the desire to do this work. There is little foundation for the exaggerated reports circulating on "alarming" housing shortages. Where shortages do exist, a little intelligent organizing of local business and building interests can quickly take care of the need through the regular channels of private business enterprise.

If rental housing is needed in certain areas, such housing can be much more efficiently and economically provided by private enterprise under the Federal Housing Administration rental housing plan, and it is suggested

that FHA be called in to encourage such rental housing in any areas that appear to need it. Private investors and private building firms are more than anxious to do such building and need only the encouragement of FHA to do it.

The ridiculous feature of the whole USHA propaganda drive is that this organization which has so long been the ardent champion of the under-privileged and the slum dweller now suddenly develops the keenest interest in industrial workers engaged in national defense work. These industrial workers are men employed at good wages and are certainly not the type of low-income person USHA was set up to serve. Industrial workers with good jobs do not need to be housed in government built and publicly owned housing projects. They can and should pay their way just as other citizens do. This does not mean that vigorous action should not be taken to provide homes for such workers or any other American citizens where a shortage exists; but such homes can and should be built and financed by private enterprise.

The home building industry today is showing a vigorous improvement and it would be most unwise for any action to be taken that would kill off private enterprise and investment in this field. An expanding private building industry will contribute greatly to national income and will help pay the mounting costs of national defense. If USHA is allowed to have its way and come into communities where private builders are already functioning successfully, they will upset the market and scare off buyers, who obviously will hold off buying a home until they see whether they may not get one a lot cheaper from "the gov'ment."

American Builder urges its readers to take steps in their local communities to check up on the wild and exaggerated claims that are being made of a "critical" housing shortage and then take action to prevent a government agency which they are helping to support from spreading such false and misleading information.

Publicity release No. 497 of USHA for example, dated July 9, makes the following statements: "A warning of possible danger that the entire defense program will bog down because of delays and inefficiency in filling defense orders unless housing accommodations are built immediately for thousands of workers in key industrial cities was sounded today — — —"

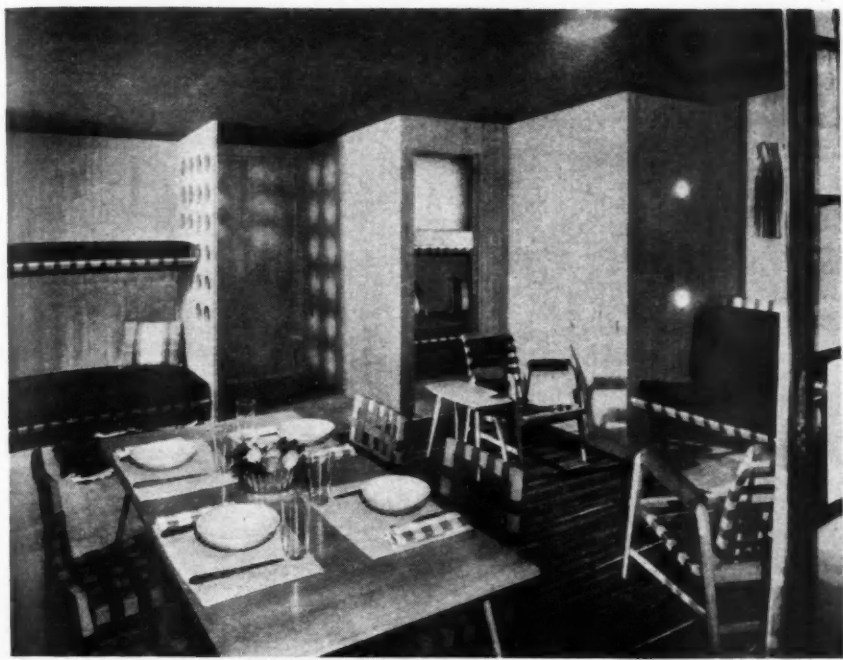
"Workers brought in for jobs in defense industries are being forced to leave because they cannot find places to live.

"Workers are occupying beds in two and three shifts. Buildings unfit for use are being opened for thousands to the rush of families being employed in defense industries."

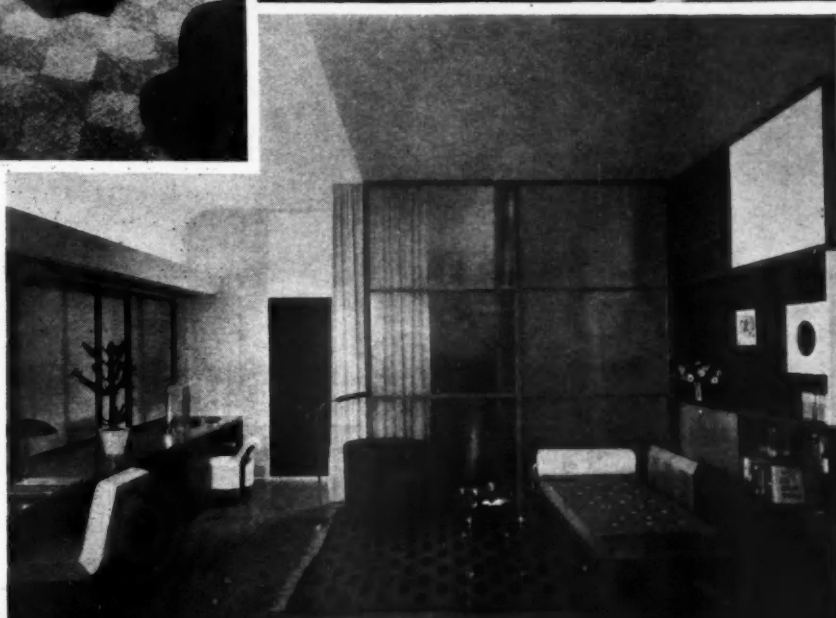
American Builder readers who do not believe that such statements as these are an honest statement of housing conditions and who object to having the U. S. Housing Authority take over their business of supplying homes under the private enterprise system should say so. This publication will transmit any comments to the proper authorities and will publish a limited number, if sent in promptly.

Interiors Designed for Modern Living

Rooms from the "America at Home" Exhibit, 1940 New York World's Fair



THE four interiors shown on this page were selected from the sixteen rooms comprising the World's Fair exhibit, "America at Home"—each the work of an outstanding designer. Plywood, plastics, glass, metal and fabrics, many of them in recently developed forms, have been used here to create a display which has attracted a multitude of visitors. It should be interesting to those in the home building industry since many of the people who saw the features of this exhibit will undoubtedly want some of them built into homes which they may be buying or building in the next few years. The rooms present designs for a number of types of dwellings and for practically every section of the country.



TOP: The "Sportshack," a prefabricated week-end house, with sleeping accommodations for six, designed by Donald Deskey. Center left, well lighted California living-dining room done by Harris and Anderson has walls of natural California redwood. Center right, bachelor library by Hare and Manzer features Flexwood walls. Bottom, "Parents' Retreat" by William Muschenheim is a many-purpose room for relaxation.



MORE THAN 15,000 visitors from nearby industrial areas inspected this Chicopee house on opening day. Many were defense workers.

Defense Workers Rush to BUY Security Homes at \$22 per Month



GEORGE MAC DOWELL and H. D. Fiedler at Highland Park.

By Joseph B. Mason

Chicopee, Mass., builder SELLS low cost concrete masonry homes to machine tool workers then paying \$35 to \$45 rent.

WHILE the U. S. Housing Authority is openly propagandizing to get additional funds to build subsidized "defense housing," private builders are actively engaged in constructing sound, well-built, low-cost homes easily within reach of the income of industrial workers.

And while the advocates of subsidized government housing continue their activities which tend to *destroy* traditional American home ownership, private builders everywhere are finding a great surge of interest by the public in home ownership and the security that it brings.

"Build Now for Security," the slogan *American Builder* has set forth for the building industry, is taking hold.

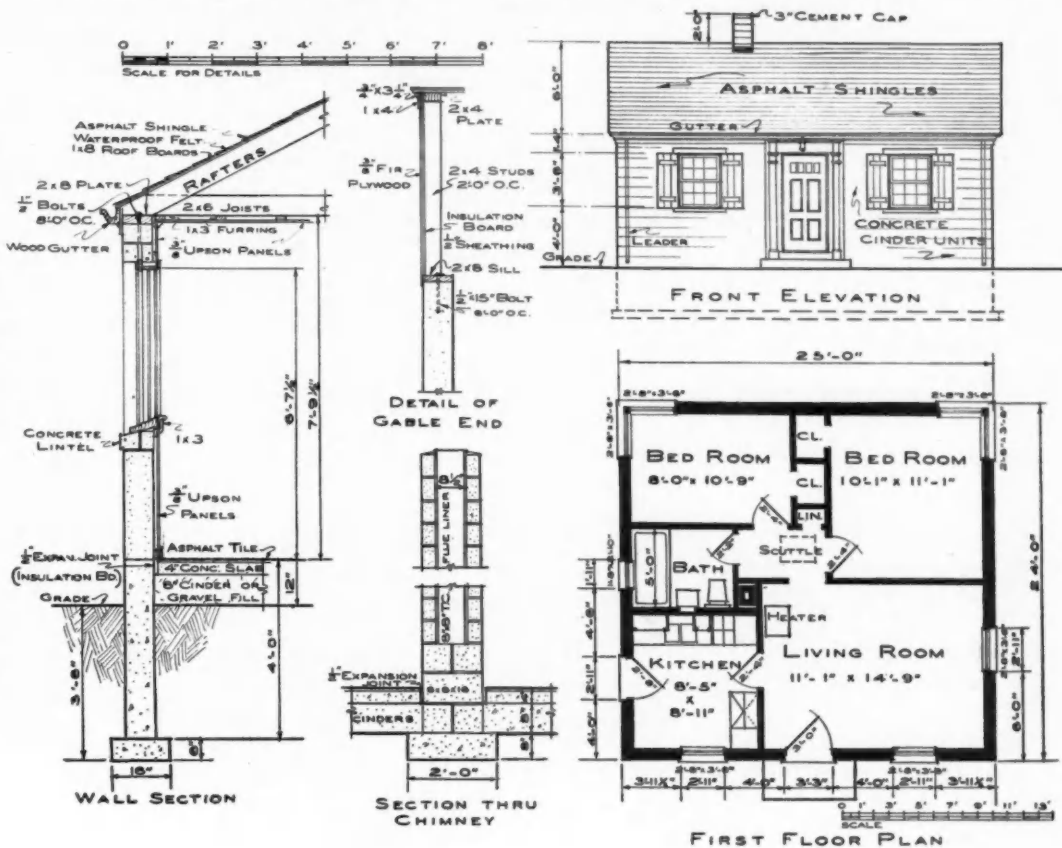
For example, in Chicopee, Mass., near the large industrial and defense industries of Springfield, one builder is conclusively proving that solidly built, well-planned small homes can be built and easily SOLD to employees of such plants. Four of his first group of 10 houses were bought by machine tool workers who had been paying \$35 to \$45 a month rent. In Highland Park, the new residential community in Chicopee, these workers are able to buy five-room solid masonry homes, under the 25-year FHA plan, at a total monthly carrying cost of from \$22 to \$29.

But let us allow H. D. Fiedler, architect, builder and developer of this interesting home project, to tell the story:

"These young married folks can't go wrong on such a proposition," he says. "Most of them are young—around 30—have good jobs and the prospect of permanent employment. Instead of paying \$35, \$40 or even

DETAILED PLANS
by architect-builder Fiedler show concrete slab with expansion joint, concrete masonry wall units and interior wall surface of giant-size building board attached to furring strips with "floating" fasteners.

COMPACT PLAN is only 25' x 24' with 11' 1" x 14' 9" living room. Concrete floor is covered with asphalt tile.



\$45 a month rental, they live in a new, attractive home of their own at from \$22 to \$29 a month total cost, depending on the model they select.

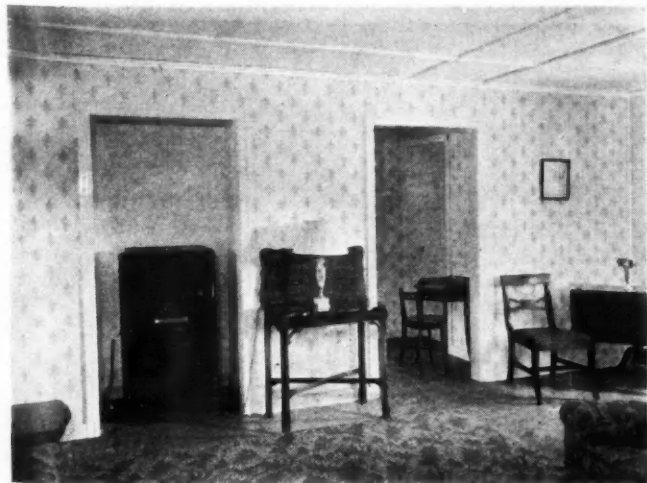
"They are actually paying for their home out of rent. They have security, they are saving money and they have a fine place for their children to grow up in."

Fiedler got into the building business by way of the architectural route. He was an industrial architect and he believed that he could bring industrial planning and construction methods to the small home field. Highland Park community is a pleasant wooded spot with 60-foot plots where he plans to build 95 houses. Ten had already been completed on August 1st, eleven were under

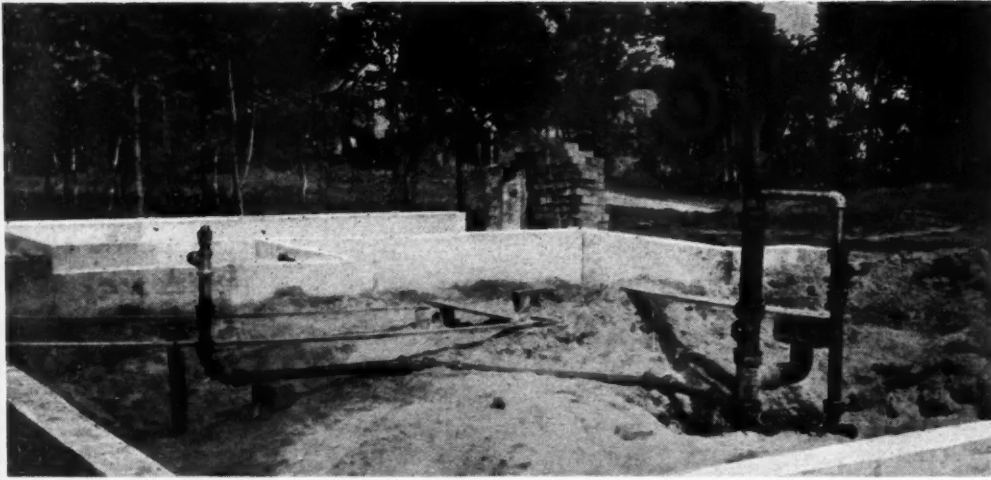
construction and a new group of fifteen was in the planning stage. Fiedler's architectural engineering background has resulted in the use of many new construction methods in an attempt to produce a better house at a lower price. He says his houses are all "built on the drafting board" first.

Fiedler has gone contrary to New England tradition by building no-basement houses. He uses a 4-inch reinforced concrete slab with a finish floor of Armstrong asphalt tile. Foundations are carried 4 feet below grade line and the slab rests on 8 inches of cinder or washed gravel fill above the grade line.

Under this system the plumbing mechanics are among

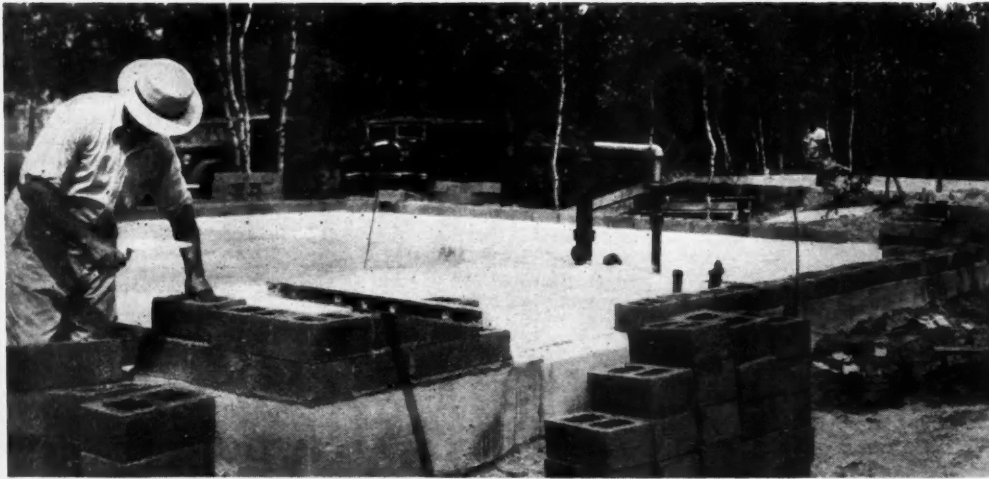


LIVING ROOM AND KITCHEN views show attractive interiors of Chicopee homes finished with giant wall panels and special mouldings. Dry wall construction, concrete floors with asphalt tile surface and low-cost equipment bring price within reach of defense workers.

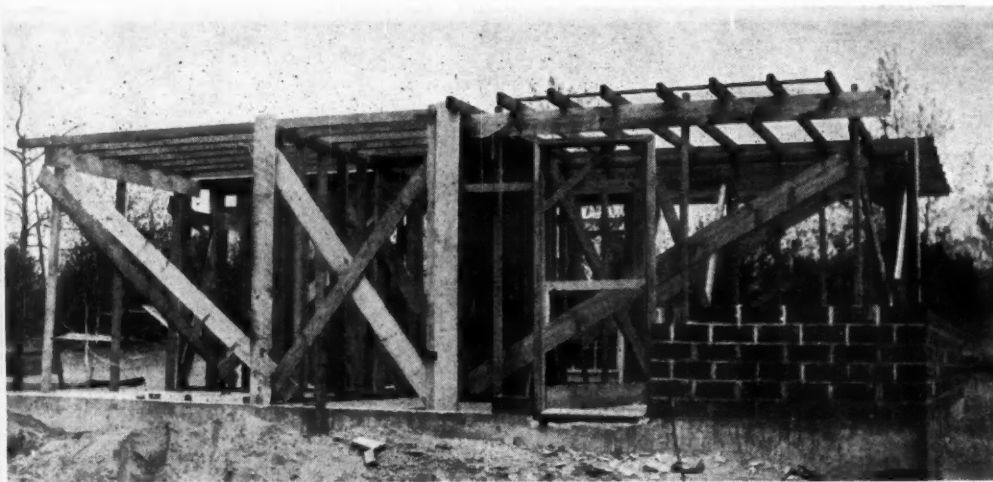


METHODS THAT

STEP 1—Plumbing lines are installed before concrete floor slab is laid. This means that the plumber is one of first mechanics on job. Standardized plumbing layout as shown is inexpensive, quickly and easily installed.



STEP 2—Permanent, smooth and crack-free concrete slab is laid over washed gravel fill. The 8" x 5" x 12" hollow concrete cinder tile walls are rapidly erected. Precast concrete sills are used.



STEP 3—Interior framing is erected entirely independent of exterior masonry walls. In this house the interior framing was completed BEFORE the exterior walls, but usually the two go forward simultaneously, permitting both crews to operate full speed.

the first on the job, since they do the complete job before the slab is laid. Fiedler uses a high quality transit-mix concrete supplied by the Construction Service Corp. of Springfield. This produces a permanent, smooth and crack-free floor that is dry, warm and entirely satisfactory to the New England climate, it is claimed.

Exterior walls of the Chicopee houses are of hollow concrete cinder tile, 8" x 12" x 5" in size. These are furred on the inside and given 2 coats of Bondex waterproof cement paint in attractive colors on the outside. Colors were selected with much care to give a harmonious and pleasing effect, and the colors were also selected to harmonize with the Barber Genasco colored asphalt shingles.

Under Fiedler's construction program the masonry crew of two mechanics and one helper starts work on the exterior walls at the same time that the carpentry crew of two mechanics and two helpers starts on the interior framing. Frequently they come out together, and on the average job the house is completely enclosed in four days.

A power saw contributes to the speed of the carpentry crew and a large part of the framing, consisting of Weyerhaeuser 4-Square lumber, is delivered to the job cut to exact length.

On rainy days the carpenters are busy in a small shop with the power saw cutting special pieces and building many of the simpler items of millwork and trim. The

REDUCE COSTS

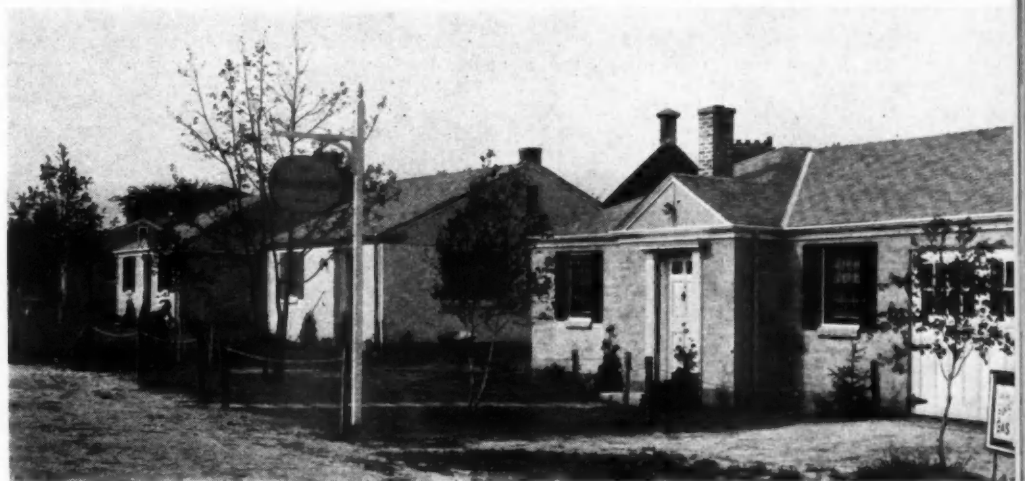
STEP 4—Four days are all that are required to enclose house. Mason crew consists of two mechanics and one helper; carpentry crew, two mechanics and two helpers. Exterior walls are given two coats of waterproof cement paint in attractive colors.



STEP 5—Giant-size $\frac{3}{8}$ " panels that cover a whole wall without joints are used for interior finish. Two men easily move 8' x 14' panels through ordinary door by using special clamps to hold them in curved position as shown here.



STEP 6—Street of low-cost houses in Highland Park completed in record time, yet built to give permanent satisfaction and long life to industrial and office workers who can afford to pay from \$22 to \$29 a month complete carrying charges. Houses are erected in groups of 10, following standardized plans in which all details were thoroughly worked out on paper in advance.



window sills are of precast concrete. Another time-saving item is the use of window frames with exterior trim attached and primed and completely glazed, weather-stripped, ready to install.

Uses Dry-Wall Construction

One of the highly important items of economy in Fiedler's construction program is the use of giant-size $\frac{3}{8}$ -inch Upson Strong-Bilt panels. These are attached to the furring by "floating" fasteners which eliminate surface nailing. The wall surfaces are then painted or wallpapered in light and cheerful modern colors.

(Continued to page 100)

Does the GOVERNMENT have to build "defense housing?"

AMERICAN BUILDER believes there are hundreds of private builders, such as described in this article, who are far better fitted to build homes for defense workers than is the USHA. Builders who have successfully completed low-cost homes or who have ideas on how to combat further encroachment by government competition are urged to write the Editor, AMERICAN BUILDER, 105 W. Adams St., Chicago.



WEBER BROTHERS of Buffalo are building a full street of houses that can be owned for "less than rent." Insulating sheathing is used.

"\$36 a Month – No More Rent Increases"

IN Buffalo Weber Brothers are having good success with a compact five-room two-story home that attracts rent payers who can afford to spend \$36 a month or more. The Weber salesmen say, "It's cheaper to own than rent," and they might add the important fact that a buyer of one of these houses has protected himself against rent increases for the next 25 years.

The Weber boys make a fine building team, with

brother Neal doing the architectural work, George the construction and Frank the sales. Their father and their grandfather were builders, and the sons have been in the business for 11 years, usually doing 8 or 10 houses a year. At present their program is much increased, and this year they have built and sold 14 houses in their Cleveland Circle development in three months.

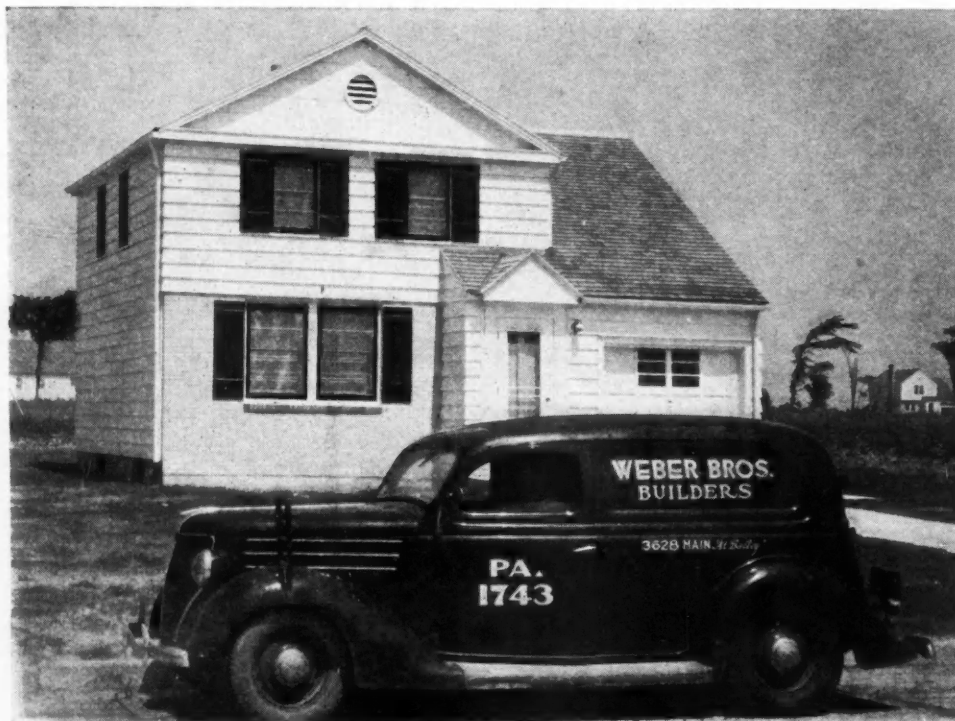
They use a basic plan, detailed herewith, with minor

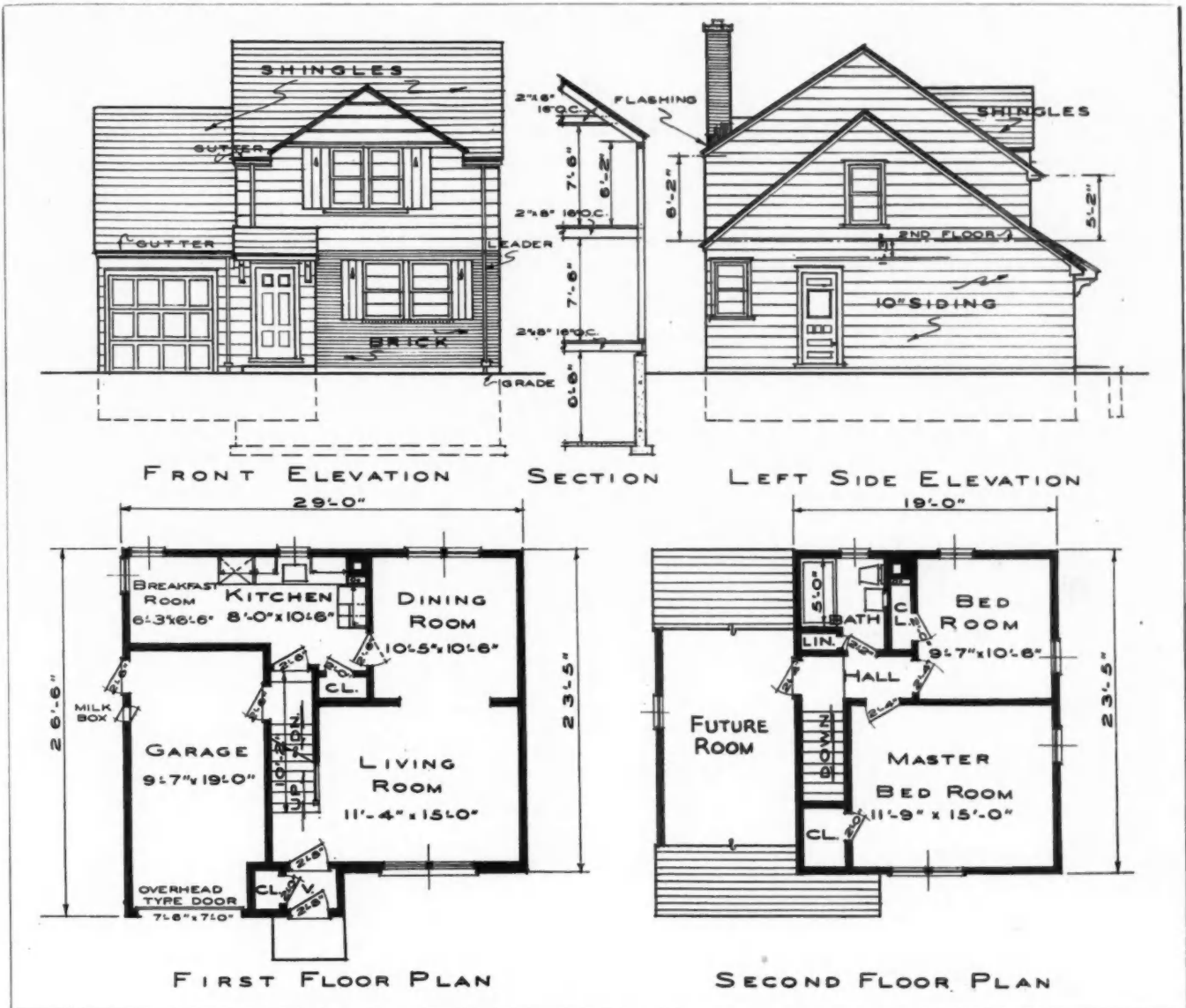
variations, which is unusually economical. The basement size is only 19' x 23'-5". By dropping the garage floor and ceiling slightly they are able to provide space for a third bedroom. This is left unfinished. Most of the Weber houses sell for under \$5,000, and a typical financial setup as given to their buyers is as follows:

Down Payment.....	\$525.00
Taxes.....	9.33
Fire Insurance60
Interest Payments..	11.30
Principal Payments	14.33

Total Monthly
Carrying Costs....\$ 35.56
This low monthly cost

ONE of the Weber Brothers' houses and their runabout truck extensively used in the conduct of the job. This house is one of a number of exterior variations of the 29' x 26' 6" plan opposite.





ECONOMICAL Weber Brothers' plan with basement size only 19' x 23' 5". Space for future third bedroom over garage.

makes it possible for office and industrial workers from Buffalo to buy one of the Weber houses at considerably less than they are now paying for rent. This is the outstanding reason, Weber Brothers say, why they can sell as many houses as they can organize efficiently to build.

"Besides," declared Neal, "we're giving a whale of a lot more value than buyers used to get. These houses are better than the \$8,500 house of those days—they're insulated, have automatic gas heat, are cross-braced and expertly framed, have substantial foundations and are equipped with the very latest in kitchen, plumbing and wiring."

Exterior walls are of Celotex Vapor-Seal sheathing, guaranteed for the life of the building. Equipment featured includes W. A. Case & Son plumbing fixtures, Armstrong Furnace Co. winter air conditioning, Huck-Gerhardt "Wel-Bilt" garage doors.



ONE OF 14 Weber Brothers' houses built and sold in three months, all of which use basic plan above with minor exterior variations. House has two bedrooms and space for an extra room over garage which can be finished later by owner.



EAST elevation of Evanston, Ill., row house: Architect Kegley's home is one at the left; three other units face on this street.

Six-Unit Row House for Triangular Site

A MOST economical use of a triangular plot in a residential area of Evanston, Ill., was undertaken with the planning and building of this group of six row houses. A new zoning ordinance in that city last year provided less space for three-story apartments and more for two-story row houses, so it is to be expected that more of these structures will be built in this Chicago suburb.

F. T. Kegley and L. B. Walton, formerly of the Benjamin H. Marshall Company, designed this row of houses, all six being of Georgian design and one at the left owned by Architect Kegley being a copy of an old Philadelphia house. Each of the six has a large recreation room, two of them equipped with wood-burning fireplaces; four of the houses have first floor fireplaces.

Garages have been cleverly worked into the row to give an interesting exterior from the street. Those facing the rear share a common courtyard of triangular shape. The units were built for sale and each was financed by a 20-year FHA insured mortgage.

Construction, materials and equipment for this six-unit row project are as follows:

Foundations: 12" concrete walls.

Basements: Floors 4" concrete, waterproofed, laid on 6" cinder bed. Tile drainage under all basement floors. Back water traps on all sewer lines.

First Floor Construction: Precast reinforced concrete joists with reinforced concrete slabs; structural steel beams fireproofed with concrete.

Exterior Windows: Andersen patented prefabricated window frames and sash with built-in weatherstripping. Framing lumber selected grades and kiln-dried.

Garage Doors: Stanley upward-acting type.

Roofing: Rough textured Vermont slate $\frac{3}{8}$ " thick, purple-green mixture.

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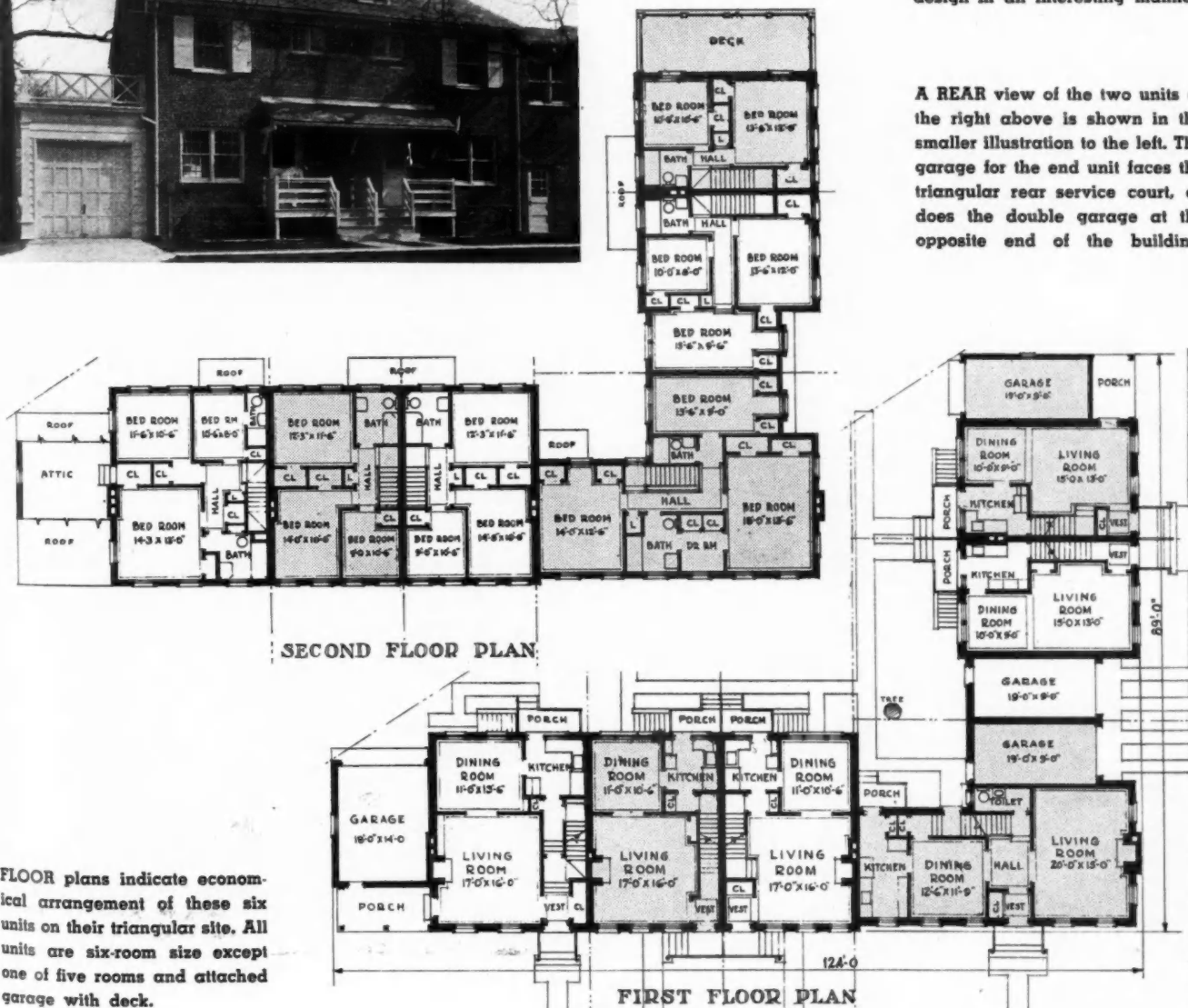
THE dignified entrance of Architect Kegley's home in row house group is a copy of one in a 200-year-old Georgian house in Philadelphia. Each entrance in the project is individually styled.



ABOVE: North elevation of Evanston row house; the two garages between the four units on the left and two to the right break up the design in an interesting manner.



A REAR view of the two units at the right above is shown in the smaller illustration to the left. The garage for the end unit faces the triangular rear service court, as does the double garage at the opposite end of the building.

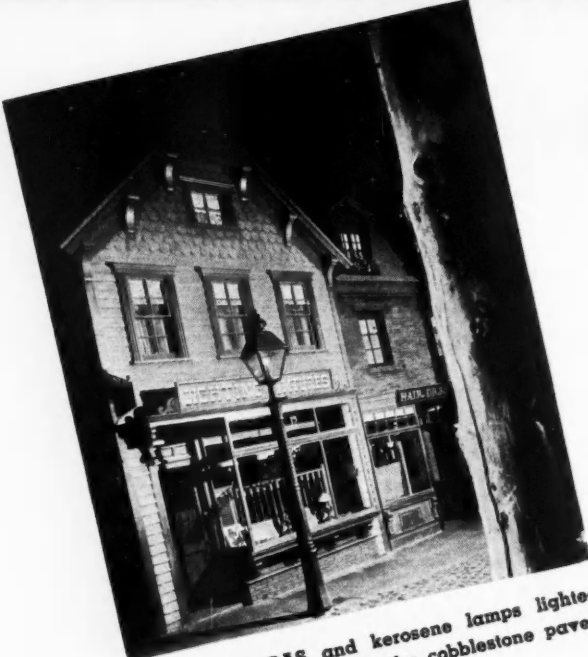


FLOOR plans indicate economical arrangement of these six units on their triangular site. All units are six-room size except one of five rooms and attached garage with deck.

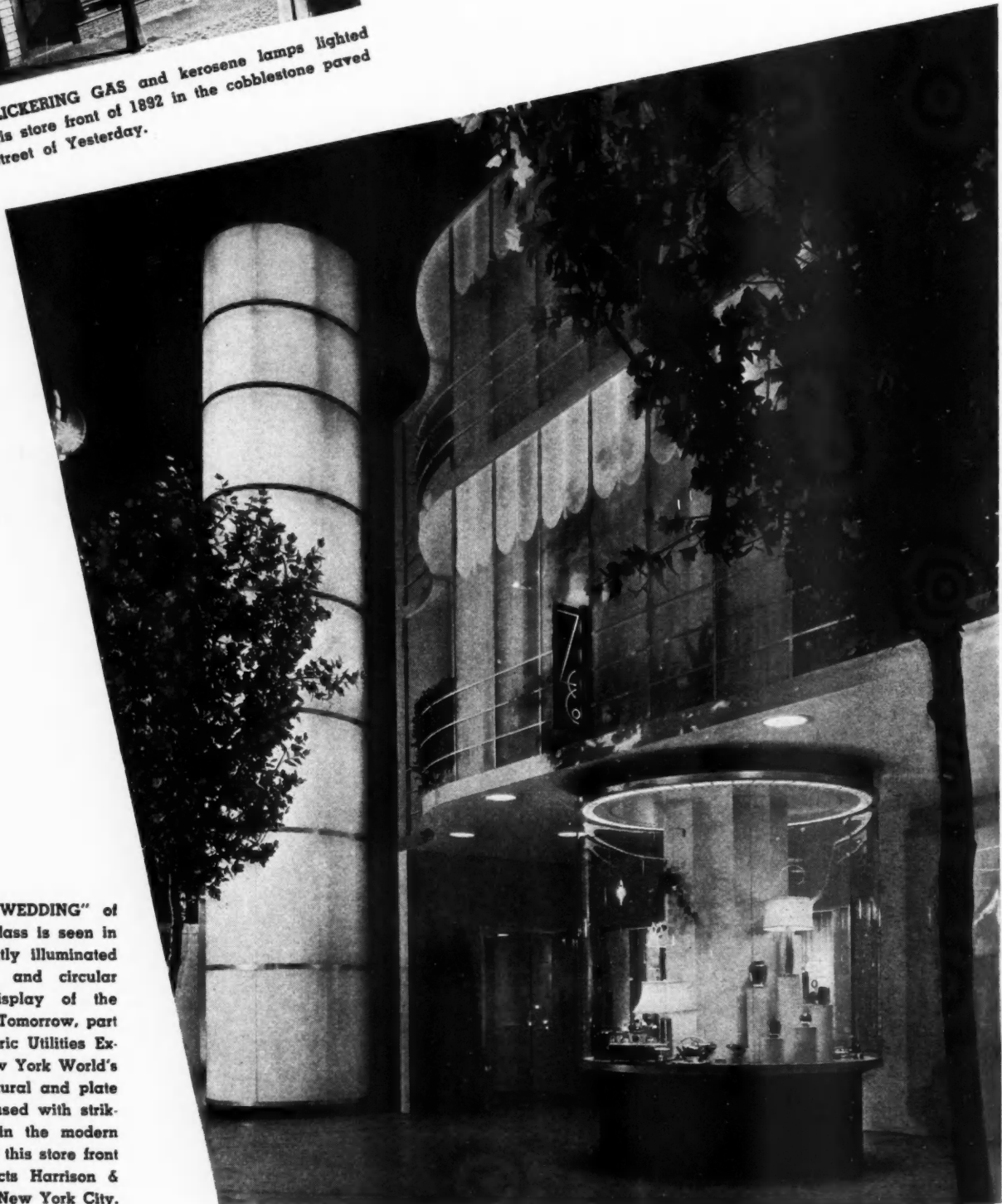
From Wooden Indians to

BUILDERS who visited New York's World's Fair found one of the most striking shows in the Electric Utilities Exhibit, where two full-size city streets were built to contrast life as it was in 1892 compared with the well-illuminated electrified life of today.

In the Street of Yesterday, dingy gas and kerosene poorly illuminated the quaint store fronts and cobblestone streets. This "gay nineties" street of fifty years ago looked anything but gay. Even the wooden Indian in



FLICKERING GAS and kerosene lamps lighted this store front of 1892 in the cobblestone paved Street of Yesterday.



"PERFECT WEDDING" of light and glass is seen in this brilliantly illuminated store front and circular window display of the Avenue of Tomorrow, part of the Electric Utilities Exhibit at New York World's Fair. Structural and plate glass are used with striking effect in the modern detailing of this store front by Architects Harrison & Foulhoux, New York City.

Electricity and Glass

front of the Abercrombie & Fitch saddle store looked grim.

Then, as if by magic, visitors were transported to the brilliant and spacious Avenue of Tomorrow, designed by modernist architects Harrison & Fouilhoux. The street is built to full size and includes typical stores of today, featuring fashions, perfumes, electrical equipment and a beauty salon. The revolution that has been brought about in retail merchandising and window dis-



HORSE COLLAR and wooden Indian were part of the retail showmanship employed by the owners of these shops of 50 years ago.



SMALL SHOP, above, has interesting curved bays with upper portions of ivory-colored structural glass and frosted glass. Metal trim is well handled.

MEN'S STORE, at right, in the Avenue of Tomorrow uses deep-toned red structural glass with sweeping curve leading into modern doors at right. Perfect illumination dramatizes the merchant's products and carries on his selling through the night.



Photos by Robert Damora



MODERN APARTMENT with first-floor store, as designed by Harrison and Foullhoux, for the Avenue of Tomorrow. Narrow balconies with simple metal railings provide a striking touch. Walls are of frosted glass.

UNBREAKABLE glass marquee is featured in this store front designed for women's fashions. It strikingly illustrates the possibilities for retail showmanship through clever use of electricity and glass.



Photos by Robert Damora

plays by use of electricity and modern materials is dramatically shown.

Store fronts in the Avenue of Tomorrow are built of glass and metal, achieving a "perfect wedding" of glass and light. The products used in building these modern fronts consist mostly of Pittsburgh plate glass, Carrara structural glass and glass blocks. Pittco metal trim and decorative metals of copper, brass and bronze are used.

Particularly interesting in the design and construction of these modern fronts are the light and cheerful colors, the curved and circular bays and the use of transparent and frosted glass in addition to the structural glass. All windows have the most modern illuminating and lighting equipment, to enable merchants to show their products to the best advantage.

Managing Director Clayton Irwin of the Electric Utilities Exhibit has done a splendid job in dramatizing the important part light and glass and modern design can perform in selling merchandise. Architects and builders whose job it is to persuade their local merchants to modernize or rebuild their store fronts will find their work easier as a result of it.



ABOVE: House with roof blown off and end sucked out by tornado; (right) house blown from foundation and dropped in street.

How to Anchor Against Storm Damage

By J. A. Newlin*

THE requirements as to anchorage of buildings are generally based on the overturning action of the specified wind pressures. The requirements for tying of building parts together are usually arbitrary or indefinite, and give no basis for intelligent design.

It must be recognized that only general statements can be made as to the nature and extent of the damage which any particular wind storm will produce, as the wind may be relatively uniform in intensity over large areas and steady both as to velocity and direction, or may be gusty and erratic as to direction and vary greatly in pressure within short distances. When these phenomena are combined with fast and slow barometric pressure changes and the influence of the direction of the wind, the lay of the land and of surrounding objects, and the size and shape of the building, as well as its intrinsic weight and strength, one can appreciate to some extent the capricious nature of storm damage.

The chances of individual houses or structures being subjected to severe tornado conditions are so remote and uncertain that in many regions of the country no attempt is made to design for severe storms. The fact that many buildings of known poor construction have stood for long periods of time without injury has often given a false feeling of security to people living in the immediate neighborhood.

These arguments are worthy of careful consideration in assigning wind pressures but it would appear that the fastenings of the building parts together might well be made a more definite requirement, and put on a par with other requirements when this can be done without increase in size of member and at a very small outlay for labor and fastenings.

There are five types of major failures that are very common in dwelling houses subjected to wind storms, and all reflect lack of tying and anchorage:

First: The roof on the lee side is torn loose and carried away.

Second: Flat roofs are lifted and carried away.

Third: Light to fairly heavy buildings are moved off the foundations.

Fourth: Porch roofs on the windward side are lifted and torn loose.

Fifth: Insecurely anchored walls on the lee side are torn loose.

Experimental data show several reasons for these types of failures. There are usually high pressures on the windward side with strong upward currents and whenever the air goes by any sharp corner there is a partial vacuum created on the lee side near the corner which is often of greater intensity in pounds per square foot than the pressures on the windward side. The storm is also at times accompanied by a rapid lowering of barometric pressure which gives an explosive effect to any confined air.

Suggested Precautions

It is suggested that it be required that:

(a) All buildings shall have their exterior walls and roofs with a rise of 12 inches or more per foot so tied together and to other parts of the structure as to safely resist an outward suction or force acting at right angles to their surface equal per unit of area to the horizontal wind pressure required by the code for a flat vertical surface of a building at the given height above the ground.

(b) All buildings shall have their parts so tied together and shall be so anchored as to resist safely a vertical lifting force or suction over the roof of 20 pounds per square foot of horizontal projection combined with the required horizontal wind pressure on the vertical projection of the building, without damage to the roof or other parts, or without the building being lifted or moved.

(c) *Stability*.—In estimating the required tying together of building parts and anchorage of buildings the weight of the contents and one-third of the weight of the structure, or any of its parts, shall be neglected.

The ordinary methods of tying and anchoring are entirely suitable for the purpose so long as the tying or anchoring is well done. In other words, good anchorage may be obtained by the *adequate* use of nails, bolts, or any other patent types of anchorage.

If frame houses are built in accordance with the foregoing, failures would be expected in the same five principal ways previously enumerated, but many storms which now cause severe damage would do practically no damage, and the order of the most prevalent failures aside from that caused by flying objects would be changed. The most prevalent type of failure would then probably be a moving of the house on the foundation fol-

(Continued to page 103)

*Specialist in the Mechanics of Timber; Forest Products Laboratory, Forest Service, U. S. Department of Agriculture.

ASBESTOS SIDING



WORKMANLIKE JOB: asbestos sidings with metal corner.



CALKING GUN speeds work on asbestos siding job.



WHEN Tom Jones, Carpenter, nailed down the last asbestos siding shingle applied last year to American homes he not only covered the 225,000,000th square foot of wall area, but he participated in one of the most remarkable developments in recent building material history.

This development is the big depression-born industry built up because of a demand on the part of the home-owning consumer himself. When home owners started putting asbestos roofing shingles on their side walls several years ago, the manufacturers of those shingles suddenly found a readymade market for a new product which they immediately set about developing—*asbestos shingles designed specifically for siding use.*

One contributing factor to the fast growth of the asbestos siding industry, in addition to the consumer demand, has been the ease and conventional characteristics of the application of asbestos sidings—details of which will be given in this article.

Just what are asbestos siding shingles? And what does this movement in the building material field mean?

Asbestos sidings are manufactured of two fundamentally permanent materials, asbestos and cement. Both defy heat and fire. Asbestos is a mineral found embedded in solid rock. No one knows exactly what it is, nor what it was before the ages transformed it into its present usable form. It has been in its present form, however, for centuries. When broken down, one single fiber is thirty times finer than a fiber of cotton. Under a microscope an asbestos fiber is a smooth, square, crystalline yet flexible strand. This flexibility has made possible the use of asbestos in thousands of ways, from the wrappings of mummies in the tombs of the ancient Pharaohs to the incendiary bomb snuffers of today!

Permanence and Fire Safety

Obviously, then, asbestos sidings have the twin virtues of permanence and fire safety which appeal to home builders. In fact, the combination of asbestos and cement in siding shingles creates a product seemingly indestructible. Asbestos sidings, as such, will, to the best of anyone's knowledge, last forever.

Application of asbestos sidings is very little different from methods of applying other types of exterior wall coverings. Like any other exterior wall covering that is nailed on, asbestos sidings need a smooth and substantial surface behind them, whether the siding job is new construction or re-siding over old wall materials. The product itself is somewhat different in that it is rigid and hard. It is virtually hand-made stone.

A new house with well-nailed, smooth sheathing is an ideal foundation for asbestos sidings. An old house needs bevelled strips, or straightening sheets, or nailing strips put on the walls, depending upon the existing siding material and its condition. Asbestos siding shingles, new from the bundle, may be susceptible to staining. Therefore

CLOSEUP (at left) of carpenters on a successful operative builder development shows how corner details are handled with asbestos sidings, using approved waterproof backer strips. Asbestos siding comes factory-punched for nailing at top and bottom.

Application Methods for LONG LIFE

By J. Harold Hawkins

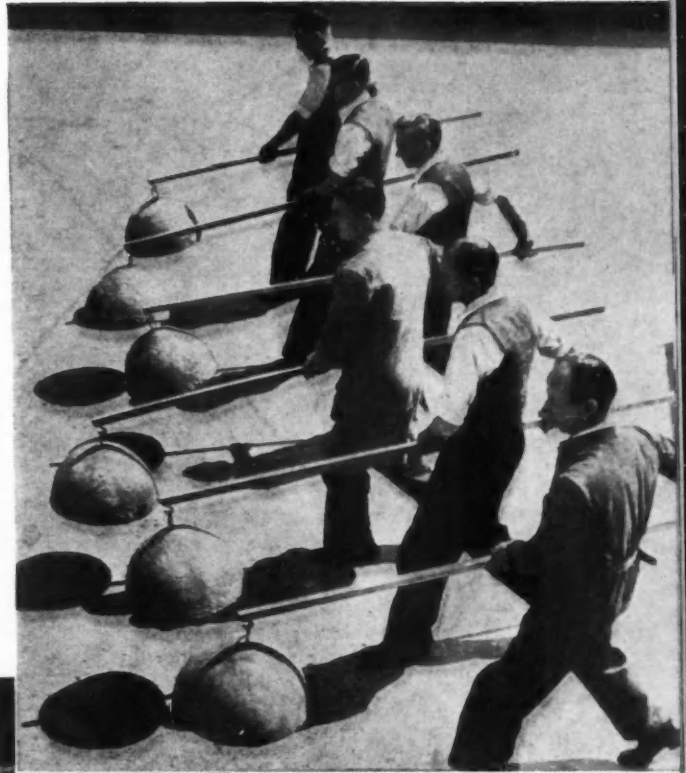
It is, as in any case of siding, a wise precaution to at least prime all woodwork, gutters, flashings and exposed parts from which rain might drip and stain. Precautionary painting before applying asbestos siding is wise and safe. Inasmuch as asbestos sidings do not call for painting, this merely means the setting ahead of the normal time for exterior painting.

Asbestos siding shingles are manufactured in different shapes and sizes, and with varying types of surfaces. But whatever the type, each piece of siding is factory punched for nailing, at the bottom as well as at the top. The bottom holes are smaller in diameter and, being exposed to the weather, the snug fitting nails are made of a special alloy which will not stain. These special nails are furnished with the asbestos sidings. The upper nails are galvanized, needle-point nails and are furnished by the builder.

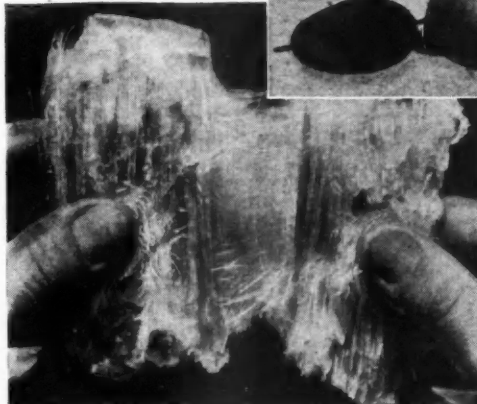
An average amount of care is required in driving nails through asbestos siding so as to get them down snug *but not too snug*. On new work the nails for the bottom holes are not less than 1 inch, and for re-siding the nails are longer, up to 1 3/4 inches. These sizes refer to the special alloy nails furnished by the manufacturer. The upper nails are 1 inch to 2 inches, depending upon the wall and its nail-holding quality.

Asbestos sidings are punched for nailing at definite locations. These definitely located nailing holes are helpful in the correct and rapid application of asbestos sidings. The two side, upper holes in an average 12 x 24 inch siding shingle are located 1 1/2 inches from the side edges. The third upper hole is located in the center-line of the siding near the top edge. The lower, or butt, side holes are nearer the side edges of the siding shingle than the upper holes. The special alloy, small-headed nails are made to fit exactly the smaller butt holes, and always should be used.

Application of the widely used 12 x 24 inch asbestos sidings starts by nailing a cant strip at the bottom of the wall, over the bottom edge of a horizontal layer of waterproof building paper or slater's felt. A common wood lath is about the right size for a cant strip. Next a chalk line is snapped a little more, or less, than 11 1/2 inches from the bottom of the cant strip. Determining this exact dimension above the cant strip depends upon how much it is desired to have the lower edge of the starter course of sidings lap below the bottom edge of the cant strip forming a drip. The lower edge of the cant strip, and thus



BOMB SNUFFERS made of asbestos are used in England to prevent fires from incendiary bombs.



FLEXIBLE FIBERS finer than cotton (left) are revealed as a small piece of pure asbestos is pulled apart with fingers.

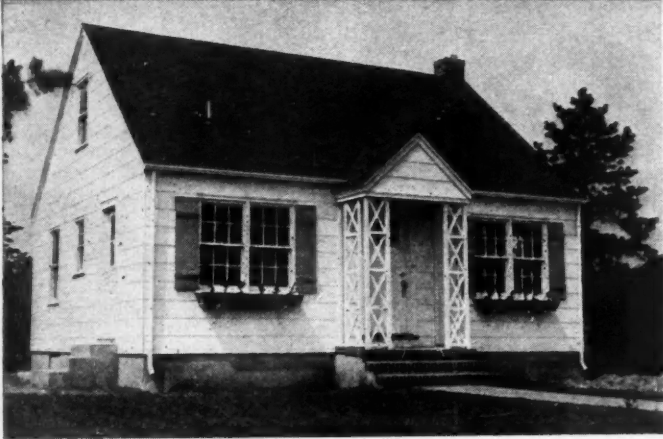
the chalk line, must be level to make a trim appearance.

Asbestos sidings are applied with 3 x 12 inch backer strips of waterproof felt or asphalt roofing at corners and behind all vertical joints between sidings. The manufacturers of asbestos sidings furnish the backer strips. A backer strip is folded vertically around the bottom of the beginning corner of the building with 1 1/2 inches on each wall. In most methods of application the first siding shingle is applied at the corner, its upper straight edge flush and level to the chalk line, and its side edge flush with the corner.

A nail is driven through the upper hole nearest the corner, this galvanized nail being driven in just snug. A nail is started in the opposite upper corner but before it is driven down snug a backer strip is placed under the edge of the siding, leaving 1 1/2 inches exposed for the next siding shingle to cover. Then the started nail is driven down snug. This nail, being 1 1/2 inches in from the edge of the siding, makes it easy and quick to slip the backer strip under the siding to its correct position because the edge of the backer strip just butts against the partly driven nail. The upper, center galvanized nail is

EDITOR'S NOTE

This is the first of a series of articles about the Asbestos industry, and the uses of asbestos products in different types of building projects. This article, and those to follow, will be reprinted in pamphlet form and distributed free of charge upon request mailed to the EDITOR, AMERICAN BUILDER, 105 W. ADAMS ST., CHICAGO.



BUILDERS feature asbestos sidings in attractive homes. At left is demonstration house, Brentwood, L. L. built by M. L. Westbrook; John W. McKeown, developer. Well designed house at right was built by Benson and Vest, Arlington, Va.

next driven in, and then the three special alloy nails in the butt of the siding are driven. It will be noticed that the two side butt nails go through the backer strip and hold it securely in place.

The 12 x 24 inch asbestos sidings are put on with a 1½ inch lap. Each backer strip when slipped into place should stick up above the top of the siding about ½ inch. This leaves 1 inch at the bottom of the backer strip to *overlap* the top of the siding below, yet not exposed because the 1½-inch lap of the sidings adequately covers it.

How to Shingle Corners

The first corner siding with its edge placed flush with the corner of the building will allow the corresponding corner siding on the adjacent wall to overlap it. The corner half-siding, which is applied above the first corner whole siding, will extend beyond the corner enough to allow its corresponding siding on the adjacent wall to butt against it. This method of creating a satisfactory corner therefore has the succeeding courses overlapping first right and then left. Asbestos sidings are applied with snug joints, but not forced tight. Corner boards can be used if desired, and there is also a metal corner bead for the purpose against which corner sidings butt snugly.

Asbestos sidings are easily cut. The cut edge is raked with a coarse file or rasp to be sure of a smooth edge for overlapping at corners as well as making close joints on flat surfaces. Cutting and fitting asbestos sidings are accurately and quickly done with a cutter for the purpose. A typical cutter, as illustrated, has attachments for punching two sizes of holes when needed in sidings that have been cut for fitting. There is also an attachment for notching sidings when fitting them around openings.

A cutter is almost indispensable and will easily pay for itself in time saved and waste avoided. The same is true of a calking gun. All window and door frames should be lightly calked, before asbestos sidings are fitted, with a good grade of compound the same color as the sidings being used. The operation is so simple and quick and neat that once a calking gun has been used it will remain as regular equipment.

The rest of the courses of asbestos sidings (the 12 x 24 inch size) are applied with their top edges flush and level to chalk lines spaced 10½ inches apart above the first chalk line snapped for the starter course. It is usually wise to work from both corners of a wall toward the center. With alternating whole and half siding shingles at corners the joints will break evenly and be little noticed on a

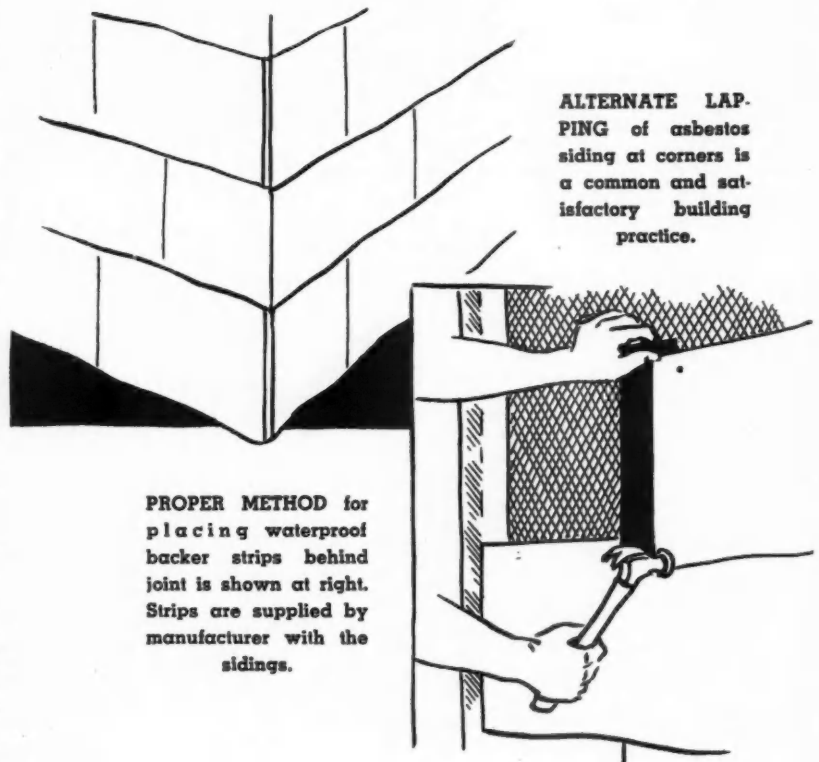
completed wall. Another method of breaking joints is to use whole, two-thirds, and one-third sidings in rotation at corners.

Re-Siding Jobs Easy to Handle

Since the original use of asbestos *roofing* shingles on side walls by home-owners, the methods of application have been simplified. This was done by the introduction of modern asbestos sidings and by accompanying helps in the preparation of old walls before asbestos sidings are applied.

Different types of existing wall surfaces call for varying kinds of handling. Clapboards or drop siding, or shingles, present uneven surfaces which take wedge-shaped strips, or nailing strips, to smooth the walls. Loose boards or shingles are nailed down secure. The wall is covered with slater's felt as the courses of asbestos siding go on. A wall should be completed at one time. If not, the top course of sidings, and the felt behind it, should be protected from possible rain. Nails or metals that might cause a rusty stain should be removed.

In some cases it has been found more economical to remove existing wall materials, exposing the sheathing. This is often true of stucco or like materials on wood frames. When the finished surface of an asbestos siding wall projects beyond the moulding at window and door



ALTERNATE LAP-PING of asbestos siding at corners is a common and satisfactory building practice.

PROPER METHOD for placing waterproof backer strips behind joint is shown at right. Strips are supplied by manufacturer with the sidings.

frames it is merely necessary to calk the joint and put on a thicker moulding to butt against the edges of the asbestos siding.

Application of asbestos sidings is surprisingly fast when two carpenters work together and have the right equipment at their elbows. This equipment consists of asbestos siding cutters (one at each corner), a calking gun, and a flexible scaffold. Asbestos sidings when delivered on the job, like most materials, need care in stacking and storing until the time comes to nail them on. Bundles are best cared for when stacked in a dry place off the ground and kept covered. Asbestos sidings are applied only on dry walls and in dry weather. After proper application, asbestos sidings will defy the elements. They do not warp, curl or shrink. Heat and cold, or wet and dry weather do not affect them.

Asbestos sidings, as well as asbestos building products of other types and shapes, are permanent materials used on all sorts of building projects, from cottages to manufacturing plants, from brooder houses to hangars and barracks. Asbestos is fast becoming of far greater importance in the whole building field than is generally realized.

QUESTIONS AND ANSWERS

Q. How many sizes of asbestos siding shingles are there?

A. There are five widely used sizes, from 8 x 24 inches to the popular 12 x 24-inch size, and the 9 inch by 8 foot clapboard.

Q. What exposures are used generally?

A. Exposures to the weather vary from 5½ to 10½ inches.

Q. What are the various types or shapes of butts?

A. There are wavy, straight, and thatched or staggered butts.

Q. Are asbestos siding shingles tapered?

A. There are both uniform thickness and tapered sidings.

Q. What colors are available?

A. White and gray are used mostly. There are also tints and mottled tones of browns, reds and greens.

Q. How many asbestos sidings to a square?

A. This varies with the size of siding used. The 12 x 24 inch siding with 10½-inch exposure takes 57 pieces to the square. The 8 x 24 inch siding takes 93 to the square at 6½-inch exposure.

Q. How many nails required per square?

A. Sufficient special alloy butt nails are furnished with asbestos sidings. In addition 1 pound of 1¼-inch galvanized needlepoint nails are required per square for top nailing.

Q. What surface textures are available?

A. The faces of asbestos sidings vary from smooth through grained effects, to raked or "hand split" textures.

Q. What asbestos siding cutter is recommended, and how much does it cost?

A. This information will be furnished by the Editor upon request.

RE-SIDING TECHNIQUE is illustrated at right, showing proper use of backer strips, waterproof paper and calking to produce a permanent exterior



ONE QUICK MOVEMENT cuts asbestos siding accurately or punches two sizes of holes when needed.

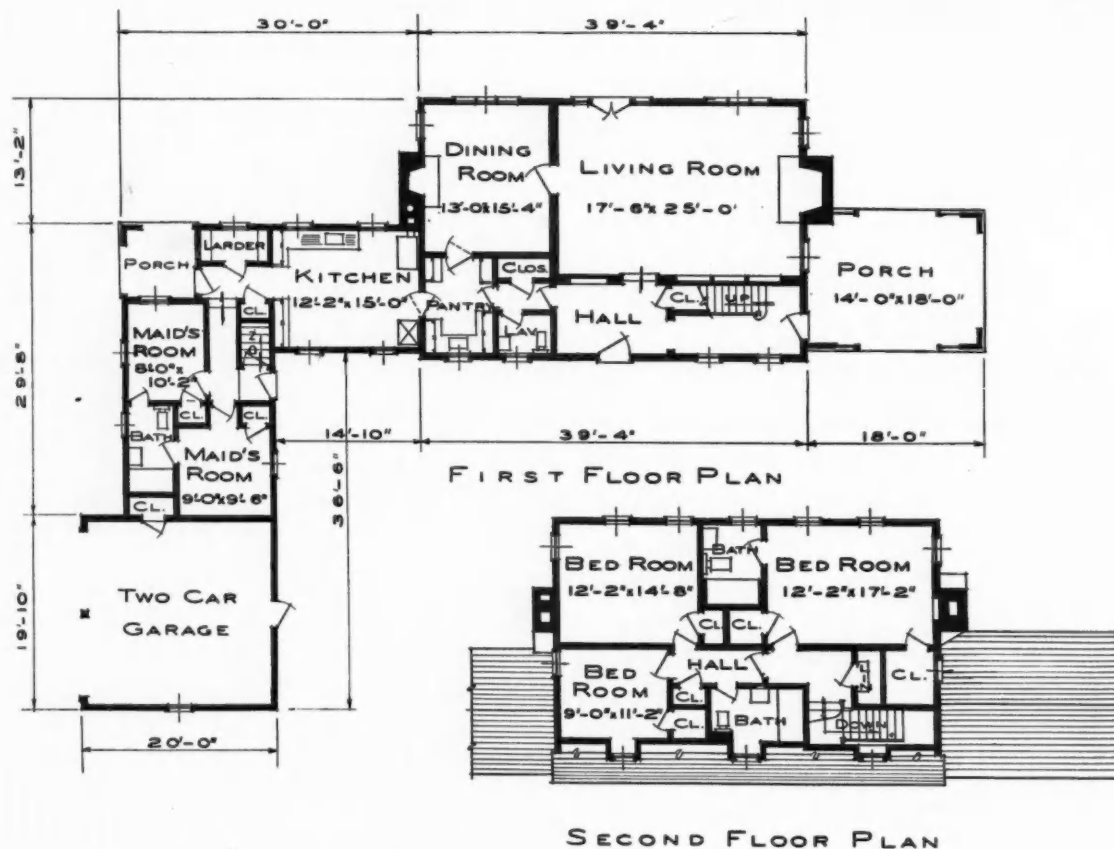
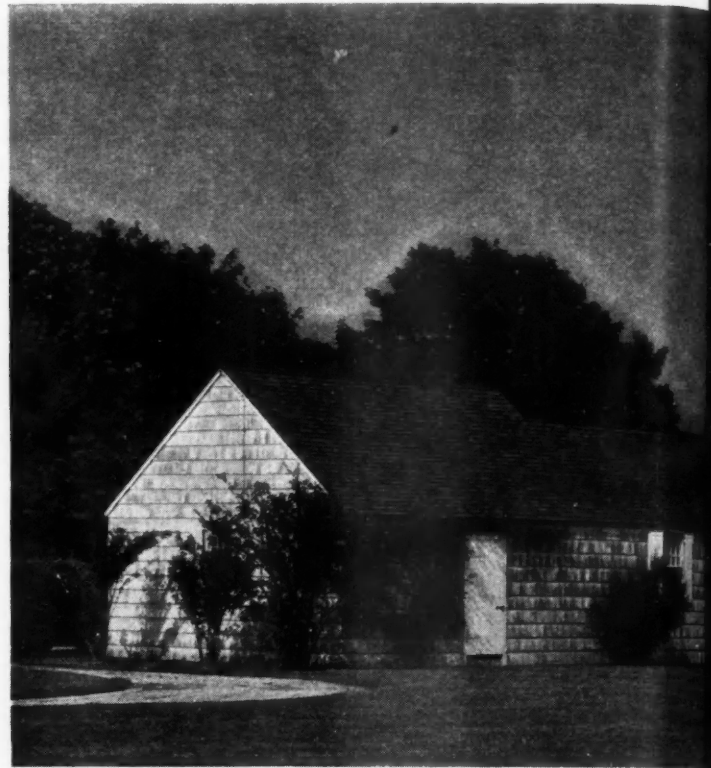


HANDY CUTTER notches asbestos siding for close fitting around window and door openings.



Good 100 Years Either Way

Weathered white cedar shingles give friendly, seasoned look to East Hampton, N.Y., front cover home. One-story wing accommodates kitchen, garage, maids' rooms. Frank B. Smith, builder; Polhemus & Coffin, architects.



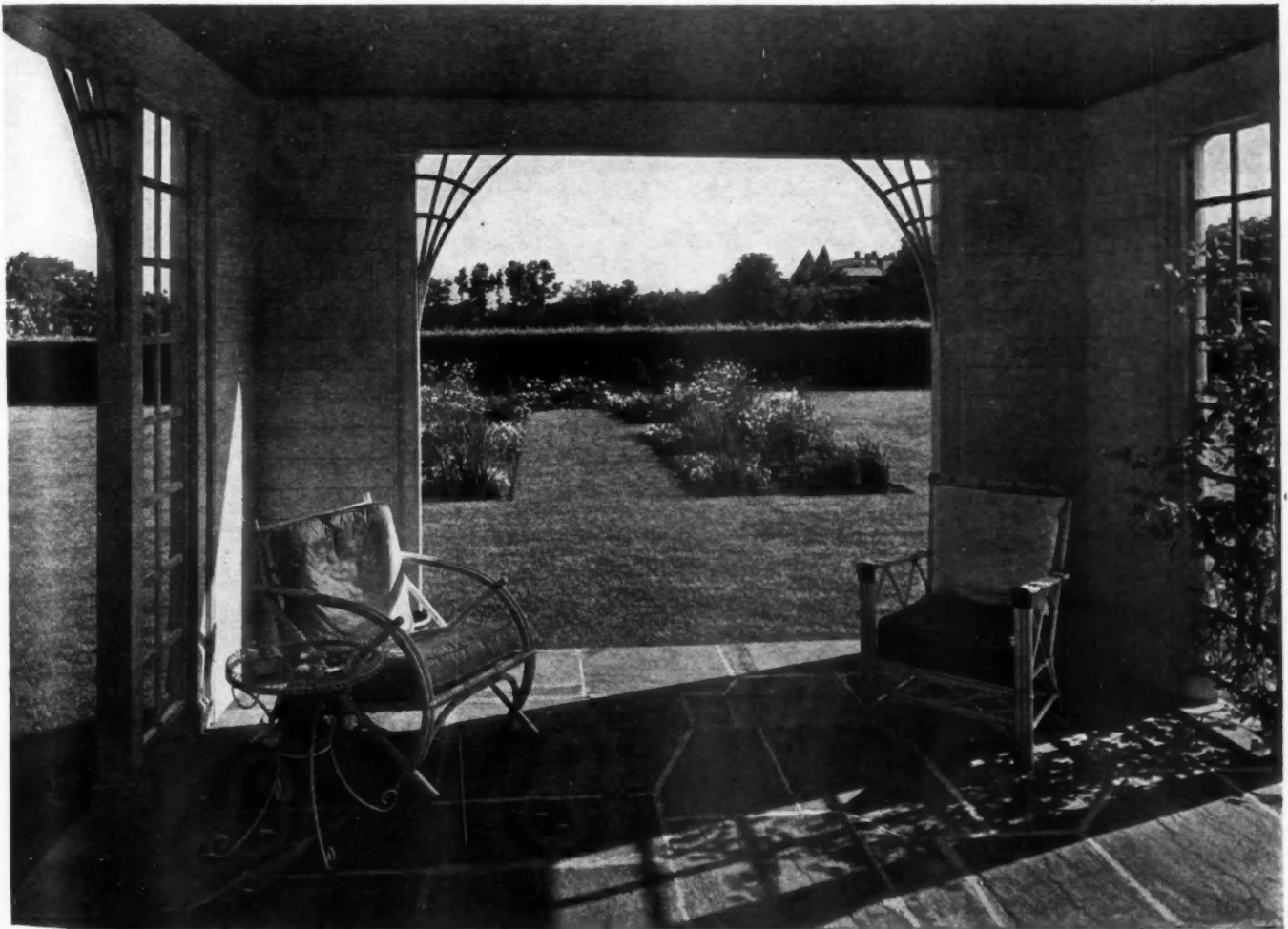
ONE HUNDRED YEARS doesn't mean much when a house is as well designed as this one at East Hampton, N. Y. It would have been good 100 years ago, and it will still be good 100 years hence. Frank B. Smith, the builder, did the job in an economical manner, producing a spacious and comfortable home at low cost. Cubage is about 40,000. Part of the economy is due to the low-roofed, L-shaped wing, which houses the garage and all the service rooms. Garage has a tamped

cinder floor, no doors. House is of simple, inexpensive construction, with a coal-fired hot air heating system, inlaid linoleum floors in baths and kitchens, brass pipe throughout.

Living and dining rooms are designed to face a view of the water. The white cedar shingle exterior has a light coat of whitewash, expected to wear off as the shingles weather, leaving a natural, light, weathered grey color.



Photos by Gottscho



Inviting 14x18 Ft. Covered Porch with Latticed Decoration, Flagstone Floor

A HOME, carefully planned with an exterior which will not be outmoded in a few years and an interior arrangement that is straightforward, compact and livable, together with good materials and construction for long life and low maintenance cost, is today one of the best forms of security; builders producing such structures will find a constantly increasing market as home seekers realize advantages of home ownership.

The Cape Cod design shown on these two pages is of this type which will have wide appeal. It was built in Kenosha, Wis., by R. B. Whitaker Co. of Winnetka, Ill., and was planned by Elmer Gylleck, A.I.A., Chicago, as one of a group published in the booklet, "New Designs in Homes," by The Architectural



Good Planning Plus Good Construction Mean SECURITY

DETAILS of this five-room Cape Cod design by Architect Elmer Gylleck are particularly well handled, as can be seen in the close-up of the dormer, cornice and entrance above; the exterior below has a pleasing effect of balance, compactness and simplicity.



Drafting Service. A story and a half in height, the plan provides for five ample rooms with six-room efficiency and is contained within overall dimensions of 33 by 23 feet. Common brick veneer, red cedar shingle roof, four-inch rock wool insulation over second floor ceiling and winter air conditioning are construction features.

While the house as built is of moderate cost, the plan as shown below indicates that further economies can be effected. For instance, a young couple can leave the second floor unfinished and also add the screened-in living porch and second floor deck later, since the first floor plan provides for dining space in the kitchen and allows the future dining room to be used meanwhile as a bedroom. A shower in the basement would provide all facilities

necessary to start out home life. Then, as time and money are available, if the owner wishes to do some of the work himself, the second floor can be finished room by room.

The plan has many other outstanding features. First floor lavatory is convenient to all rooms, basement and rear yard; kitchen work areas are efficiently grouped along two sides of the room; storage space is generous, there being eight closets on the first and second floors. All principal rooms have cross ventilation, living room and master bedroom being exposed on three sides.

All features being considered, this is the type of house which can be built now to offer the security of home ownership to a great mass of home buyers.

THE architect's perspective sketch of this charming story-and-a-half design was taken from the book, "New Designs in Homes," in which it was one of the sixteen small home designs by Elmer Gylleck, A.I.A. The exactness with which it was possible to duplicate it is demonstrated by comparison with the house as built in Kenosha, Wis., shown opposite.



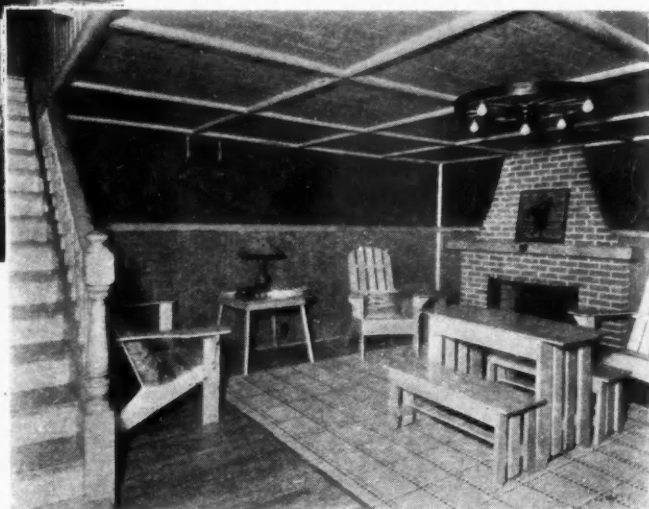
FIRST FLOOR PLAN



SECOND FLOOR PLAN



MODERN fluorescent lighting with fixtures concealed behind drapes and Venetian blinds gives the effect of daylighting to a modern recreation room such as the one shown at the left. The rustic type of treatment below has walls of Masonite Presdwood with a decorative design cut in.



Recreation Rooms Are More Attractive With New Finish Materials

INCREASING variety and lower prices of interior finish board products have resulted in a trend toward treatment of the basement recreation room as a beautiful and comfortable "extra room" in the house instead of just a "rumpus room." The growth in popularity of this type of material and the many useful purposes to which it can be put is one of the biggest developments in the building supply industry in recent years.

It has not been so long since conversion of the basement into a recreation room was solely a matter of shutting the furnace off from sight, whitewashing the walls, and installing old, discarded furniture from other parts of the house.

Today's conversion follows the same theory, but has been refined by the availability of new materials for walls, ceilings and built-in furniture. Wood fibre boards are now available in a variety of textures, in various degrees of density to meet different conditions, and in a wide assortment of sizes. Some boards are available in colors and others may be left either in their natural wood color or painted to meet the individual's tastes.

For wall and ceiling surfaces one of the popular materials is Presdwood. Some grades are tempered to a glass-like sur-

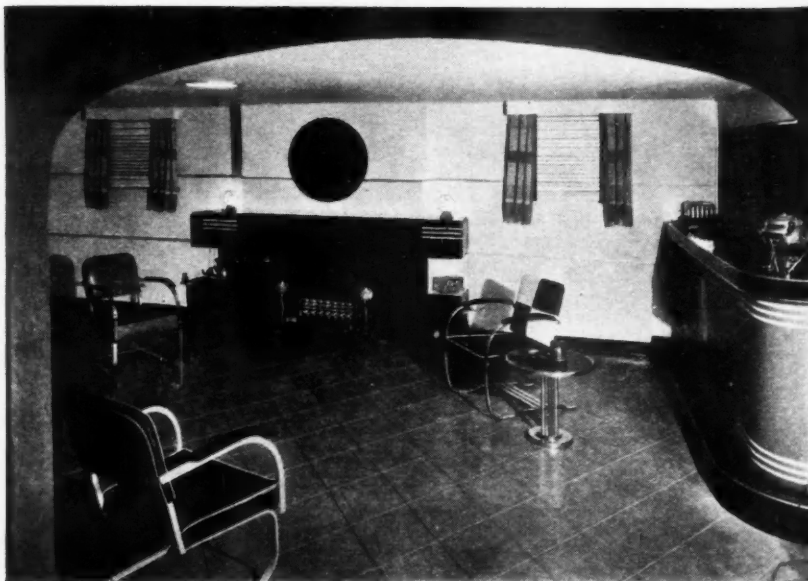
face. A similar board of less density is usually used on the ceiling because of its acoustical properties, shutting off the noise of the recreation room from the rest of the house.

Such boards are simply tooled, and designs can easily be executed through sanding or grooving.

Built-in couches, shelves, bars, liquor bins, clothes and game closets, all easily built with the same type of material, also have become almost standard in up-to-date recreation rooms. In addition to these, full length "windows" and artificial fireplaces for gas logs are easily installed at the same time. The fireplace can be finished to harmonize with the rest of the room or done in one of the attractive tile boards. A reflector back of the logs will throw the heat into the room.

Use of the new fluorescent light fixtures back of full length drapes suspended from a cornice board provides the illusion of natural lighting.

A SMART modern recreation room with plain wall surface panels and horizontal moulding trim is made more enjoyable with fireplace, bar and other built-ins easily constructed of Tempered Presdwood, such as are illustrated at the right.



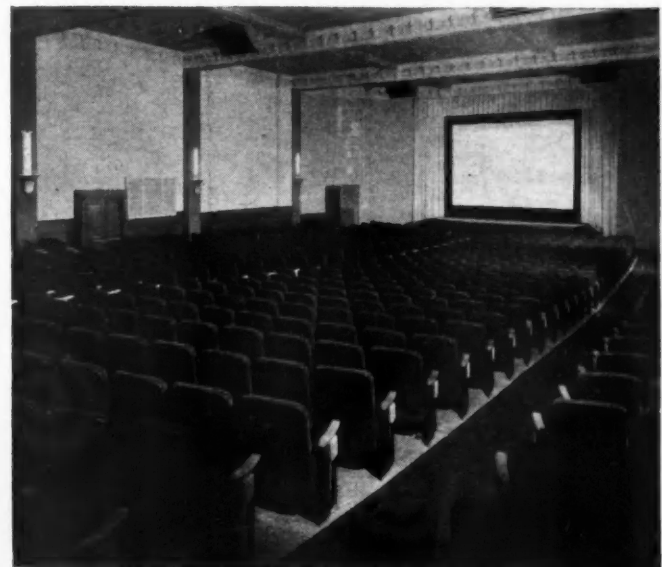
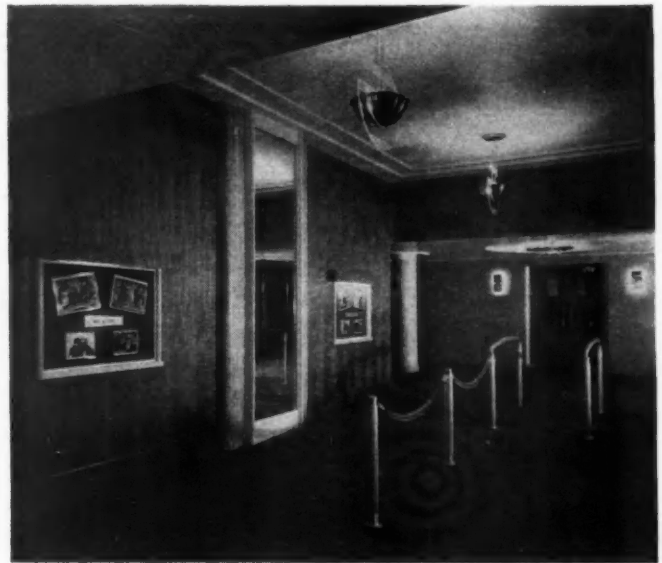
New "Push-Back" Seats Used in Lex Theatre (Chicago) Remodeling

THE old Lexington Theatre on 63rd Street in the Woodlawn district of Chicago has recently been remodeled and restyled under the guidance of the architectural firm of C. W. and G. L. Rapp, Inc. Much of the exterior ginger-bread of the old theatre was removed. The inside was cleaned out and refinished in smart flat wood paneling and the name of the theatre changed to the "Lex." Most important innovation was a complete new seating scheme, utilizing an entirely new type of theatre seat built on a revolutionary "push-back" principle.

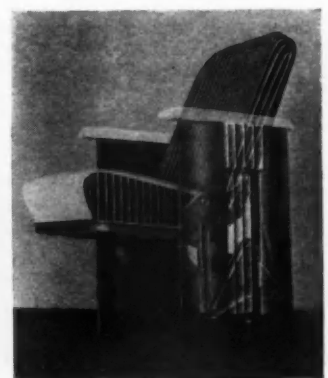
These seats, developed by the Public Seating Division of the Kroehler Mfg. Co., Chicago, are said by theatre experts to mark the third outstanding advance in motion picture theatre management in the last 20 years—first, air conditioning; second, sound; and now these push-back seats, which permit the theatre patrons to move freely in and out of the rows without the difficulty and embarrassment of climbing out over other people's feet and knees. With this new seat a simple motion of the body retracts the seat 5½ inches without lessening the row space behind it. It permits patrons to enter or leave seats without disturbing others. It keeps everyone seated except those who are actually moving in and out of rows. These seats are installed on standard spacing and yet 5½ inches is added to the row space by a simple motion of the body sliding the seat backward to a more upright position.

The construction of these new push-back seats is strong and simple and easily installed. Steel framework hangs on a pivoted rocker which gives to the seat its two-position action, erect or relaxed.

In the remodeling of old moving picture houses, builders can point out to theatre managers how this type of theatre seat attracts the public and builds attendance. It completely outmodes the old fashioned climb over seats in other movie houses. The Lex in Chicago, since its remodeling, has been doing a big business—which is a practical endorsement by the public of its modernization.



NEW restyled lobby and resealed auditorium in the Lex Theatre, Chicago; C. W. and G. L. Rapp, Inc., architects for the modernization.



"PUSH-BACK" seats in the Lex Theatre permit patrons to pass in and out; a simple movement of the body changes the chair from the relax to the upright position adding the equivalent of 5 inches to row space.

Low-Cost Plank Wall and Roof System

Developed by California Builders

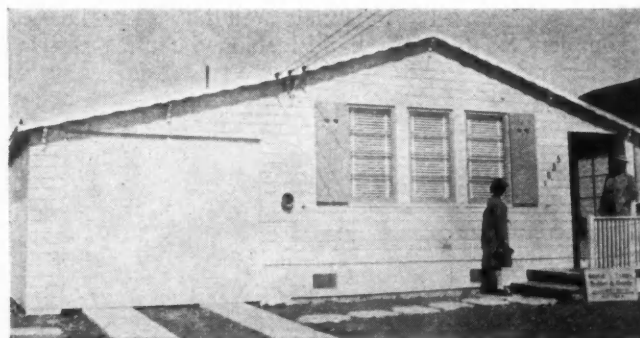
A NEW Colonial-type cottage, located at 1835 Wilcox Avenue just outside the city limits of Richmond, Calif., has created considerable interest among local building, financial and Federal Housing Administration officials in the Bay Region. This attractive five-room home, known as the "California Colonial Cottage," was designed for low-cost construction (and a patent applied for) by Merle Bishop of Builders Emporium, El Cerrito, Calif., and was built by George S. Tandy, prominent Richmond builder. More than 700 persons visited the house the first day it was open for inspection and that evening it was sold for \$2,650.

The type of construction is the unique feature of this low-cost home. The walls consist of 6/4 Ponderosa pine planks, 10 inches wide, center-matched and placed vertically. These planks serve a three-fold purpose in the wall construction, namely, the sheathing, framing and inside walls of knotty pine finish. Standard siding is applied over the vertical planking. The same plan is used for the roof, which can be overlaid with red cedar shingles. The tops and bottoms of the wall and roof planks fit into specially milled sections (see illustration below), which serve as the plate cap and ridge pole and are milled to the design needed to provide the framing cornice and base. The partition walls are also of 6/4 material and serve for paneling. Dowels are used to stiffen up the walls, which are placed near the top and bottom of the wall and roof planks. About 5,000 feet of Ponderosa pine was used in the construction of this house, according to Mr. Tandy, and such a structure can be completely erected, ready for occupancy, in 3 to 4 weeks.

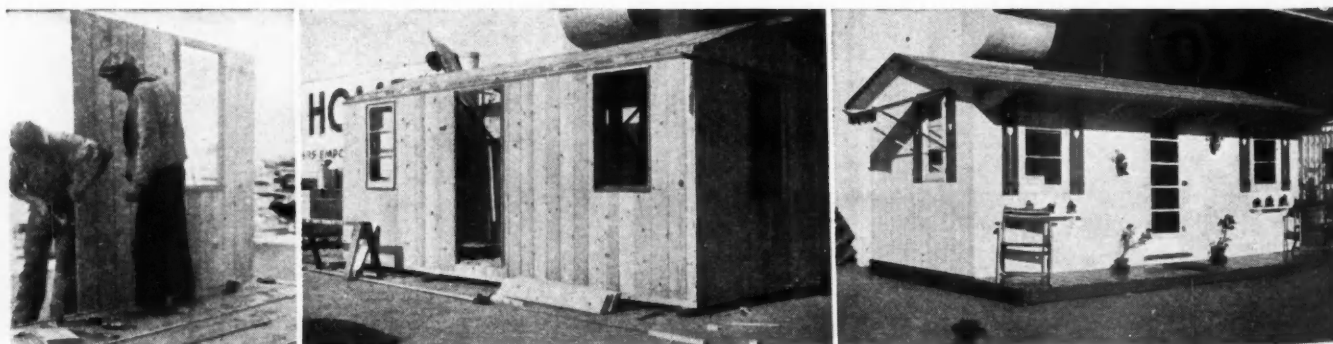
The floor plan is conveniently arranged for a small family. It consists of a large living room with knotty pine walls and exposed roof planks, two bedrooms, kitchen, dinette, bath and utility room. Natural gas heaters solve the heating problem very nicely.

The low cost and simplicity of the wall and roof construction in this Richmond home have made a real appeal to all connected with the housing problem. Mr. Bishop and Mr. Tandy expect to build many more of these single-wall houses as the demand for such modern structures far exceeds the supply. Such houses can be built to sell in that section of the country for \$2,500 to \$3,000 and can be purchased for a down payment of around \$250 and for monthly payments of about \$20 to \$22 under FHA provisions.

FLOOR plan of five-room California Cottage using Bishop's system of matched plank wall and roof construction. This particular design has siding applied as exterior finish; plank provide wall sheathing and interior finish.



EXTERIOR of low-cost home described in text and shown in plan above using patented 2" Ponderosa pine wall and roof construction.



ABOVE: Three stages of construction of a 14 x 30 foot recreation cabin using the same Bishop plank system. Planks for side walls are being doweled together at the left; partially completed cabin is shown in center, and the completed job ready for delivery, at the right.

Miscellaneous Uses of THE STEEL SQUARE

This Final Article in the Series Explains a Group of Problems Solved with This Useful Tool

By Gilbert Townsend

IN the preceding articles of this series the carpenter's steel square has been described and the application of this tool and the markings and tables on its surfaces to a number of problems, including roof framing, have been explained. This, the final article, will show how the square can be used to solve other miscellaneous problems which may confront the carpenter from time to time.

Valley Rafters in Roofs of Unequal Pitch

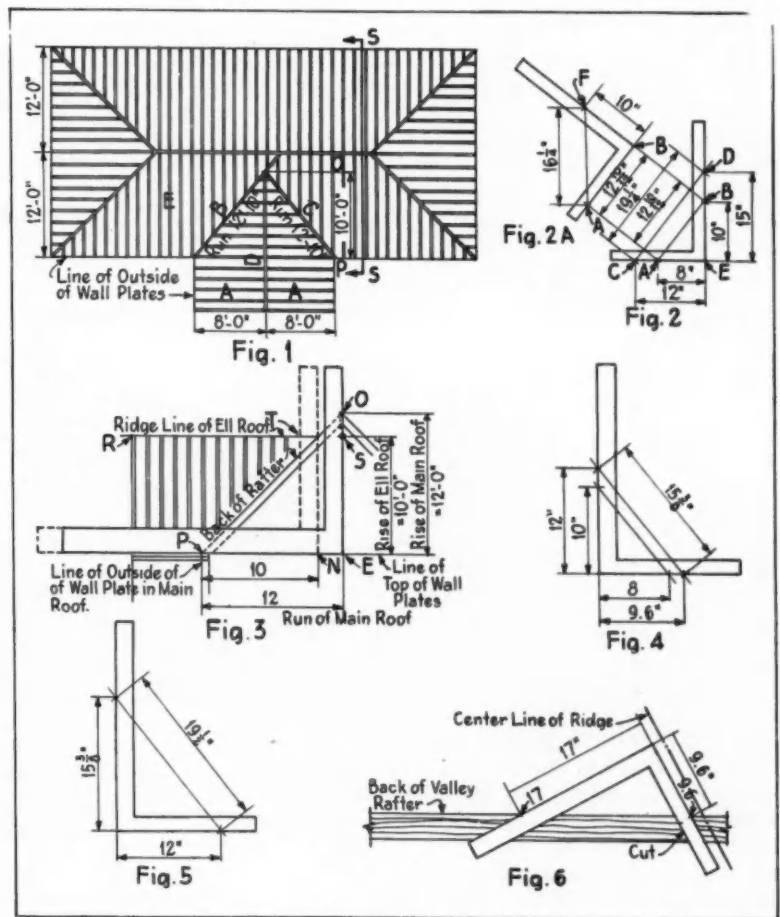
All of the hip and valley roofs which have been considered in these articles up to the present time have been roofs "of equal pitch" that is, the rise-per-foot-run of the common and jack rafters in the hipped ends and in the ell roofs have been the same as the rise-per-foot-run of the rafters in the main roof slopes. As a result of this the runs of the hip rafters and valley rafters which show in the roof framing plans have always made an angle of forty-five degrees in plan with the lines of the wall plates and the ridges. It is quite a common thing, however, to see ell roofs whose span is considerably less than the span of the main roof, but the rise of which has not been reduced in proportion and may even be equal to the rise of the main roof. Fig. 1 shows a framing plan for a roof with an ell of this kind, which has a different slope from the slope of the main roof. The ell roof has a run of eight feet and a rise of ten feet while the main roof has a run of twelve feet and a rise of twelve feet. The result of these differences in slope of the two intersecting roofs is a roof "of unequal pitch" insofar as the valleys are concerned.

The common rafters in the ell roof have a rise of ten feet in a run of eight feet. To find the rise-per-foot-of-run take the square as shown in Fig. 2. Measure off 8 inches along the tongue and 10 inches along the blade. Mark these points and draw a line through them such as line A-B in Fig. 2 and also a line CAE along the outside edge of the tongue of the square. Then line A-B represents the pitch of the ell roof. Mark the point C on line C-A-E twelve inches from the heel of the square at E. Then a line C-D drawn parallel to line A-B through point C will be found to intersect line E-B-D at the point D, 15 inches from the heel of the square at E, thus showing that the ell roof has a rise-per-foot-run of fifteen inches. The length-per-foot-run of rafter will be equal to the distance from point C to point D which by measurement is found to be 19 1/4 inches. The length of the common rafters in the ell roof, marked A in Fig. 1, can be found by multiplying this figure of 19 1/4 inches by eight (the run of

the rafter in feet) which gives twelve feet ten inches. As another way for getting the length of the common rafter in the ell roof the distance A-B in Fig. 2 can be measured carefully with a square which has the outside edges of the "back" divided off into twelfths of an inch and the result in inches multiplied by twelve or taken as feet instead of inches. The result of the measurement will be twelve and ten-twelfths inches indicating a rafter length of twelve feet ten inches for these common rafters in the ell roof.

The run of the common rafters in the main roof (marked E in Fig. 1) is twelve feet and it was assumed that the rise of this main roof was twelve feet, so the point at which the Measuring Line of the common rafters intersects the center of the ridge board will be twelve feet above the top surface of the wall plates. Since the rise of the ell roof is assumed to be ten feet the point in which the Measuring Line for the common rafters of the ell roof intersects the center of its ridge board will be ten feet above the top of the wall plates. In Fig. 1 no overhanging eaves are shown, so the Measuring Line will be the "back" of the common rafter in both cases as shown in Fig. 3. If a section were assumed to be cut right through the roof frame on the line S-S (Fig. 1) and this section were drawn out to a scale of one-inch-equals-one-foot, then each foot of the run or the rise of the rafters would appear as an inch on the drawing and if a steel square were to be laid down on the sectional drawing, then each inch along the edges of the square would correspond to an inch on the drawing and would represent a foot in the actual roof frame.

(Continued to page 86)



SHOPCRAFTER'S Corner

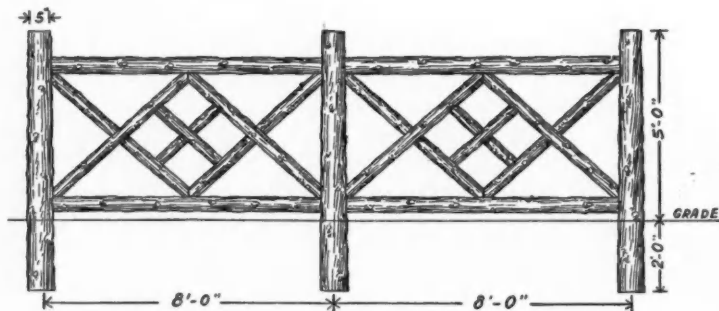
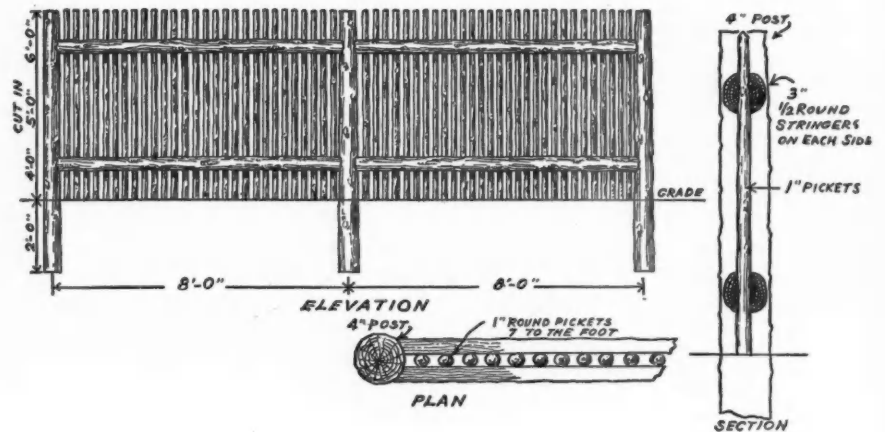
Things To Build for Profit or Pleasure

Rustic Cedar Fences for Garden Enclosures and Screens

EASILY erected fences made of cedar with the bark left on to give a picturesque effect and serviceable screen are shown in a number of styles on these two pages. Material for them can be secured through the local lumber dealer cut to length and ready to be set in place; national and sectional distribution has

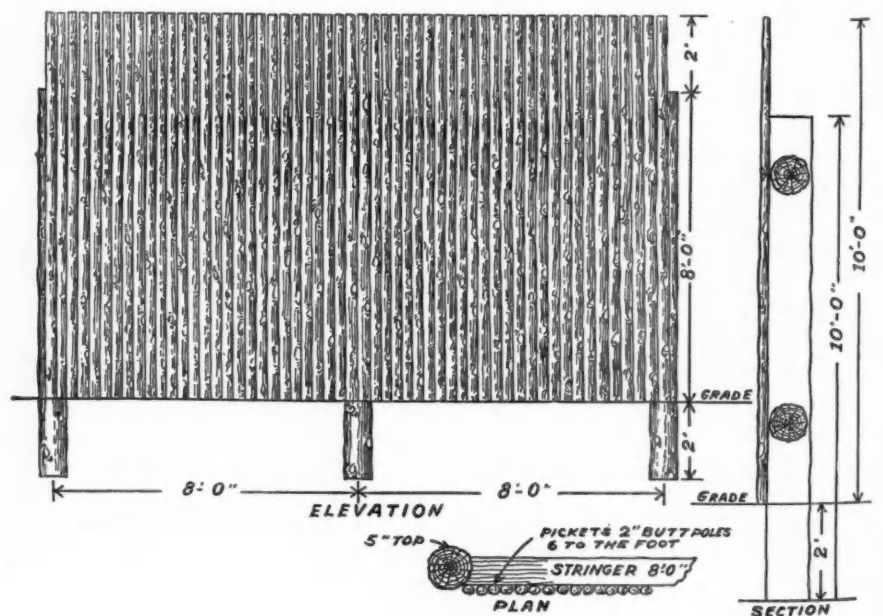
been set up by several manufacturers of this type of fence. It is recommended that wrought iron nails be used in the erection of these ornamental fences; working plans are furnished with materials. The pickets, posts, stringers, cross pieces, top rails, etc., come in sizes as indicated in the sketches.

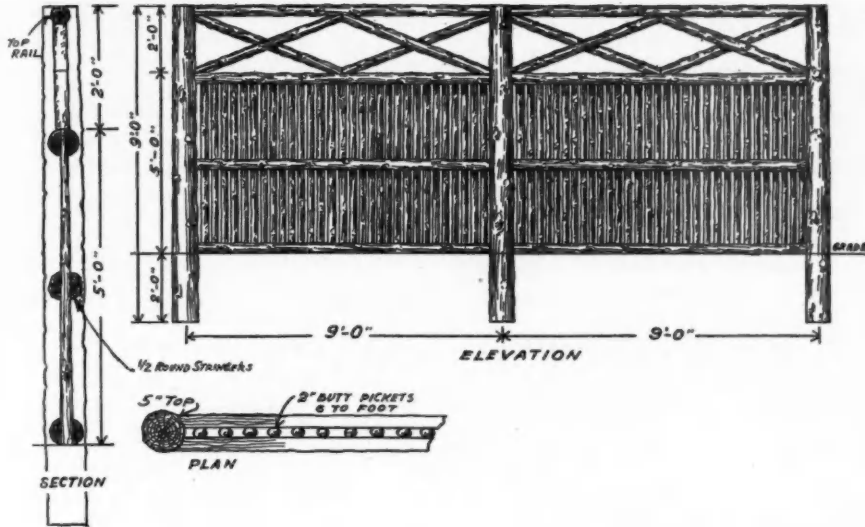
RUSTIC TWO-SIDED FENCE: The fence shown at the right has the same appearance from either side, pickets being spaced seven to the foot between half-round stringers on each side. Four-inch round posts are available in lengths for fences 4, 5 and 6 feet high. Pointed pickets may also be used.



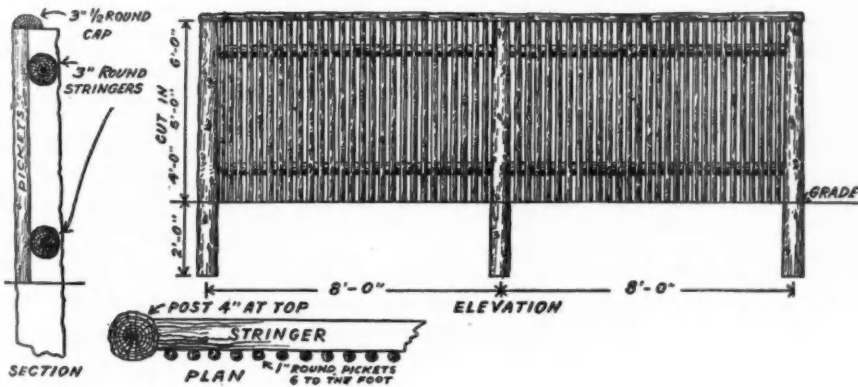
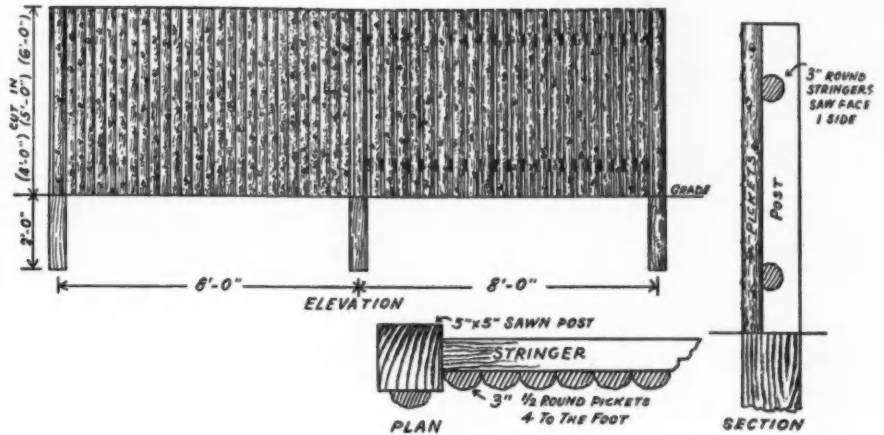
ORNAMENTAL OPEN FENCE: A suggestion for an open type dividing fence for use where screening is not necessary is shown at the left. Also being made of rustic cedar, it harmonizes very nicely with the picket enclosures illustrated. The main posts are 5 inches in diameter at the top; main rails are 4 inches, with cross rails of 2½-inch holes.

HIGH PICKET FENCE: This fence provides complete enclosure for garden spots where privacy is desired. Its rustic beauty lends itself to landscape architecture where a high one-sided fence is needed. Posts and pickets are 10 feet in length, the latter having 2-inch butts and spaced six to a foot.

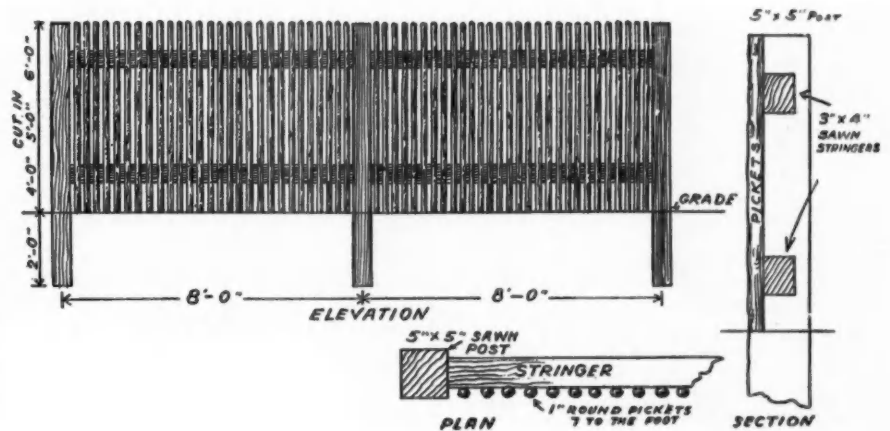




HALF-ROUND PICKET FENCE: For this enclosure 3-inch half-round parallel sawed pickets are used to permit their close fitting. Wider spacing with these pickets will give a close screen but not a tight fence, as shown in the right half of the illustration. Five by five squared posts and 3-inch saw-faced stringers are used.



SAWN POSTS AND STRINGERS: This fence uses red cedar 5 by 5 inch square sawed posts and 3 by 4 stringers. By combining with rustic cedar pickets, a contrasting effect is secured. Another variation would be the use of pointed or half-round type pickets.

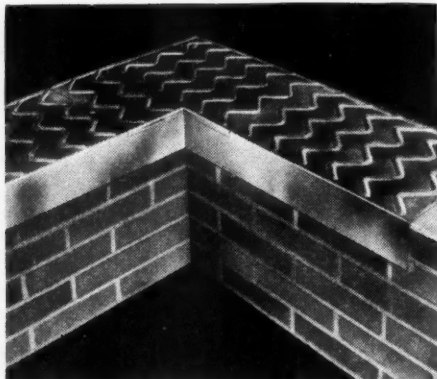


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WHAT'S NEW IN BUILDING MATERIALS

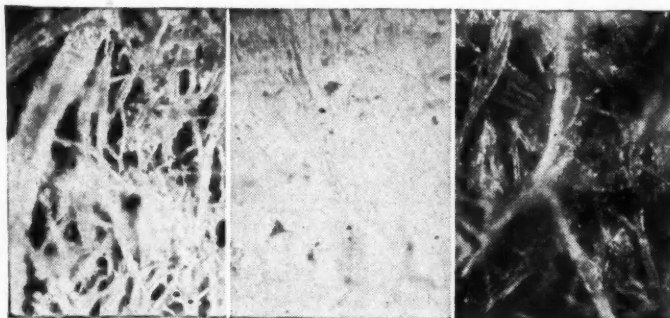
AB143 Anaconda Through-Wall Flashings are made by The American Brass Company, Waterbury, Conn., from 16-ounce copper and are available in two standard sizes, 8 and 12 inches wide in 8-foot lengths. The prin-



ANACONDA Copper Through-Wall Flashing

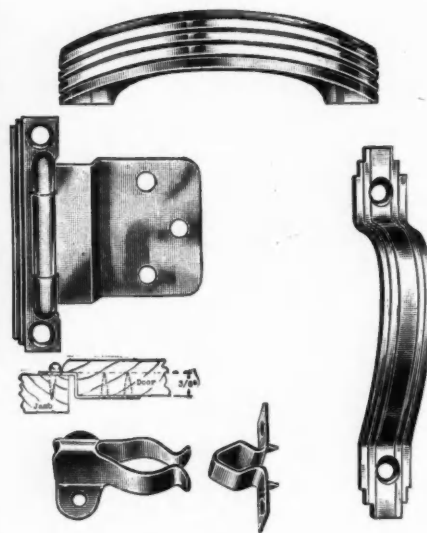
cipal design feature is a series of zig-zag ridges intersected at one end by a longitudinal ridge which acts as a dam, causing any accumulation of water to flow to the opposite face of the wall.

AB144 A fade-proof colored surface of good acoustical properties has been developed for Nu-Wood Insulating Interior Finish by the Wood Conversion Company, Saint Paul, Minn. The new type of coating on Nu-Wood "Kolor-Fast" retains a noise reduction factor of .35. In coating Kolor-Fast each surface fiber is coated individually. When the fibers are matted into insulation board units, tiny spaces are left between the fibers. The structure of the board is plainly shown in accompanying microphotographs.



Microphotograph, left, shows structure of standard Nu-Wood greatly enlarged; center shows a surface coated board; right shows "Kolor - Fast" Nu-Wood; openings between fibers same as standard Nu-Wood.

AB145 To meet the need of quality cabinet hardware for low cost housing, the American Cabinet Hardware Corp., Rockford, Ill., has recently introduced good looking hinges, pulls and catches, making it possible to trim a



"Amerock" Cabinet Hardware at Low Cost

cabinet door for as little as 35 cents at retail cost. The "Paintovr" hinges have a prime coat finish so the hinges can be painted at the same time as the cabinet doors. Special joint construction provides extra clearance and prevents the paint from rubbing off or chipping. Three different styles of chromium plated pulls are offered, a door pull, a drawer pull in the outside fastening type, and one of the inside fastening type. Included is the "Dor-fast" friction catch.

AB146 "Plan It Series"—the Harbord Plywood Corp., Hoquiam, Wash., is issuing from time to time 8 page booklets showing design, working details and bill of material for a popular type building. For instance, No. 16 presents auto cabins, 17 a drive-in roadside inn, 18 a vacation house. Harbord Douglas Fir Plywood is used.

AB147 Rilco Laminated Barn Rafter, and numerous farm building designs utilizing them, are illustrated in a 6-page, 2-color data sheet from the Rilco Laminated Products, Inc., Albert Lea, Minn. "We'll plan your building construction for you" is an interesting offer by the Rilco engineers.

AB148 The important West Coast woods, Douglas Fir, West Coast Hemlock, Western Red Cedar and Sitka Spruce, are presented in a very interesting way in a new 8 page pictorial data sheet from the West Coast Lumbermen Assn., Seattle, Wash. Dramatic photographs show logging and lumber manufacturing scenes.

AB149 "Roofs and Exterior Walls of Red Cedar Shingles" is the subject of Extension Bulletin 540 of the Oregon State College—48 pages, well illustrated with photographs and working drawings. It discusses farm buildings, roofs and shingle practice in a very clear and helpful way—The Red Cedar Shingle Bureau, Seattle, Wash.

AB150 "Facts About Tile" is a beautiful brochure, 20 pages and covers, illustrating present day ceramic tile and its use in bathrooms, kitchens, recreation rooms, sun decks, etc. With the trade restraints removed, tile is now in the running again and this tile book will serve a useful purpose.—The Tile Manufacturers' Assn., Inc., 50 East 42nd St., New York City.

AB151 "Robertson Protected Metal for Roofs and Sidewalls" is the subject of a 12-page, 2-color data sheet illustrating numerous uses for this corrugated steel asphalt and asbestos protected building material.—H. H. Robertson Co., Pittsburgh, Pa.

AB152 "Revere Copper for Roofing and Flashings" is a 44-page pamphlet of specifications and installation details covering standing seam, flat seam and batten seam copper roofing practice.—Revere Copper and Brass, Inc., N.Y.C.

Readers' Service Department Continued to Page 62

FOR QUICK, CONVENIENT SERVICE, USE COUPON, PAGE 66



Simple to Sell— Because It's

- ① HOURS EASIER TO INSTALL
- ② DOLLARS EASIER TO BUY
- ③ ONLY ONE UNIT TO HANDLE

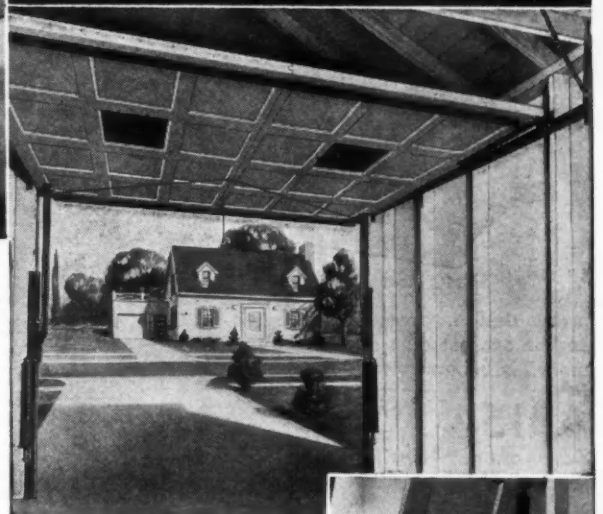
First, in 1930, came "Over-the-Top" Door Equipment with its revolutionary principle of operating standard, vertical one-piece doors, up and over-head in 3 SECONDS! In 1933 its application to double-width and heavy factory doors was announced. Then, in 1938, a lighter, less expensive model brought the convenience of this widely accepted equipment to the mass market. Now . . . crowning 10 years of sales successes . . . comes the introduction of No. 10 Complete Garage Door Unit . . . "Over-the-Top" Door Equipment at its best for the modern home field. Here is a unit (door and hardware, complete) . . . pre-fitted for the now standard-size opening (8' wide by 7' high) . . . lighter in weight . . . quicker than ever to install (all holes bored for bolts) . . . and easier than ever on the pocketbook of the purchaser. Be the first to introduce this money maker to your locality. Get the full facts on this selling sensation, NOW!

FRANTZ MANUFACTURING CO., Dept. A-B, STERLING, ILL.



Complete GARAGE DOOR UNIT

New!
A SPECIALLY BUILT DOOR *Plus*
"OVER-THE-TOP" DOOR EQUIP-
MENT, COMPLETE... PREFITTED FOR
8' WIDE BY 7' HIGH OPENINGS



SIMPLE AS

A - B - C

Door rises up and completely in . . . no "awning effect!" Only 2" clearance required above the opening. Rigid lifting arms are powered by heat-treated and oil tempered steel springs. Adjustment is provided for exact amount of "lift" required. Has all-steel weather strip.

CHROME PLATED LOCK

An Added Selling Feature

As regular equipment with the No. 10 Unit, the smart, modern, automobile-type handle-lock, with 2 keys, is included. For permanency of finish the handle is chrome plated. The lock provides full protection because catches engage inside, on both side jambs.



FRANTZ

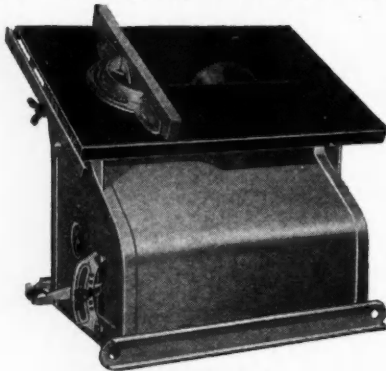
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NEW MODELS, POWER EQUIPMENT & TOOLS

AB153 The Construction Machinery Co., Waterloo, Ia., has developed a new Kost Kutter line of power saws, built for high speed, precision sawing. These machines are completely streamlined, safe to operate, and easy to move to the job and on the job. Note the completely enclosed saw dust-



CMC Kost Kutter Sr.

proof design, protecting the air-cooled engine against dust and dirt. The senior model is 6 horsepower, the junior 3.6.

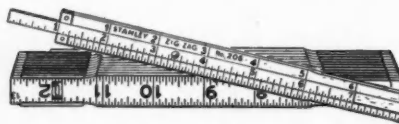
AB154 More power has been given the new 12" Speedmatic Saws offered by the Porter-Cable Machine Co., Syracuse, N. Y. These tools are now available with 3 phase, 220 volt



Extra Powerful
Speedmatic Electric
Hand Saw

motors, thus equipping them with ample power for heavy duty cutting. The manufacturers also produce a Radial Arm in which this "Speedmatic" may be used; thus this unit serves as an electric hand saw and as the power unit in an over-arm saw unit capable of cross cutting and ripping any angle or compound angle. Four smaller models of these electric hand saws are also in use, the 1/2, 1, 1-1/3 and 1 1/2 H.P.

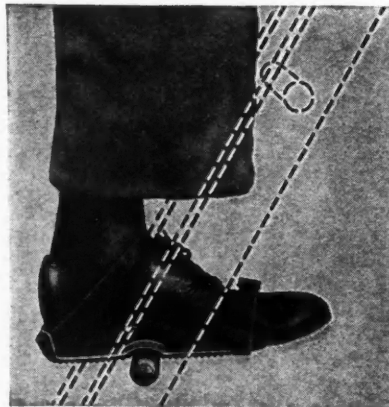
AB155 A new rule by Stanley Tools, New Britain, Conn., has a 7" brass slide, graduated in inches by 16ths, which makes it practical for inside and outside measurements. The first leg is extra thick and is finished white; other legs are yellow. Baked-on enamel and coatings of clear lacquer provide a



Stanley Extension Rule No. 206

crack-proof, water resistant finish. The rule is graduated for 6' with large Gothic figures and clean cut graduations in inches and 16ths on both edges. Concealed joints, strike plates and tips are brass plated.

AB156 Ladder workers will welcome the advent of a new non-slip "shoe" designed to protect them from the dangers and discomforts of ladder climbing and standing. As the accompanying illustration shows, the device (called Lad-R-Shu, manufactured by Landon P. Smith, Inc., Irvington, N.J.) consists of a sturdy steel plate which is held firmly against the sole of the wear-



New Non-Slip "Shoe" Aids Ladder Workers

er's shoe with strong leather straps. It has a slip-proof bottom of long-wearing rubber matting and a specially designed grooved arch that grips the ladder rung securely. Light in weight, the Lad-R-Shu is convenient to carry and wear, and easy to walk in. Users testify that a pair makes long hours of standing on a ladder safe and comfortable.

Readers' Service Department Continued to Page 64

AB157 "Balanced Power and Flexibility by De Walt" is a new 8 page folder giving all kinds of information about De Walt power woodworkers and the work that they accomplish. The five major types of De Walt machines are illustrated along with many convincing proofs that "De Walt cuts costs as fast as it cuts wood"—De Walt Products Corp., Lancaster, Pa.

AB158 The C. H. & E. line of contractors' equipment, including single drum, double drum, reversible hoists, mortar mixers and material elevators, is presented very thoroughly in a 12 page, rotogravure catalog. Complete mechanical specifications for these power machines are given with suggestions for their use.—C. H. & E. Mfg. Co., Inc., Milwaukee, Wis.

AB159 Syntron 1940 labor saving electric tools and concrete vibrators are illustrated in a 16 page data sheet. Syntron Electric Hammers are shown in 18 different classes of work. The various types of electric hammer tools and points are also shown. The Syntron electric hand saws, drills, sanders and concrete vibrators complete the catalog.—Syntron Co., Homer City, Pa.

AB160 The Clarke Sanding Machine Co., Muskegon, Mich., has brought out a circular on the new "Dreadnaught" MV-8 floor sander. Complete details of this improved machine are illustrated and described.

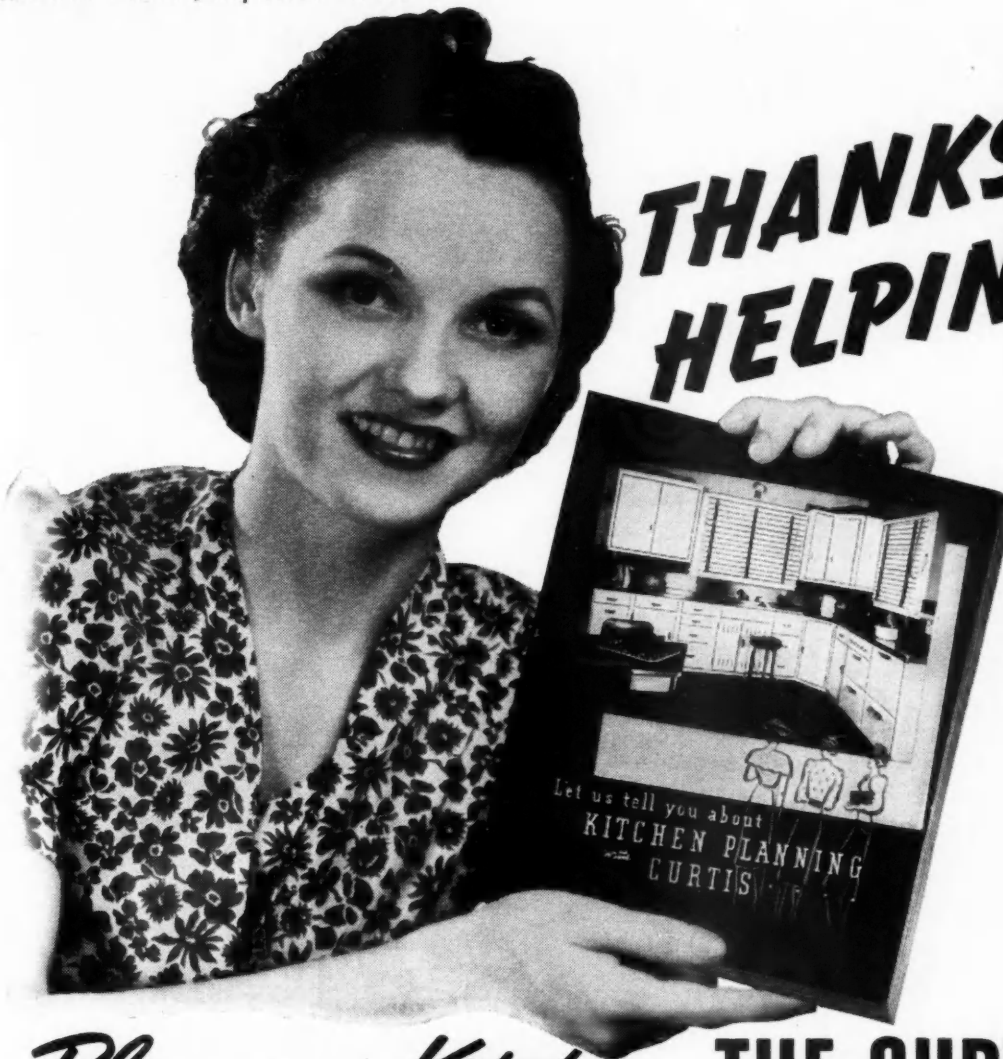
AB161 Trailmobile dump body trailers are illustrated in a new 4 page data sheet from The Trailer Co. of America, Cincinnati, O. Hauling economy for building material dealers and contractors is demonstrated convincingly.

AB162 "Whale" Tools and "Viking" Tools, made by The Forsberg Mfg. Co., Bridgeport, Conn., are illustrated in catalog No. 40, a loose leaf portfolio of 66 pages. These well-known brands of hack saws, coping saws, screw drivers, hand drills and scrapers are arranged conveniently for quick reference in this big, bright catalog.

AB163 The Lufkin Rule Co., Saginaw, Mich., is featuring its "Chrome Face Steel Tapes" in a collection of 12 data sheets just issued. These tapes, available in many forms and styles, have the "Easy-to-read Markings That Are Durable" which is said to be the outstanding development in the manufacture of measuring tapes.

AB164 Federal Metal Weatherstrip and proper tools with which to apply it are featured in a new 4 page circular arranged to carry the imprinted name and address of the local dealer or weatherstrip contractor. These are supplied by the Federal Metal Weatherstrip Co., Chicago.

FOR QUICK, CONVENIENT SERVICE, USE COUPON, PAGE 66



THANKS FOR HELPING ME

Plan my Kitchen.. **THE CURTIS WAY**

● That's what over 50,000 housewives have said to builders like you—said it *after* they've worked in and lived in their Curtis kitchens!

All around you there are prospects for new kitchens. Every woman who works in an out-of-date kitchen wants to make it smart and modern. Every housewife who moves into a new home insists that her kitchen be the most modern, most convenient room in the house.

Now Curtis, a kitchen planning pioneer, gives you a new revolutionary way to help these women plan their kitchens! This book is easier for you to use and easier for the housewife to understand. It will make your *selling* job easier, your *application*

job easier. It shows how cabinet after cabinet goes into place to provide an abundance of convenient space for storage.

There's a Curtis sectional *wood* kitchen cabinet unit for every purpose—many in several sizes. The housewife selects her own decoration scheme for Curtis cabinets. That's an important feature. And they are easy to redecorate later, if it is desired to change the kitchen color scheme.

Your Curtis dealer will show you the new, exciting Curtis kitchen planning book. Or return the coupon today for your free copy. (*If you live in Canada, write to W. C. Edwards & Co., Limited, 991 Somerset Street West, Ottawa, Canada.*)



1866
CURTIS
WOODWORK

CURTIS WOODWORK IS SOLD BY
RELIABLE DEALERS EVERYWHERE

CURTIS COMPANIES SERVICE BUREAU
Dept. AB-9K, Clinton, Iowa

Please send me your new Kitchen Planning Book.

Name

Address

City State

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use the coupon on page 66 for requesting further product information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to these manufacturers mentioning your profession, occupation or connection with building industry.

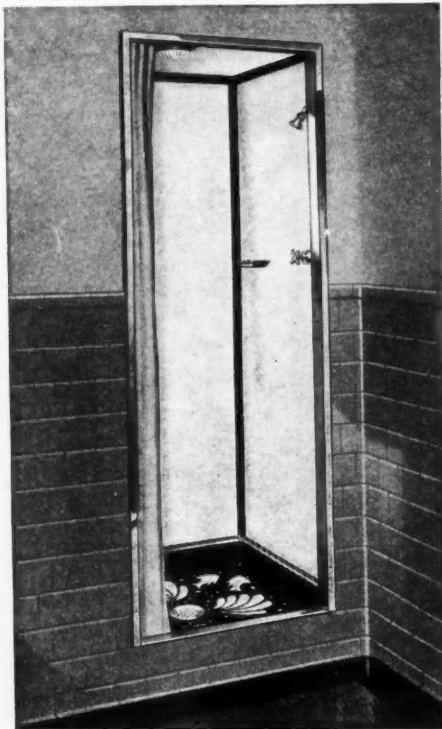
EQUIPMENT ITEMS FOR MODERN BUILDINGS

AB165 It is easy to insert any electric plug in the new "E-Z-Find" electric outlet offered by The Arrow-Hart & Hegeman Electric Co., Hartford, Conn. The curved or dished surface of the plate slides the plug blades to the exact position from any point in a wide area. It is ideal for the hard-to-get-at and out-of-the-way places as there is no hunting or fumbling when inserting the electric plug.



"E-Z-Find" Electric Outlet

AB166 The Weisway Cabinet Shower line of the Henry Weis Mfg. Co., Inc., Elkhart, Ind., has been expanded recently to include three built-in models. These are the VP Master, BW Master and Standard models, with headers, thresholds and integral entrance stiles specially constructed to accommodate a front facing of any type bathroom wall surface. A built-in installation is thus attained that is in harmony with the appointments of the finest bathroom at a cost well within the means of a modest home.



New Weisway Built-In Cabinet Shower

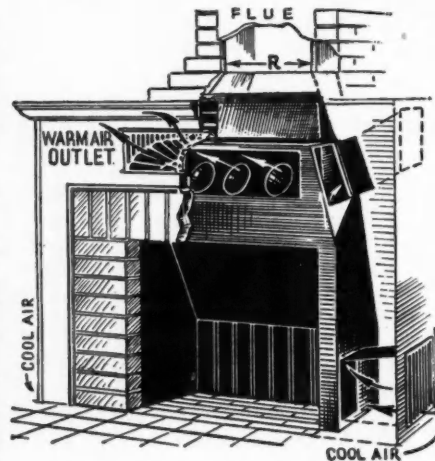
AB167 The Frantz Mfg. Co., Sterling, Ill., is out with a new product—the No. 10 Over-the-Top Complete Garage Door unit. This is the first



Complete Door Unit by Frantz

time that they have been in a position to furnish the trade with door and hardware complete, as illustrated here.

AB168 The Superior Heat Circulator of the Superior Fireplace Co., Los Angeles, is a complete form (from hearth to flue) built with proper



Cut-Away View of Superior Fireplace

angles and dimensions around which any design fireplace can be built. It consists of the firebox, smoke dome and built-in damper, saving fire-bricks and labor required to construct the ordinary firebox and throat. Back inner-wall made of 3/16" boiler plate iron; all seams and joints arc-welded. It operates on hot-air furnace principle—i.e., cool air drawn from floor-level intakes, passes thru heating chamber and out to adjoining rooms.

AB169 "How to give a home Automatic Oil Heat and Automatic Hot Water for less than they have ever cost!" is the intriguing title of a 12 page catalog from the Duo-Therm Div., Motor Wheel Corp., Lansing, Mich. It illustrates the several models of Duo-Therm Oil Burning Furnaces and Oil Burning Water Heaters.

AB170 The General Electric Steel Kitchen Cabinets and cabinet accessories are illustrated and described in a new 6 page data sheet carrying the title "All Electric Kitchens for Better Living."—The General Electric Co., New York City.

AB171 "Modern Kitchens Save Miles of Steps" is a 16 page portfolio from the Hoosier Mfg. Co., New Castle, Ind. It illustrates 8 model kitchens and then shows details of the individual units from which they were assembled. An insert on drafting paper for architects' use gives dimensioned plans and elevations of all units.

AB172 Garbage incinerators of a new type are featured by the Ewing Incinerator Co., Chicago, in a 4 page, 2-color data sheet entitled, "Why Architects, Builders, Owners Specify The Ewing-Dual-Draft Garburner." This is a gas burning unit available in 4 sizes.

AB173 "Crystal-Crome" and "Color-toned" cabinet hardware from the National Brass Co., Grand Rapids, Mich., is featured in a new handy reference catalog of 16 pages, selected from General Catalog No. 27. This hardware in smart colors is putting new sales appeal into kitchens. Color inlays include red, ivory, yellow, green, blue and black.

AB174 "Unique" window balances are presented in a very interesting and convincing way in a new 36 page catalog for architects, contractors and millwork dealers, issued by the manufacturer, Unique Window Balance Corp., New York City. This catalog shows the modern frame details for use with this concealed, torsion spring balance.

AB175 "The Law of Gravity in the Kitchen" is a 4 page data sheet on built-in flour bins featuring the Ritsche flour bin hardware known as the "Slidewell Bin Swing"—Ritsche Specialty Mfg. Co., St. Cloud, Minn.

AB176 The novel Plug-In Strip of the National Electric Products Corp., Pittsburgh, Pa., is featured in an interesting way in a new 8 page brochure entitled "671 Electric Outlets in This Home." Electrical convenience outlets every few inches all around the base boards of every room are easily secured in this house or in any house, this booklet makes clear.

Readers' Service Department Continued to Page 66

FOR QUICK, CONVENIENT SERVICE, USE COUPON, PAGE 66

FOR LIFETIME BEAUTY AND CLEANLINESS



...THE *All steel* KITCHEN

WHAT does a housewife demand you give her in a modern kitchen?

Beauty, of course, distinctive design, and convenience. She wants a clean, sanitary workshop—that will stay that way with a minimum of effort. A room that will be a pleasure to work in, that will serve her every purpose most efficiently—not make her a slave to its care.

And you can give her all that by using steel—a material she knows and trusts.

The attractiveness and durability of porcelain enameled steel stoves, table tops and refrigerators are well known. Now you can supply the same material for walls at moderate cost. Easily applied porcelain enameled

tiles make permanent, colorful walls that can be wiped clean with a damp cloth. Porcelain or stainless steel sinks, splashboards and work surfaces are impervious to ordinary abuse, assure lifetime cleanliness, retain their sparkling beauty indefinitely.

Steel cabinets can be made to fit any arrangement or design. They are insulated to assure quiet operation, they won't warp or sag, and their baked enamel finish is enduring and color-fast. Steel casements let in more light, require less care. And to complete the picture, steel venetian blinds last longer and are easier to keep clean. Even the valence boards may be had in steel.

To assure permanent client satis-



Look for the
U·S·S LABEL
It assures your client that the manufacturer has used the best steel for the purpose.

faction, specify an *all-steel* kitchen. And to make certain of quality require that products be marked with the U·S·S label. It is your assurance that the manufacturer has used the best steel for its purpose.

Write today for your copy of the new booklet, "Steel for Modern Living." You'll find its colorful pages an excellent help in selling the advantages of steel.

CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
 COLUMBIA STEEL COMPANY, *San Francisco*
 TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
 Scully Steel Products Company, *Chicago, Warehouse Distributors*
 United States Steel Export Company, *New York*

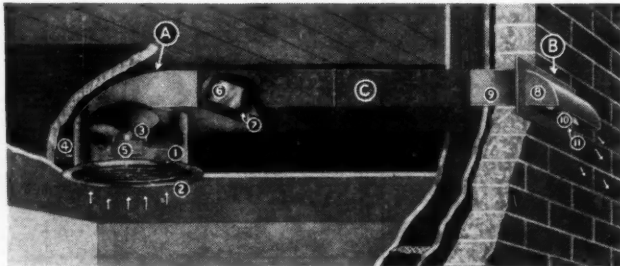
UNITED STATES STEEL

SERVICE TO READERS

EACH ITEM in this department is numbered for convenience of readers. Please use the coupon on this page for requesting further product information or new catalogs. Mail coupon to American Builder Reader Service, 105 W. Adams St., Chicago; or write direct to these manufacturers mentioning your profession, occupation or connection with building industry.

HEATING & AIR CONDITIONING PROGRESS

AB177 The new "Radia" ceiling type ventilator fan, called Model No. 8, has been developed by the Shepler Mfg. Co., 1302 Sheffield, Pittsburgh, Pa. It consists of two portions—a fan unit A, a hood B, connected by duct C (not furnished). The unit is suitable for kitchens, bathrooms, recreation rooms, dens, offices. It has a capacity of 650 cfm. of free air, operates on 110-volt 60-cycle A.C.; has a rating of 40 watts. It does not interfere with radio reception, and is arranged for control by a standard wall switch. Air enters steel housing (1) through a cast aluminum grille (2) to which is attached a 10" fan (3) and a motor that connects to power supply by a box (4). Lug (5) attaches housing to joist. Air delivered by the fan pushes open an aluminum louvre (6) that closes against a weatherstripped seat (7). Aluminum wall cap (8) on outside connects by a sleeve (9) to the air duct. Inside the cap is a second aluminum louvre (10) and a weatherstripped seat (11) through which air passes to outside. The space between the two gravity-closing louvres acts to prevent formation of condensation when the fan is not operating, and the construction is designed to prevent loss of heat or cold back drafts, it is claimed.



Ceiling Fan with Vent Duct to Outside

AB178 Smallest and newest of a line of four sizes of Superflex oil-burning air-conditioning furnaces, manufactured by Perfection Stove Co., Cleveland, O., is Model 90. Occupying only 2' square of floor space, this furnace is especially adapted to use in small homes without basements. Maximum fuel consumption, 65/100 gallon per hour; heating capacity, 70,000 B.t.u. at bonnet. Operates on high-low principle. Automatic controls and blower built-in and factory wired. Manufacturer makes also three sizes of oil-burning air-conditioning furnaces with combination three-stage oil and high-low blower control, and a line of three-stage gas burning furnaces, all featured as "non-stop" air conditioning.



New Model 90 for Small Home

AB179 Two large Psychrometric Charts—a simplified presentation of air conditioning data—has just been published by the Carrier Corp., Syracuse, N.Y. These charts make it possible to arrive at accurate solutions of psychrometric problems for all barometric pressures. Vapor pressure tables are included and 15 examples are worked out to show the use of the charts.

CLIP AND MAIL TO CHICAGO

Reader Service Department,
American Builder,
105 W. Adams St., Chicago, Ill.

(Sept., 1940)

Please send me additional information on the following product items, or the catalogs, listed in this department:

Numbers

Name

Street

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

OCCUPATION*

*Please note that occupation must be stated if full service is to be given.

AB180 Richmond Heatomat Gas Boilers for water, steam and vapor heating are presented in a deluxe 20 page brochure from the Richmond Radiator Co., Inc., Uniontown, Pa. Heatomat Hot Water Storage Heaters are also included along with a great amount of heating plant information in tabular form.

AB181 The Whiting Coal Stoker in 4 sizes for home and commercial installations is illustrated in a new 2-color catalog entitled "Have Care-free Springtime Comfort in Your Home Every Winter"—Whiting Corp., Harvey, Ill.

AB182 "Summer Air for Winter Comfort" is the title of a new 6-page data sheet presenting Anchor air conditioners for the modern home—Anchor Steel Furnace Division, Anchor Post Fence Co., Baltimore, Md.

AB183 The Gasmaster Rybolt steel gas-fired winter air conditioner is illustrated and described in a new 4 page data sheet from the Rybolt Heater Co., Ashland, O.

AB184 A new "sales manual" of the Peerless gas-fired floor furnace is a well done 24 page catalog with much helpful data on the installing and estimating of floor furnaces.—Peerless Mfg. Corp., Inc., Louisville, Ky.

AB185 The H. B. Smith Co., Inc., Westfield, Mass., offers 4 page data sheets in color on the new Smith Mills "25" Boiler for oil burning and for automatic coal firing.

AB186 Coleman Oil Heaters for the living room of low cost homes are presented in an attractive broadside from The Coleman Lamp and Stove Co., Wichita, Kan.

AB187 The Crane Conservoil heating unit for low cost heating for the small homes is demonstrated in a well written circular from the Crane Co., Chicago.

AB188 Ward Gas heating equipment is featured in an attractive loose leaf portfolio "Thirtieth Anniversary Catalog" from the Ward Heater Co., Los Angeles. The Ward floor furnace is a leader in this line.

AB189 "Yours For a Warm Friendship with Quiet May Oil Heating Equipment" is an 8 page brochure telling the story of May Oil Burner features and why and how they save money. Included in this new catalog are the May Oil Heating Unit and air conditioning unit.—May Oil Burner Corp., Baltimore, Md.

AB190 Toridheet Steel Furnaces are presented in a new 4-page data sheet with a companion piece giving information on the new Toridheet Air Conditioning Furnace.—Cleveland Steel Products Corp., Cleveland, O.

News of the Month

Building Activities and Meetings

July Residential Building Sets Eleven-Year High for That Month

CONTRACTS for 22,387 residential projects, valued at \$140,430,000, were awarded in 37 eastern states during July, according to F. W. Dodge Corporation. This is the largest July residential volume since 1929, and the second largest monthly total (May 1940—\$145,912,000) since that year. July 1940 volume shows a gain of 28.4 per cent in value, and a gain of 37.5 per cent in the number of projects awarded over July of last year.

In addition to setting a new July high, contra-seasonal gains were made over the June total of 20,584 projects valued at \$135,274,000. Residential contract awards declined in July during nine of the eleven years since 1929, the exceptions being 1929 and 1938. Continuance of the present trend indicates large fall volume, in which some of the monthly totals may exceed those of 1929.

Statistics for the four classes of construction are as follows:

37 Eastern States	July, 1940	July, 1939	June, 1940
Residential	\$140,430,000	\$109,330,000	\$135,274,000
Non-Residential	138,954,000	88,501,000	91,995,000
Public Works	85,681,000	78,960,000	74,433,000
Utilities	33,608,000	23,092,000	23,024,000
Total	\$398,673,000	\$299,883,000	\$324,726,000

Collins Heads Quiet May Sales

MAY Oil Burner Corporation, Baltimore, Md., has announced the appointment of Charles R. Collins as sales manager. He will be in direct charge of sales for all Quiet May oil heating equipment, Edward P. Hayes, former manager, having resigned.

Built-up 110-Foot Truss Uses 118 Pounds of Glue

BELIEVED to be the largest laminated beam ever built, this 110-foot giant, of cantilever design, owes its existence to Laux Self-Bonding glue, with which it was fabricated in the plant of the Speedwall Company, Seattle, Washington.

Using regular 2" x 10", not one piece of which was over twenty feet in length . . . an occasional scarf joint, and some

New Armstrong Salesmen Chosen

THE 1940 Student Salesman Class that will next year represent the Armstrong Cork Company's Building Materials Division in the field is composed of recent college graduates who have been picked from among 2,000 personally interviewed in 50 of the country's largest colleges and universities. During their eight to ten months' training course at the company headquarters in Lancaster, Pa., they will not only learn the theoretic-



ARMSTRONG'S new sales recruits in Building Materials Division.

cal aspects of their jobs, but will also don overalls for factory work and thus have an opportunity to study the more practical side. This group, together with new student salesmen for other divisions of the company, numbering 50 from 37 colleges, will for the training period, before assignment to active status, reside at "Armstrong Manor," an attractive country place north of the city.



GIANT wood truss, built up of 2x10's glued, under test in shop of the Speedwall Company, Seattle.

engineering ingenuity, it was possible with this glue to build up this sturdy structural unit in a few working hours, without the use of excessive pressures, clamping, etc. Unusual strength and comparatively low construction cost recommend this test beam for innumerable big jobs: industrial buildings, warehouses, assembly halls, airplane hangars, and piers.

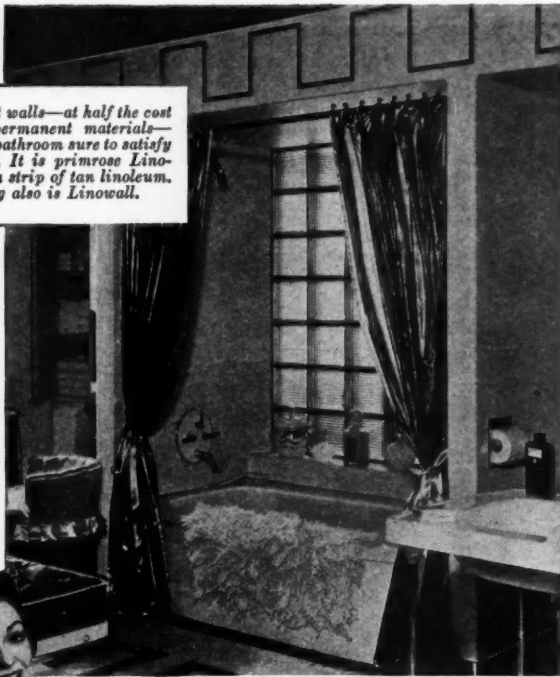
These beams have a high factor of safety because defects of the timber have practically no effect on the strength of the beam, since the effect of any such defect holds for that one lamination only.

The recipe called for 3,780 board feet of lumber, and 118 pounds of Laux Self-Bonding Casein Glue. Only enough nails were

required to effect adhesion while glue was setting. The beam is 110 feet long, 10 inches deep at the ends, 52 inches at center. It weighs 8791 lbs. It is capable of supporting a roof load of 65 lbs. per square foot of roof. (In the picture the beam is being tested under a load of 650 lbs. per lineal foot of beam . . . not including the 103-lb. Miss Edna Zwarg, secretary from I. F.

Laucks, Inc., Seattle, the glue manufacturers.) It is practically impossible to obtain large dry section beams. And when they do dry out after erection, they generally undergo quite severe checking, which, in turn, decreases their strength by setting up internal fibre stresses. Laminated beams such as this large one are entirely free from checking, hence a laminated beam is far stronger than a solid beam. Furthermore, it has been very difficult to get long panels, over 40 ft. or so, in length. There is no limit to the length to which beams can be made by the present method of laminating. To get a specially long beam in solid stock calls for a very special tree, whereas laminated beams can be made from regular stock lumber.

Permanent walls—at half the cost of other permanent materials—make this bathroom sure to satisfy any client. It is primrose Linowall with a strip of tan linoleum. Ceiling also is Linowall.



"I'll say I'm a lucky mother
... WITH WALLS LIKE THESE"

"I simply can't stop my youngsters from splashing the bathroom walls. Another habit they have is rubbing their soiled hands on the walls—but it doesn't bother me any more. Our new home has Linowall in every bathroom—thanks to my very smart builder."

HERE'S an example of a builder's understanding and solving a problem that faces most mothers. For wall maintenance can be a costly, tiresome job. But not when walls are covered with Armstrong's Linowall. With waterproofed seams, this linoleum-like material sheds water like a duck's back. This makes it ideal for kitchens and bathrooms, as well as for general household use. Finger marks, smudges, and ordinary stains wipe right away with mild soapsuds.

Linowall adds immeasurably to the appearance of any room. It is available in thirty attractive colors—plains and textures—and can be inlaid with designs in metal, glass, or linoleum. It is easily installed—will not crack, buckle, or craze under moderately settling walls. And, being resilient, Linowall can be formed around corners, which makes cleaning doubly easy. The cost? About half as much as other permanent materials. See "Sweet's" or let us send you color-illustrated, file-sized book—*Colorful Walls of Enduring Beauty*. Armstrong Cork Company, Floor Division, 1218 State Street, Lancaster, Pa.



ARMSTRONG'S

Linowall

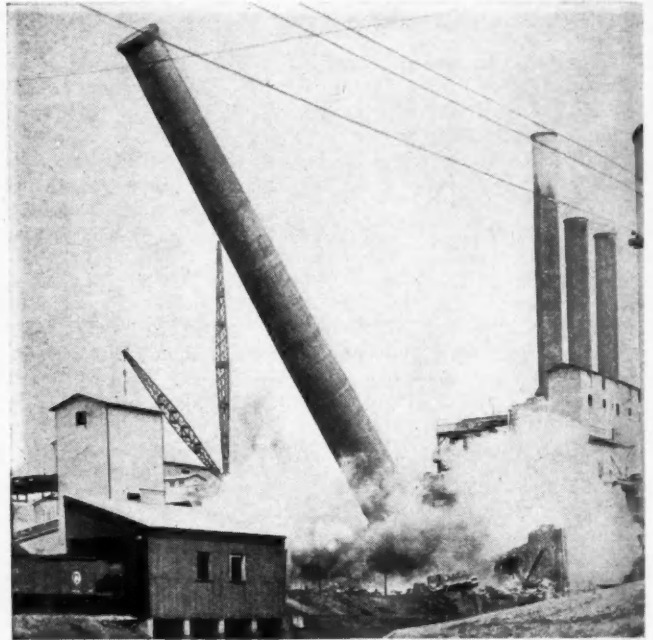
Made by the makers of Armstrong's Linoleum

Long Elected Koehring Company President

AFTER 33 years of service as president of the Koehring Company, Milwaukee, Wis., W. J. Koehring has resigned his position and will act as chairman of the Board. G. E. Long, who has succeeded Mr. Koehring as president, has been treasurer since 1932. He became associated with the company in 1928, and has also acted as secretary, sales manager and general manager in recent years.

C. A. Koehring remains as vice-president, and P. Graser has been elected secretary-treasurer.

Concrete Chimney Wrecked

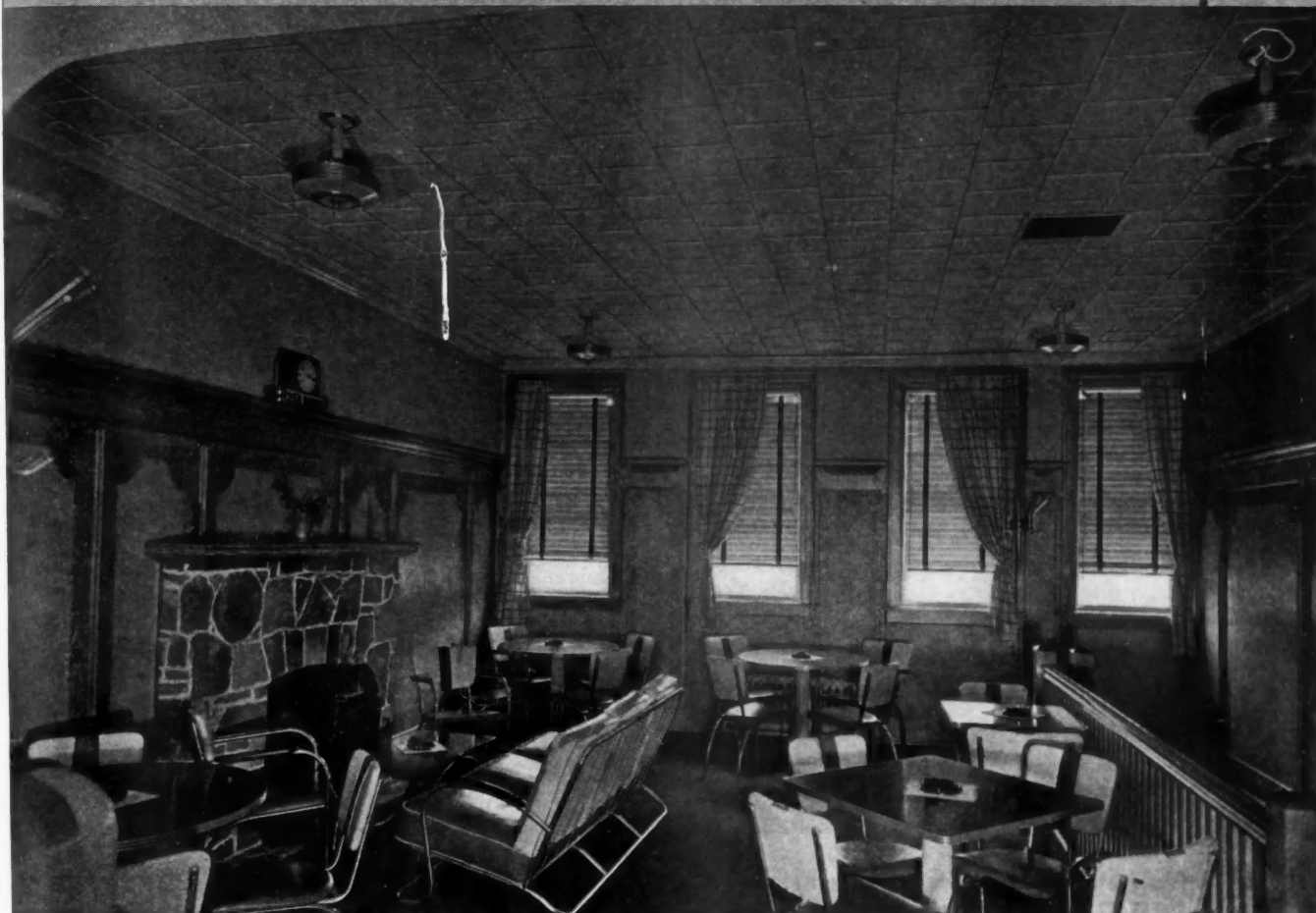


PHOTOGRAPHS above show the felling of the 200 foot reinforced concrete stack at the Hudson, N.Y., plant of the Universal Atlas Cement Co. This was built 31 years ago and was still in good condition when it became necessary to remove the chimney to make room for further additions and improvements to this plant which has recently been almost entirely rebuilt.

The chimney was almost completely surrounded by buildings and other structures, and there was only one place for it to fall without damage to some structure. Actually, the chimney fell almost

(Continued to page 72)

Get your share of *REMODELING PROFITS* with Temlok DeLuxe



ONCE JUST AN OLD RESIDENCE—now the popular cocktail lounge of Riley's Grill, Lockport, New York. Note how the smart upper walls and ceiling of white Armstrong's Temlok DeLuxe add beauty to this remodeled interior. Temlok Dealer: Lockport Lumber Yards. Wholesaler: Whitmer-Jackson Co., Buffalo.

THERE are big profits in remodeling jobs—especially for the builder who recommends and uses Armstrong's Temlok DeLuxe. This modern interior finish offers four features which your clients want—at one reasonable cost.

Temlok DeLuxe is *efficient insulation*. It keeps rooms warmer in winter—cooler in summer; cuts heating and air conditioning costs. Lighting cost is kept at a minimum, too, because of its *high light-reflection value*.

Temlok DeLuxe is *decorative*. It comes in five factory-applied colors which won't fade, and in panels, planks, and boards which may be combined in interesting and beautiful wall and ceiling patterns. Another quality of Temlok DeLuxe—*noise-quieting*—is particularly im-

portant in restaurants, theaters, recreation centers, and busy offices.

These features, plus the wide adaptability of this product in both new construction and remodeling, make Armstrong's Temlok DeLuxe a real aid in selling remodeling jobs. Installation is quick and inexpensive. Near-by stocks assure prompt delivery. For complete facts and samples, write to Armstrong Cork Company, Building Materials Division, 979 Concord St., Lancaster, Pa.



NEW TEMLOK DE LUXE STRUCTURAL UNITS

Give your clients approximately 50% more insulation at no increase in installed cost with new Temlok DeLuxe Structural Units—made in 3/4" thick panels and planks. The greater thickness also provides greater strength, permitting installations direct to framing members (when true, even, and properly bridged) or to furring strips, 16" on centers. Savings in installation cost can more than offset the slightly higher purchase price of this *thicker, more efficient* insulating interior finish.

ARMSTRONG'S TEMLOK INSULATION

DeLuxe Interior Finishes • Lath • Sheathing • Hardboards • Monowall


THE LADIES *will love you.*



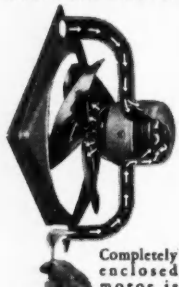
WHEN YOU INSTALL ILG KITCHEN VENTILATORS

"K.O.'s"
KITCHEN ODORS

- ★ WHISKS AWAY SMOKE, FUMES
- ★ FLUSHES OUT HEAT
- ★ ENDS GREASY GRIME



WITH AMAZING, SELF-COOLED MIRACLE MOTOR THAT "Breathes"—NEVER "GUMS-UP"



Completely enclosed motor is self-cooled by fresh outside air... stays clean... never reached by grease or smoke to interrupt service, shorten life! Low operating cost, no radio interference.

... and your popularity will be well-deserved! For ILG makes these nationally-advertised kitchen ventilators which lighten housekeeping tasks and save on decorating bills—an appliance in the kitchen which every home-or-apartment hunter looks for and wants. To ease-up your selling job on original plans or finished home, specify the ventilator which is trouble-free, weatherproof, supremely quiet, adjustable for different width walls, lives up to certified ratings and bears the famous ILG "ONE-NAME-PLATE GUARANTEE". Call in your nearest ILG sales engineer today, or write now for Bulletin H-511.

ILG ELECTRIC VENTILATING CO.
2852 N. CRAWFORD AVE., CHICAGO, ILL.
OFFICES IN 43 PRINCIPAL CITIES



Vitalized
VENTILATION
AND AIR CONDITIONING
★ AIR CHANGE... NOT JUST AIR MOVEMENT! ★

NEWS—

(Continued from page 70)

with mathematical accuracy. If there had been a stake 200 feet from the base of the chimney to mark the spot where it should fall, the chimney would have driven the stake into the ground. The kilns shown in picture were operating during the entire wrecking operation. The chimney fell as a single piece with only one transverse crack in the middle until it hit the ground.

The steel reinforcing bars showed no deterioration, indicating that moisture had not penetrated the concrete. The large steel reinforcing rods were not broken in the fall, the only breaks appearing at places where the rods were spliced. To all outward appearances the concrete was in excellent condition. Tests are now being made of this concrete made with cement of 30 years ago mixed according to methods of that time.

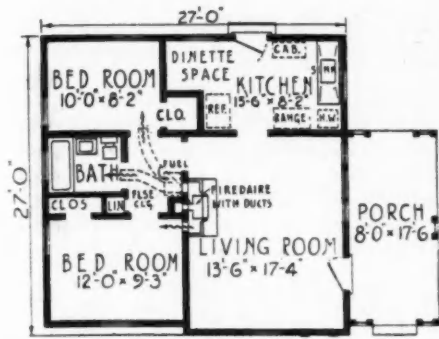
Measurements taken of this chimney were: base 22' x 22' x 34' high; concrete reinforced stack, 200 feet high; diameter, 19½ feet at base to 12-5/6 feet at top; thickness of concrete wall, 12 inches at base and 5 inches at top; lined with refractory brick for a distance of 70 feet; concrete in stack, 300 yards, weight of stack, 600 tons. The Lipsett Wrecking & Salvage Corp., Jamestown, N.Y., was the wrecking contractor, and Stephen J. Ryan, Norristown, Pa., explosive engineer.

Masonry Arches Without Centering
English develop concrete unit for bomb-shelters that lays up in a self-supported arch

A DEMONSTRATION was held recently at the Building Centre, New Bond Street (London), of a new form of building block, produced by the Building Research Station, a government department which works in conjunction with all war departments. The block makes it possible to build without timber or steel and is one of the most important products of this war, English builders say. These blocks are turned out in a mould and are being produced by the million. They can be used in the construction of air raid shelters, huts and pill boxes.



A product of the war in England is this concrete building unit for air raid shelters and the like. It is oblong in shape with a round spud inserted in the side to engage rounded contour of block ends in the next course of construction.



"Firedaire" Heats Cottage

AN INTERESTING application of "Firedaire," the new combination fireplace and furnace, developed by The Edwards Mfg. Co., Cincinnati, O., is shown in the attached photographs of an installation at Paris, Ill.

A summer cottage at one of the out-lying lakes was to be converted into a year 'round residence. But to put a basement under the house and install a furnace would have cost as much as the original budget for all remodeling purposes including the plumbing, etc. The Edwards' equipment solves this problem satisfactorily. Installed with a steel flue, this outfit costs less than a furnace.

The pictures show the unit after a winter's use. With the doors in place, it functions just like a circulating heating stove or furnace. Without the doors, it is a real fireplace. When wood is used,



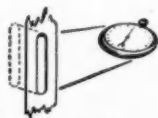
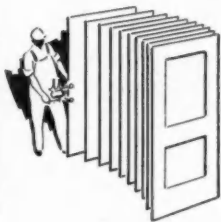
"Firedaire" in cottage; left, with furnace doors, right, with doors removed for use as open fireplace. Floor plan above shows heat distribution to bedrooms and bath.

the spark screen door, which is optional and fastens to the regular door hinge lugs and catches, makes the home safe from sparks.

Its performance this past winter was more than satisfactory. The owner was particularly enthusiastic about the economy, cleanliness and good heat distribution of this new fireplace heater, as well as its fine appearance.

There are various models for various purposes—as a fireplace, stove, furnace, forced air system or winter air conditioner.

4950 pounds less per day



A Mortise A Minute

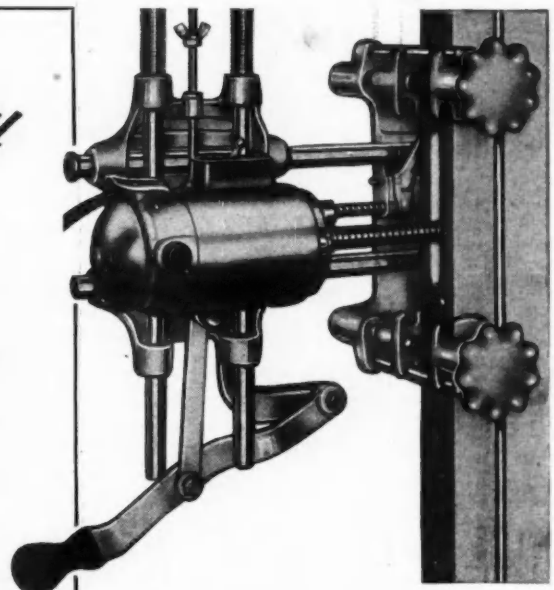
With the proper set-up, a good man can mortise 450 doors a day with this new Carter Lock Mortiser. A mortise a minute is not unusual. To make the job easier, Carter now offers a heat-treated aluminum housing which knocks off 11 pounds from the weight of the former Carter Mortiser.

Figure it out—that means 4950 pounds less per day to lift. Men can work faster with much less effort. It means some nice extra profits for you.

Simple, quick adjustments for setting depth, length and center of cuts. Lock size changeover can be made in 90 seconds.

Full 1 H. P. motor is ball bearing throughout. Speed of 18000 R. P. M. assures smooth cuts. Motor and frame slide on rods through bronze bushings. Uniform feed prevents overloading.

Send coupon right now for facts on this money making tool.



**New Carter Lock Mortiser
is fastest, lightest machine
on the market**

R. L. CARTER DIVISION

The Stanley Works
133 Elm St., New Britain, Conn.
Please send me complete literature and prices
on the new Carter Lock Mortiser.

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Firm
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FURNACES

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Winter Air Conditioners



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Your Clients
in Every Particular

Builders will find in the complete Moncrief line a type and a size for every warm air heating and winter air conditioning need—all moderately priced and of the finest design, construction and appearance. Furnaces are made in both cast and steel; winter air conditioners in specialized types for either coal, oil or gas. For big value, high efficiency and low operating cost, you can rely on Moncrief. Get in touch with the Moncrief dealer near you.



Send for Literature

Clearly written, profusely illustrated with cutaways, diagrams and charts. Of interest to every builder, architect and engineer.

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

Plywood Association Appoints Agricultural Field Man

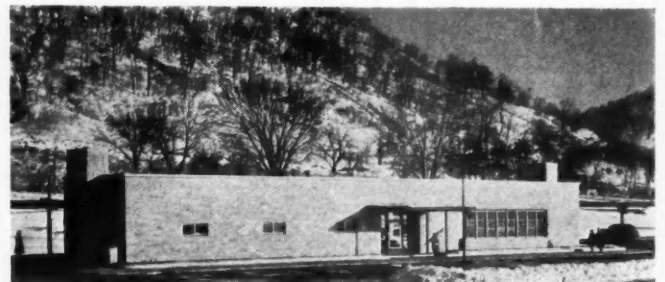
THE Douglas Fir Plywood Association has just announced the appointment of J. D. Long as its agricultural field representative, with headquarters at Kansas City, Kans. Mr. Long's primary work will be directed toward research in the use of plywood on the farm to produce better and more economical housing of all types. In this connection he will visit farming districts throughout the country, consulting with farmers and lumber dealers alike.

Mr. Long is particularly well qualified to assist in solving building problems on the farm. For the past 18 years he has been assistant professor of Agricultural Engineering at the University of California College of Agriculture at Davis, Calif. During that period he gave special attention to teaching and research in farm structures of all types, including dairy barns, fruit drying equipment, farm houses and grain storage.

He is a member of the American Society of Agricultural Engineers and has served on several of their national technical committees. He is also chairman of the A.S.A.E.'s Division of Farm Structures. During this time he wrote several technical bulletins for the University of California, and had several other articles published by farm papers. A further tribute to his ability lies in the fact that several commercial organizations have consulted him on difficult structural problems.

First Streamlined Railroad Station

A FAR cry from the unfriendly barn-like railroad depots of the past is the new station designed by Architects Holabird and Root for the Chicago, Burlington and Quincy R.R. at La Crosse, Wisconsin. Said to be the first American station that harmonizes with the streamline trains which pass through it, the new depot is located in the best residential section of La Crosse and is designed to fit its surroundings. The lounge, shown below through the vast plate-glass windows, and occupied by skiers, boasts such features as an open fireplace, upholstered lounging chairs, pastel-painted walls and acoustic ceiling, and so entranced La Crosse residents that several women's groups asked for permission to hold their teas in the station.



ABOVE: Streamlined railroad station on the Burlington route at La Crosse, Wis. Below: Looking into lounge from outside.



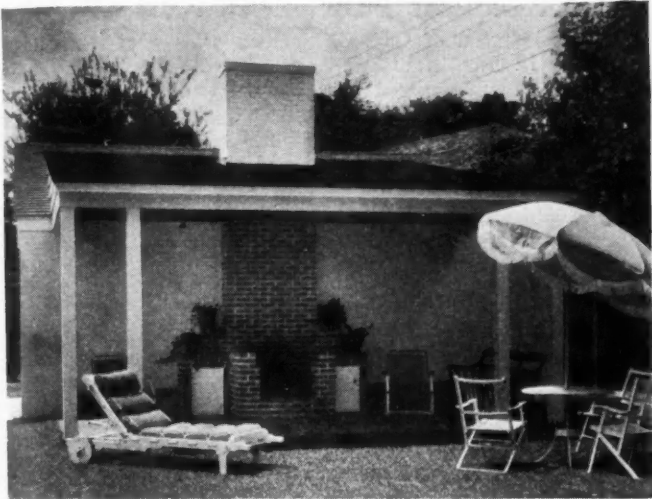


Photo by Matchett

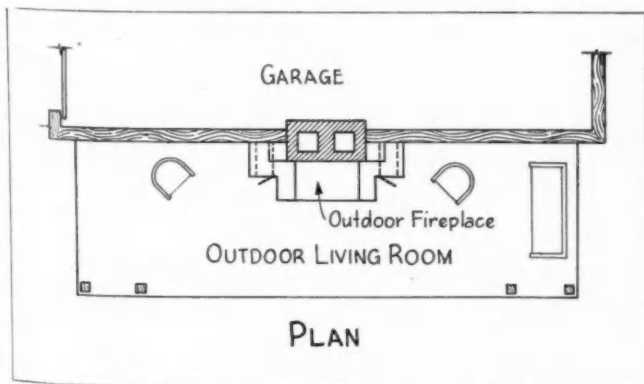
Summer House with Open-Air Fireplace

IN River Oaks development, Houston, Texas, one expects to find beautiful, livable and attractive homes—done just a little differently and possibly a little better than most places. Under the energetic direction of Hugh Potter, this home community has consistently been first in a lot of things.

Here is a new “first”—an outdoor summer house with open-air fireplace built against the side of a garage. The garage sets far back on a beautiful lawn, and the side facing the garden has been extended, as shown in the picture above, with an artistic and attractive summer haven. This is part of the new and impressive George D. Stevens home designed by Harvin Moore and Hermon Lloyd.

This attractive summer spot is enclosed at one end, has a pleasant flagstone floor and is dominated by the large fireplace and grill for outdoor cooking. The garage wall is of brick painted white, and the fireplace chimney projecting above the roof is also painted white. The exposed portion of the fireplace and chimney itself remains the natural red brick color. On either side of the fireplace are small cupboards for holding utensils, wood or other supplies.

More and more people are interested in outdoor living these days—especially in such a desirable climate as is found in Houston and in such attractive surroundings as are found in River Oaks. This outdoor haven is one that adds an attractive selling feature to the house without very large extra cost. It also serves to make the garage a more attractive structure.



PLAN showing how summer house utilizes side of garage for wall.

GET YOUR COPY OF

“How to Finish and Maintain Hardwood Floors”

● It explains the methods of finishing and maintaining hardwood floors recommended by E. L. Bruce Co., famous hardwood flooring maker. Tells the secrets of getting a superior finish on both old and new floors. Tells how to save time, money and materials. And how to clean, wax and polish floors to new lustrous beauty.

Also explains the revolutionary new “Bruce-Way” finish that resists scratches. The finish penetrates and becomes a part of the wood. Produces a lustrous sheen that lasts for years. Only one application is needed instead of two or three as with other methods. Bruce Finish used in combination with Bruce Tuf-Lustre Wax produces results unequalled by any other method.

Send the coupon for your free copy of “How to Finish and Maintain Hardwood Floors.” See your dealer for Bruce Floor Finish and Bruce Tuf-Lustre Wax. If he can't supply you, order direct giving your dealer's name.

THIS TEAM WORKS!



1. Bruce Floor Finish penetrates into the wood and binds the fibres with a tough elastic seal . . . sets the grain and brings out the full pattern.
2. Bruce Tuf-Lustre Floor Wax completes the job. This blend of fine waxes fortified with resins does not separate or settle out. Gives quick response to light buffing and produces a beautiful, longer-lasting finish.



SCRATCH TEST PANEL MAKES “BRUCE-WAY” JOBS EASY TO SELL

In just a flash with this “Scratch Test” Panel, you can dramatically prove the superiority of this amazing finish. Half is finished the new “Bruce-Way.” The other half is finished the ordinary surface way. Scrape a coin across both finishes. See how the ordinary surface chips away while the “Bruce-Way” finish is unharmed.



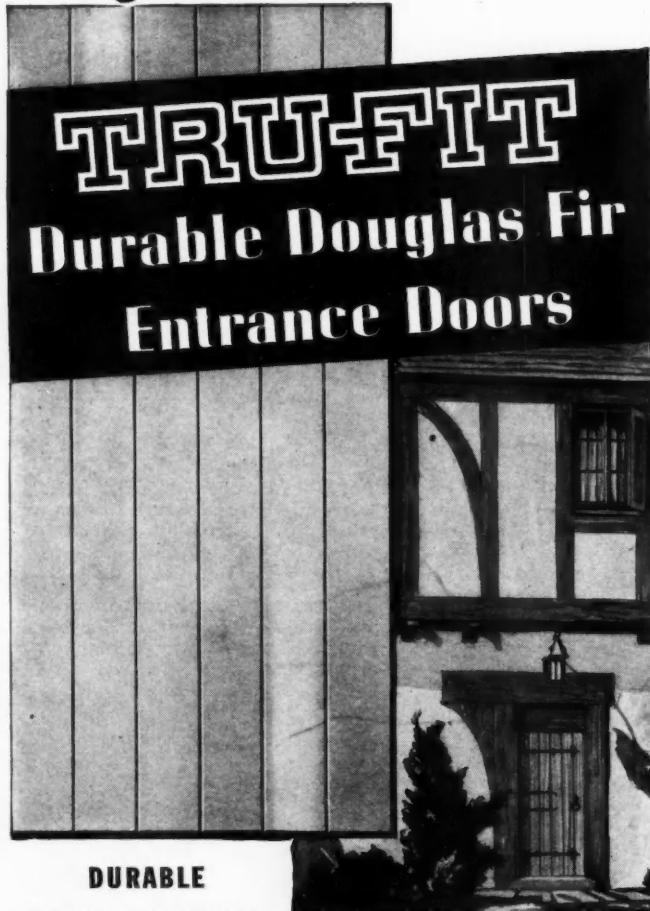
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E. L. BRUCE CO.
1626 Thomas St., Memphis, Tenn.
Gentlemen: Please send me free copy of “How to Finish and Maintain Hardwood Floors.” Also “Scratch Test” Panel.

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

There's a style for every house you build!



**DURABLE
FACTORY-FITTED
SCUFF-STRIPPED
TRADE-MARKED
PACKAGED**

★
*Save you time,
work and money!*

● If you want distinctive entrance doors for your homes that will also give more years of service and save you work, order Tru-Fit Douglas Fir Entrance Doors from your dealer. These doors are durable because they're made of Douglas fir, the wood that lasts longer. Carefully fabricated by skilled craftsmen, they're pre-fitted at the mill to speed hanging. They're also packaged and scuff-stripped to assure delivery of a perfect door to you. Select one of the 27 beautiful designs for your next house. You will find that it costs no more than other good doors to buy . . . *costs less installed.* For color catalog, write Fir Door Institute, Tacoma, Wash.

★ You can order all stock Douglas Fir doors pre-fitted at slight extra cost and grade-marked.

Mack Succeeds Babcock in FHA

THE appointment of Curt C. Mack as director of the Underwriting Division of the FHA to succeed Frederick M. Babcock has been announced by Federal Housing Administrator Stewart McDonald. Mr. Mack will be in charge of and responsible for all underwriting and appraisal activities in every division of the FHA under the direction of the Administrator.

The resignation of Mr. Babcock as assistant administrator and director of the FHA's Underwriting Division became effective on Sept. 1. Mr. Babcock leaves the FHA to become an executive of Allied Building Credits, Inc., loan affiliate of the Weyerhaeuser Lumber Company of St. Paul.

Mr. Mack, who takes Mr. Babcock's place, has been director of appraisal for the Large-Scale Rental Housing Division of the FHA for more than a year. Previous to that, he acted as rental housing manager for Zone 4 covering the Southwest and parts of the Middle West.

Certain-teed Names Galloway, Hamrick

THE appointment of Russell R. Galloway as general sales manager has been announced by the Certain-teed Products Corporation. Mr. Galloway, who has been district sales manager in the Chicago office of Certain-teed since 1931, will take over his duties immediately at the New York offices of the company. Mr. Galloway became associated with the Certain-teed company in 1923 as a credit clerk in the Chicago offices, after previous work for the National Biscuit Co.

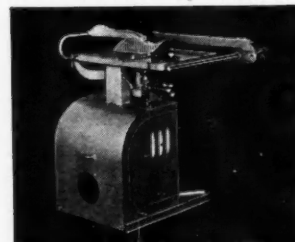
Also, G. H. Hamrick has been appointed Chicago district sales manager, going from St. Paul where he has been in charge of Certain-teed sales since 1937. He was first employed by Certain-teed in 1923 as a salesman in Chicago. In 1926 he was made sales manager in Los Angeles, leaving in 1929 to head the Milwaukee office.

Sheet Copper Termite Shields Approved

THREE-ounce copper-armored Sisalkraft is now approved by FHA for use over the top surface of foundation walls for termite shields where there is full excavation. This material

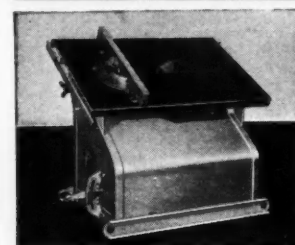


New Saws that "top" them all in speed, accuracy and low price.



C.M.C. Kost Cutters fill a REAL need and BUILDERS are quick to see THEIR MANY improvements.

KOST KUTTER JR. shown left is a little wonder on the job. Has 20" x 27" tilting table—powered with 4 cycle 3.6 H.P. Briggs & Stratton Engine. Plenty of power to cut 3/4" stock.



KOST KUTTER SR. at left has no equal for accurate speed sawing. Big 30" x 48" tilt-top table. All steel welded construction. 6 H.P. air-cooled engine or electric motor. Streamlined and saw dust proofed. 14" Saw blades. Takes up to 4" stock. Also the big C.M.C. Power Sawyer saws up to 6" stock with 18" blade.

WRITE for new C.M.C. catalog showing latest in concrete, plaster, mortar and bituminous Mixers, Pumps, Power Saws, Hoists, Carts and Barrows.

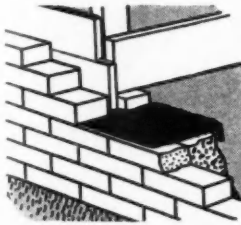
CONSTRUCTION MACHINERY COMPANY
WATERLOG, IOWA

consists of a thin electro-deposit copper sheet weighing 3 ounces to the square foot. To give it the necessary strength for effective application, it is reinforced by crossed sisal fibre, bonded with special asphalt between the copper sheet and a kraft paper backing.

According to FHA engineers, this reinforced copper sheet provides approved termite protection when laid over the top of the foundation wall on any building that is fully excavated, or any portion of a building that is excavated. It is not necessary to provide a projecting lip of copper beyond the foundation when full excavation occurs. All FHA divisional supervisors in sections where termite protection is required have been advised of this new ruling.

Copper-armored Sisalkraft has been used for damp-coursing between foundation and sills, since it provides a permanent and impervious moisture barrier. Now that the FHA has approved this application as acceptable termite protection, it serves two practical purposes at low cost.

THIS application of Copper-Armored Sisalkraft provides both an effective damp-coursing and approved termite protection in all fully excavated buildings.



Create Illinois Institute of Technology

FINAL action on July 24 heralded the creation of Illinois Institute of Technology through the merger of Armour Institute of Technology and Lewis Institute. The action, in the form of the first meeting of the Board of Trustees of the new institution and the election of officers, came almost ten months to the day from the time that consolidation plans for the two institutions were first announced.

Henry T. Heald, 35 years old, for two years president of Armour Institute of Technology, was elected president of the new institution, according to formal announcement from the Board of Trustees. Mr. Heald becomes the first president of the new school, destined to be the center of engineering and scientific education and research in the United States.

Fastest and Most Powerful ELECTRIC HAMMER ON THE MARKET



If you want to save real money and speed up work try the new

No. 25 *SYNTRON* Hammer

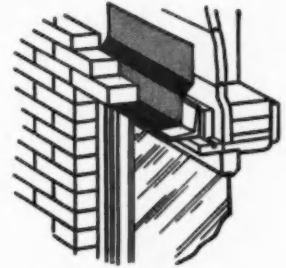
Drills up to 2" holes in concrete. Cuts openings thru floors and walls. Vibrates concrete forms, etc.

SYNTRON CO., 618 Lexington Ave., Homer City, Pa.

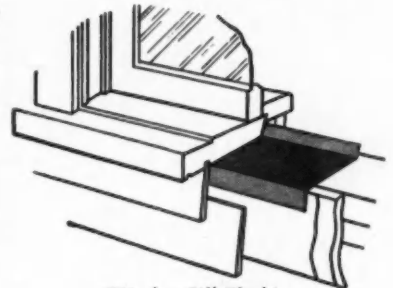
Best by Test!

Reinforced "Electro-Sheet" Copper

Recent tests on sheathing papers showed that metallic products, including four Reinforced "Electro-Sheet" types, were the only materials impervious to water and water vapor both before and after accelerated aging!



Window Head Flashing



Window Sill Flashing

The economy of Reinforced "Electro-Sheet" makes it ideal for use in solving many varied problems in water and damp-proofing. It affords a new way to achieve the positive and durable protection of copper at low cost.

Anaconda "Electro-Sheet" Copper, bonded to building papers, fabric, or asphaltic compounds, is extremely flexible and easy to install. It is available in rolls of various lengths, and in widths up to 60"—with the copper in thicknesses of .0013", .0027" and .004" (1 oz., 2 oz. and 3 oz. per square foot).

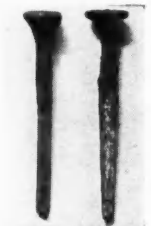
Examine Reinforced "Electro-Sheet" products for yourself. Just ask for free samples and names of manufacturers.



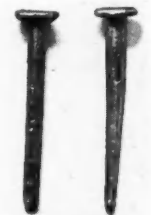
Accident on Cape Cod...



... Became the Perfect Test Case for Maze Nails



Eight years of salt-laden Cape Cod weathering did this to ordinary shingle nails!



But Maze Zincluds, dipped in pure molten zinc, remained sound and serviceable!

The builder of this Cape Cod home (Barnstable County) recognized the superiority of Maze Zinclud nails and used them . . . but mixed in by accident on the job were a quantity of ordinary shingle nails. Unfortunate for the owner, for the shingles on a portion of his house went bad. But fortunate for us, because it provided the perfect test case for Maze nails! Examination of the shingles on the home revealed that the loose and rotten shingles had been laid with nails which rusted—whereas the remainder of the shingles were held perfectly by Zinclud nails. We procured samples of each type of nail after eight years of weathering on the Cape . . . we photographed them . . . and reproduce these pictures so that your own eyes will prove to you the superiority of Maze Zinclud nails. Could any test be more convincing? Is it worth the chance and risk to use any nails but MAZE, when the amount to be saved averages only \$2 per roof?

Double the Life of Your Shingle Jobs! AT A COST OF ONLY \$2.00 PER ROOF

Your shingle jobs will last longer and your reputation as a builder will be safeguarded. Yet the extra cost of a roof laid with Maze Zinclud nails averages only \$2 per roof. That's so little to pay for so much "roof insurance." The wise builder uses Zincluds!

W. H. MAZE COMPANY • PERU, ILLINOIS



Celotex Rock Wool Counter Display

AN UNUSUAL combination sample and counter display of the new Celotex rock wool blanket has been prepared by The Celotex Corporation of Chicago for the use of its dealers. A full width section of the blanket is displayed in a special box which has a drop front to show a cross section of the rock wool. Information about the product's advantages is carried on the inside of the cover which is held upright by tapes.

The blanket has a moisture-proofed membrane on one surface and is enveloped in strong creped Kraft paper on the opposite side to permit free breathing action toward the outer air. The rock wool fibres are also specially treated against moisture. The blanket is available in thicknesses of approximately one, two, and three inches and in rolls from 62 to 103 feet in length.

INSULATION display.



NSHD Design Opened Near Washington

THE first National Small Homes Demonstration 1940 low-cost home to be erected near Washington, D.C., has been opened for public inspection by the Eisinger Mill & Lumber Company of Bethesda, Md., builders. This house is one of more than 1200 NSHD homes built throughout the country this year. The house, reflecting economies in construction and presenting a compact, though not crowded appearance, is the story-and-a-half 40-2 design. The home contains two bedrooms, living room, kitchen-dinette, and bath.

"The Zipper"

FOLDING
STAIRWAY
Insulated Against
Heat and Cold!

FOR ROOF
OR ATTIC



WRITE FOR
DETAILS
AND
SPECIFICATIONS

An air space between the closing panel and cover insulates against heat or cold and keeps dust off the stairs while closed.

The cover, controlling the stairs is so perfectly counterbalanced that it requires little effort to operate it. Nothing to get out of order. A counter spring under the steps controls the weight of the lower section and aids in lowering and raising this part of stairs.

The Zipper Folding Stairs can be left open for days at a time without any danger of cables or springs losing their tension since no drums or cables are used to operate it. Shipping weight 150 lbs.

THE MARSCHKE COMPANY
551 UNIVERSITY AVE., ST. PAUL, MNIN.

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

**Typical Response to American Builder
 Questionnaire to Chambers of Commerce**
 Hartford, Conn.

To the Editor:

Your letter of May 29 regarding the building outlook in Hartford:

The building of homes for industrial workers is increasing rapidly, there being several hundred in the process of construction. Vacancies and rents are both normal, and the supply of new homes is keeping up very well with the demand. Our local building industry group could expand its operations to take care of a substantial increase in building activity. Our number of idle building-trades mechanics is normal.

Industrial plants in our city are being stimulated by American rearmament. Plants are busy, running more than one shift a day, using all available space and machinery. Production will increase with increased rearmament, but the plants would need additional buildings and machinery if they hoped to handle it all. Payrolls are high.

We have no idle industrial man-power at present, and have some influx of new workers, though the number is moderate. We do not anticipate a housing shortage, however, nor the need for government "cantonments." Our local private building industry group is adequate to care for any additional housing facilities that might be needed.—THE HARTFORD CHAMBER OF COMMERCE, Inc.

(Continued to page 80)



ONE PIECE PREFORMED SINK WELL FRAMES

**NO VISIBLE JOINTS OR WELDS!
 WIDE CHOICE OF TRIMS FOR ANY SINK, ANY SIZE**

Seal edges of sink top coverings permanently watertight, permanently sanitary, this quick, easy, economical way—and add lasting beauty to every installation. B & T seamless, ready-to-install sink well frames are preformed in a wide choice of lustrous metal trims bearing the Chromedge trademark. For cabinet-top sinks of any type or size; for coverings of any gauge or thickness; for flush-type or underslung installations. Write for details today — get better jobs with preformed sink well frames trademarked —

CHROMEDGE
 TRADE MARK REG. U. S. PAT. OFF.
 The B & T FLOOR CO. COLUMBUS, OHIO

The WESTERN PINES*
 help houses sell



• Mr. A. F. Mathews of West Brighton, Staten Island, N. Y., who built the LIFE 1940 house No. 1, shown in the Western Pines advertisement in the July 1st issue of LIFE, reports this house sold before completion.

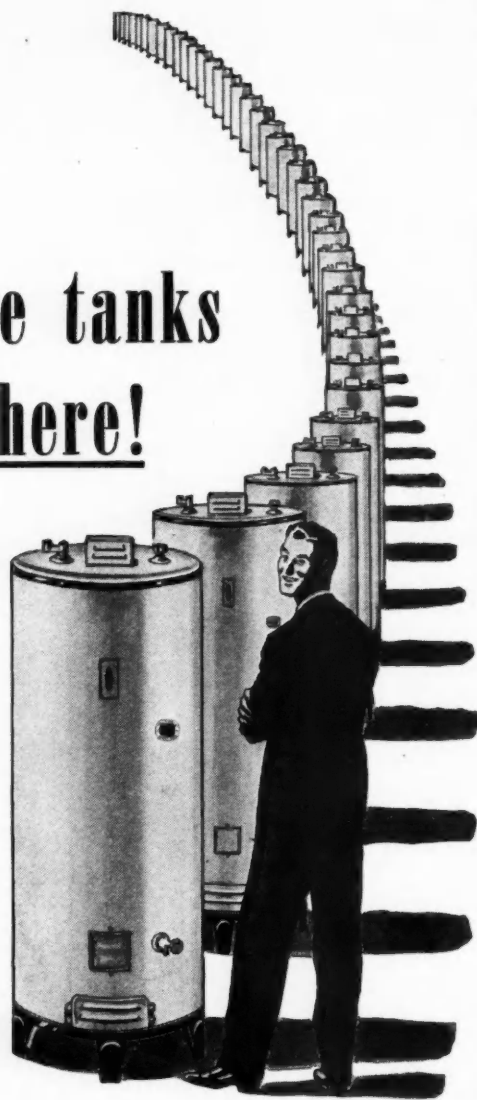
He says, "One of the features contributing to the quick sale of this property was the excellence of the woodwork. Western Pines were used throughout—for siding, cornice, exterior and interior trim, doors, windows, blinds and built-in fixtures. I know of no other soft woods that respond so perfectly to saw, plane and chisel, or that take paint and enamel so satisfactorily."

Western Pine Association, Yeon Building,
 Portland, Oregon

**THE WESTERN PINES WILL DO YOUR
 NEXT JOB BETTER—TRY THEM**

*Idaho White Pine *Ponderosa Pine *Sugar Pine
THESE ARE THE WESTERN PINES

These tanks
are here!



**Porcelain enameled inside
and out on ARMCO Ingot Iron**

You can get them now and be ahead of the trend. You can install them now and have a new selling point when you tell prospects that their hot-water tanks will be porcelain enameled *inside* and *out!*

These new tanks not only look better but last longer. Their handsome appearance makes them equally suitable for kitchenettes or basement recreation rooms. Being fully lined with porcelain enamel, there is less chance of corrosion, leaks or rusty water.

The price is moderate, and low up-keep cost makes it possible to offer a fine tank within reach of every budget. All code requirements fully met. When the tank is porcelain enameled on ARMCO Ingot Iron, the familiar ARMCO label will convince customers of basic quality. Write us. The American Rolling Mill Co., 2481 Curtis St., Middletown, O.



ARMCO INGOT IRON
A NAME KNOWN TO MILLIONS

• Sinks, Lavatories, Bathtubs and laundry tubs porcelain enameled on ARMCO Ingot Iron are popular, long-lasting in luster and service, and carry the familiar ARMCO label as an extra talking point.

LETTERS—

(Continued from page 79)

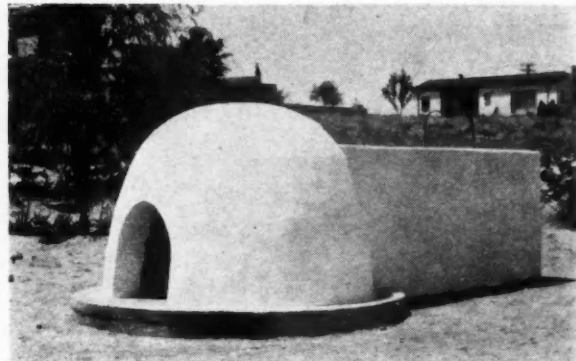
Wants to Distribute "Warning"

Rochester, N.Y.

To the Editor:

My attention has been called to an editorial signed by Mr. Dunn entitled "A Warning from France" which appeared in the July 1940 issue of the *American Builder*. I should like several reprints of this article. If there is any cost in this connection, please let me know. This is a wonderful article and should be spread throughout the United States.—GEORGE DIETRICH, President, George Dietrich Co., Inc.

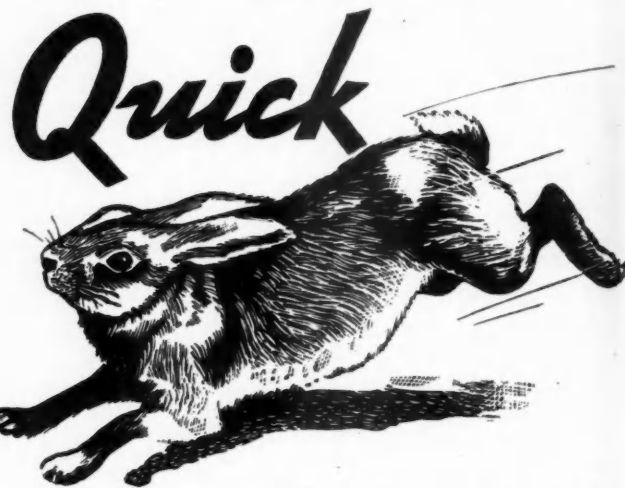
Builds "Southwest" Outdoor Fireplace



Albuquerque, N. M.

To the Editor:

You may be interested in having the enclosed snapshot for your collection of outdoor fireplaces and barbecue pits. This is a combination one which I designed to harmonize with my new



WITH LAUX REZ as step number one — beautiful wood finishing is a quick, easy job. Laux REZ seals and primes in one application . . . minimizes moisture absorption, controls grain raise, checking, decay. Easy to use as it comes from the can, REZ dries fast and hard . . . provides an ideal base for paint, stain, enamel. Millions of gallons used by contractors and painters on fir plywood, doors, sash, floors, millwork, etc. Ask your dealer today.

LAUX SALES COMPANY
Seattle • Los Angeles • Minneapolis
Chicago • Dallas • New Orleans
Portsmouth, Va.

Also WHITE REZ

home which follows the Indian or Pueblo type architecture used in the Southwest or Indian country.

The cone part is the Indian bake oven. They bake their bread by heating, raking out the coals, and closing openings. I have added the long rear part to use as a barbecue pit. We use the front part for the outdoor fireplace. We barbecue the meat with live coals and not flame. A fire is built in the oven part and when that is burned to coals we carry them in a shovel and place them through an opening in the end of the pit part and under the meat.

There is a concrete slab which acts as foundation and floor for both parts. The walls are eight inches, made of cull brick, with air space between. There is a hole in top of oven part that acts as a flue. The two parts have a partition, and there is an arched opening in the pit part similar to the one in the oven part. The pit is open at the top and the meat rests on steel bars covered with chicken wire.

While the meat is cooking the guests enjoy the fire in the cone part. Instead of building the usual rustic type fireplace or pit I decided on this one to harmonize with the architecture in this part of the country.—R. B. WAGGOMAN.

"Hidden Fees" Upset Home Prospects

Kingston, Pa.

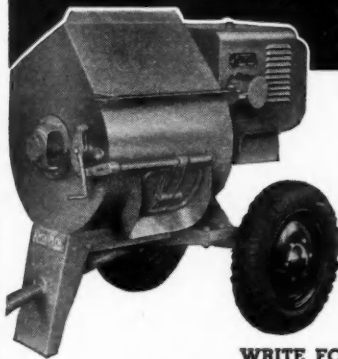
To the Editor:

My attention was called to the late edition of the *American Builder*, containing photos and plans of 129 good homes to build today, in which page 5 describes the terms upon which FHA mortgage loans can be had.

As a matter of personal information, why is it that practically all explanations regarding the FHA plan fail to advise that not only must the man who desires to build a home have a clear deed to his property, but he also must have approximately \$152 for an immediate cash outlay, payable to the lending agency before his loan is completed.

While our corporation is not in the building business we do sell lots to people who, in most cases, plan to take out such loans
(Continued to page 82)

NON-TILTING PLASTER-MORTAR KWIK-MIX 6-P

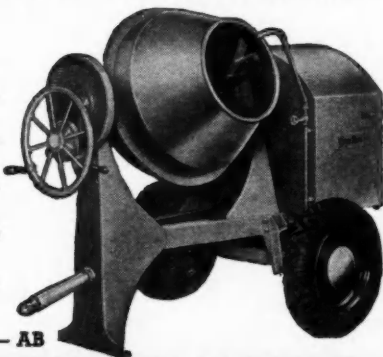


Fast discharge — 7 seconds — no tilting necessary — weighs only 850 pounds — air-cooled engine — V-belt and worm drive.

WRITE FOR BULLETIN NP — AB

3 1/2-S TILTING KWIK-MIX

Side discharge — anti-friction bearings — welded construction — discharge either side — spring mounting.



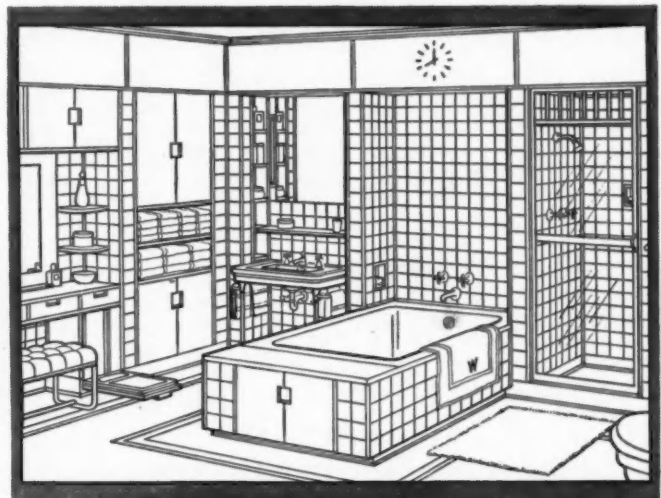
WRITE FOR BULLETIN SD — AB

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

MASONITE PRESDWOOD TEMPRTILE

... NO NEED FOR A SHOE HORN

WHEN there's just so much in the budget, and you're using the proverbial "shoe horn" to try to squeeze in all the extras, let Masonite Presdwood Temprtle help you save dollars. It's the practical, inexpensive way to get the tile effects you want — without sacrifice in construction quality. This hard, all-wood board is there "for good," once it's applied. There's no breakage, and it won't shrink, warp, split or crack when used according to instructions. The bathroom shown here has been designed to illustrate the flexibility of Presdwood Temprtle, and the unusual effects that can be achieved at exceptionally low cost.



FOR UTILITY ALONE, this bathroom deserves special mention. There's ample space for towels and toiletries without that "store-room" air. The uses of Presdwood Temprtle are in good taste. And notice how easily the board can be cut to fit into small places to give an over-all effect of spotless smartness. For this room, the board could be enameled any pastel shade with a contrasting color for striping. The framing around the tub not only provides a seat for foot bathing, but also allows an extra cabinet for soaps and other accessories.



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

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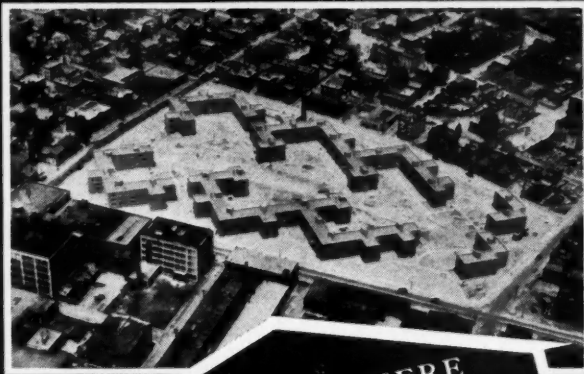
IF YOU would like to examine a sample of Masonite Presdwood Temprtle FREE, just fill out and mail this coupon to:

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111 W. Washington St., Chicago, Ill.

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Address _____
City _____ State _____

HOPE'S WINDOWS

1818 The Name Guarantees 1940



\$10,000 SAVED HERE
 In 46 low-cost housing projects, over \$900,000 was saved by using Steel Windows rather than wood. Amazingly low priced, Hope's Steel Windows come Bonderized and primed, ready to install with less expenditure of time, labor, money.
Pictured: New Totene Court Project, Cambridge, Mass.



LOW COST + SALES APPEAL
Was the Reason Here!
 Hope's Windows put costs down and sales appeal up. Prospective home buyers are delighted with their added beauty—better light and 100% ventilation—safer, easier cleaning—effortless operation—long life without upkeep expense. Builders like the low initial cost, ease of installation and variety of effective arrangements possible with Hope's Bonderized Steel Windows.
Above home in Chicago, Ill., M. H. Braun, Architect

Write for Catalog 68 AB
HOPE'S WINDOWS, Inc.
 Jamestown, N. Y.

LETTERS—

(Continued from page 81)

as soon as their lot is paid for and their deed delivered.

While not the entire \$152 is service charges, there still remains the fact that when making application for a \$5,000 loan, as an example, the applicant must deposit with the lending agency the sum of \$30 as initial expense for the loan; \$15 of this amount goes to the FHA and the balance of \$15 represents an initial payment of 1 per cent of the face amount of the loan. Should the application be turned down the applicant is out the \$30. Should it be accepted he then has to pay the balance due the lending agency on the 1 per cent of the face of the loan, amounting to \$35, a charge of \$2 for stipulations against liens, \$35 title search and drawing up of mortgage, \$8.50 for recording the mortgage, the mortgage insurance premium the first year of \$24.64, and fire insurance premium the first year estimated at \$16.66.

It seems to me that publishers like yourself would be extending an additional service to your readers if matters of this kind pertaining to FHA loans could be explained. My writing you relative to this matter has been prompted by the reaction of many of our purchasers, and while the sum involved could no doubt be handled, their attitude is that there are always hidden charges which should be nationally advertised in connection with these federal loans.

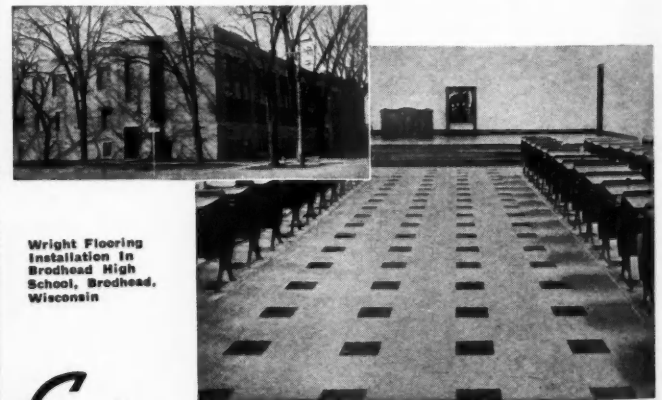
I will appreciate any comments that you might care to make.
 —FAR HILLS, by B. G. Crandall, General Manager.

Training for Skilled Occupations

Los Angeles, Calif.

To the Editor:

Because of the neglect on the part of educators, employers, employees, and the general public to organize years ago a systematic plan for training craftsmen, we are faced today with a lack of skilled workers in many trades. In addition to this serious situation we are now facing an expansion of water, air, and land armament for national protection which will require



Wright Flooring Installation in Brodhead High School, Brodhead, Wisconsin

Enjoy A 2-WAY PROFIT
 WITH THIS TOP QUALITY FLOORING



EASY TO LAY ON NEW OR OLD FLOORS

COSTS NO MORE THAN GOOD GRADE LINOLEUM

Build your own flooring business. Order Wright Rubber Tile direct for every job. No stocking necessary. Then make a profit both on the sale and installation. Wright floors are quiet, restful, easy to clean and noted for their lasting beauty. Wide choice of colors and designs. See Sweet's. Write for literature and easy-laying instructions.

WRIGHT RUBBER PRODUCTS CO.
 1603 Layard Ave. Racine, Wis.

WRIGHT RUBBER TILE

every skilled craftsman available plus operators and laborers. To overcome this deficiency, the National Defense Training Program has been developed. One part of this program proposes to give immediate training to persons who lack past industrial experiences or to persons who need "brush-up" courses so that they will become employable immediately. This should be recognized as short-term training and must not be confused with apprenticeship or long-term training.

Because of the need for clarifying objectives for these two plans—the short-term and long-term—we think it advisable that all educators, employers, employees and the public must recognize: (1) That all present training plans for skilled occupations must be scrupulously safeguarded so that the carefully selected young persons must continue to be trained in school and on the job until they have completed their training period and are recognized as craftsmen by the trade. (2) That other training programs should be rapidly developed in all skilled occupations so that in years to come we will have an adequate supply of craftsmen. (3) That while it is necessary at the present time to train rapidly in specific payroll jobs to meet the needs of defense industries, these persons will probably never be recognized as craftsmen and, therefore, everything possible should be done now to sponsor, further, and increase training programs for all skilled trades on some systematic basis so that in years to come we need never be in the situation we are in at the present time; namely, a great industrial nation without adequate craftsmen.—L. G. STIER, Principal, Frank Wiggins Trade School.

We Take Two Bows

Brooksville, Ky.

To the Editor:

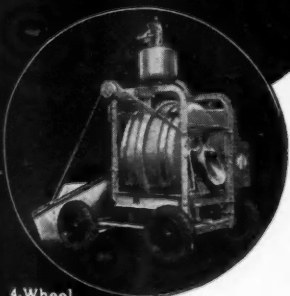
The enclosed coupon is self-explanatory. But I wish to thank you folks for the opportunity of using it, and the service it represents. The more I read the *American Builder* the better I like it, and the more firmly convinced I become that it truly is "The World's Greatest Building Paper."

WALTER C. HARDY,
Contractor and Builder

(Continued to page 84)

WINNERS — Every one of 'em!

Profit with One of These
Three, Handy, Timesaving
SMITH NON-TILTERS

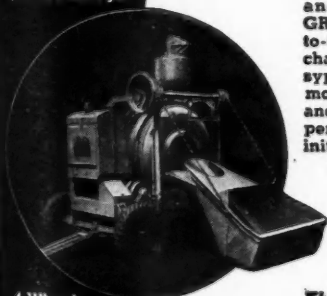


2-Wheel
TRAIL-SMITH

7-S and 10-S

These compact, lightweight Smith Non-Tilters enable you to mix more and better concrete . . . earn **GREATER PROFITS**. Famous "End-to-Center" mixing action. Faster charge and discharge. Accurate syphon-type water tank. Spring-mounted axles, automotive steering and pneumatic tired disc wheels permit fast traveling enroute. Low initial cost and low upkeep.

Write for new Catalog 159-B.



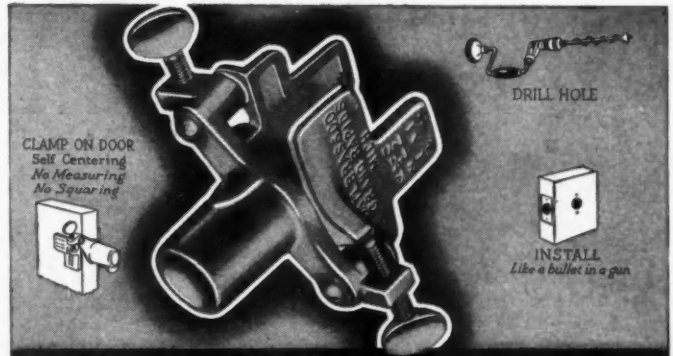
4-Wheel
End Discharge

4-Wheel
Side Discharge



The T. L. SMITH COMPANY
2849 N. 32nd St., Milwaukee, Wis.

SMITH MIXERS
THE BOULDER DAM MIXERS



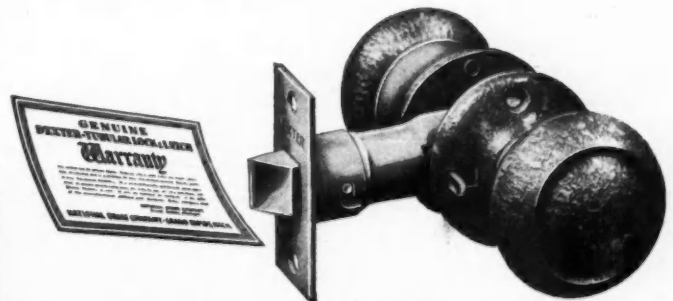
CLAMP ON DOOR
Self Centering
No Measuring
No Squaring

DRILL HOLE

INSTALL
Like a bullet in a gun

**SuperTool SAVES LABOR
DEXTER-TUBULAR
LOCKS and LATCHES**

Cut-the-Cost of Door Locks without sacrifice to quality. Save labor through installation with "Drill-Hole"—now doubly fast by use of Dexter Bit Guide. And Dexter-Tubular selection of "High-Style" trims sells on looks alone. Ask your dealer to demonstrate. See the complete Dexter-Tubular line in his store.



Lifetime WARRANTED

Dealers: Loan the Dexter Bit Guide to your customers—double-fast installation wins contractors, builders and Big volume users. 8,000 dealers can't be wrong. Millions of Dexter-Tubular Locks have been sold—now factory Warranted to Lifetime Service. Write for complete information. No obligation.



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Screen Door Hardware

THE DEVELOPER'S "BEST SALESMAN"



Development of Benson & West, Arlington, Va. Sided with 450 squares Eternit Sno-White Colonial Timbertex Siding. Roofed with 450 squares RU-BER-OID 12" Thick Butt Asphalt Shingles.

FIRE-PROOF
ROT-PROOF
REDUCED UPKEEP
YET
BEAUTIFUL

ETERNIT SIDINGS

Made from Asbestos and Portland Cement

If you want to see a "salesman" that will do a real job selling homes for you, take a look at Eternit Asbestos Cement Siding.

The minute a prospective home buyer sees your development and spots Eternit Asbestos Siding — **SELLING STARTS!** For Eternit Asbestos Sidings have *eye appeal* — real style and beauty. These modern sidings — manufactured in attractive Colonial or Thatch designs — give charm to today's most popular architecture. You have a choice of finishes, "WOOD GRAIN" or SMOOTH — and in the much wanted colors, plus Sno-White.

But eye appeal is only the introduction. These Eternit sidings are water repellent—fire-proof—and rot-proof. Neither paint nor stain is required to prolong their life. That means protection against dampness and termites—safety against fire —and less periodic upkeep expense. Isn't that a selling story *you can use?*

All Eternit Sidings are Ruberoid-made, which is the best assurance of exacting quality and PERFORMANCE.

If the sidewalls you use for the homes you build do not tell this convincing story, don't wait. Get the facts. Write now and put this star "salesman" to work. Address Dept. AB-9.

The RUBEROID Co.

Executive Offices: 500 Fifth Avenue, New York, N.Y.



Reg. U. S. Pat. Off.

RU-BER-OID

ROOFING AND BUILDING PRODUCTS

LETTERS—

(Continued from page 83)

Eatontown, N. J.

To the Editor:

I would like to express a few words of praise for the fine work you have been doing and will continue to do in the future, and I do think that future depends so much on the fine ideals by which the *American Builder* publication is published. The spirit which prevails throughout each issue is very encouraging to the young man in the building field. I have often wondered if you receive the pleasure that the builder does when completing a job for a satisfied customer. Your entire staff is the unsung hero in this vast building industry. If you all realize the security which you have helped to give the American Family then that is the pleasure you receive from your work.

JOHN N. SMOCK,
Contractor and Builder.

"Terracrete" Makes Low Cost Walls

San Jose, Calif.

To the Editor:

Would you be interested in a newly perfected type of solid wall construction briefly illustrated by the enclosed photograph —giving promise of reducing the total cost of equally well insulated homes by as much as one-third?

This is a big statement, I realize, exceeded only by its importance to home builders throughout our country, and far beyond.

Essentially, the method uses a special movable metal form that eliminates the cost of erecting and later discarding temporary wood forms. Continuous solid walls are tamped by successively raising this metal guide. The material used is extremely low cost soil-cement, "Terracrete," developed by the Portland Cement Association.

Characteristics of this method and mix are (it is possible to use stiff concrete with this method also):

1. Waterproof, highly resistant, will not sweat.
2. Most efficient heat insulator.

Now Ready Simplified Carpentry Estimating

By J. Douglas Wilson

Head of the Building Trades Department, Frank Wiggins
Trade School, Los Angeles, California

and Clell M. Rogers

Mathematics Instructor, Venice High School, Venice,
California



Based on a series of articles by Mr. Wilson entitled *How to Estimate Accurately*, which appeared in *American Builder and Building Age* last year, the material has been revised and expanded into this book. Many of the original illustrations have been changed and the number of helpful tables and mathematical short cuts have been increased by Mr. Rogers.

This new book clearly explains the "taking-off" of a bill of materials required for the construction of a house and the rules and methods of making an accurate estimate of costs. The constructional order of quantity survey is used. Many skilled carpenters who have taken Mr. Wilson's evening school courses in estimating have helped in making the explanations given in this book clear and practical.

210 pages, 71 illus., 36 tables, 5 x 7, cloth, \$2.50.

Book Department

AMERICAN BUILDER and BUILDING AGE
30 Church Street New York, N. Y.

3. Lessens cost of materials:
 - a. 40% of wall content dug from basement.
 - b. 90% of wall solids from immediate area (mixture is 40% soil, 40% sand, 10% cement, 10% water).
4. Lowers labor charges:
 - a. Building time much less.
 - b. Technical labor not necessary for majority of man hours.

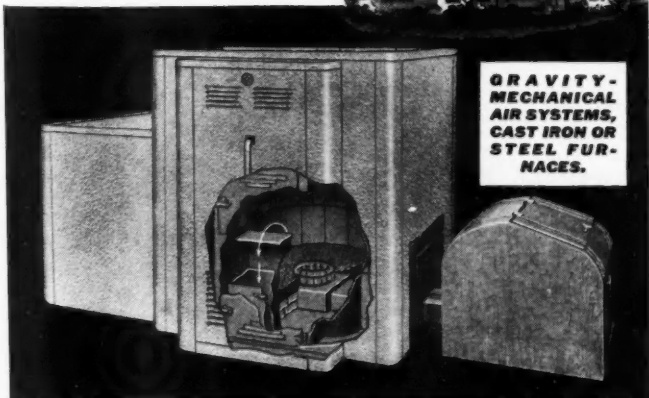


"Terracrete" house under construction

5. Quieter—marked decrease in noise transmission.
 6. Decided savings in freight charges.
 7. Stronger construction:
 - a. Compression strength approaches concrete; is 4 times that of adobe; steel reinforced.
 8. Fireproof walls.
- The first houses of this construction type are now being completed here in California.

R. BURTON ROSE, M. A.

FOR THE HOMES
YOU PLAN OR BUILD



ECONOMICAL COAL HEAT AIR CONDITIONER

THE Round Oak SKX Airlenzer (with patented clinker receptacle) is built especially for efficient and economical heating. Equipped with the modern Round Oak Stoker (or any other standard make), it provides all the advantages of auto-

matic coal heat, plus the comforts of winter air conditioning... at a cost that satisfies exacting buyers. An outstanding feature for any home. See your Round Oak dealer or write for all the facts today. Round Oak Company, Dowagiac, Michigan.



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STOVES • RANGES • FURNACES • OIL
BURNERS • AIR CONDITIONERS • STOKERS

FLEXIBILITY for every job... on the job!

Over **50**
wood-cutting
cost cutting
Operations
with
ONE
machine!

bridging, fire stops, etc. . . . just another reason why . . . you can't afford to be without DEWALT.

SAVES DOLLARS!
Every time you mark off material and cut it with hand tools you're losing hard-to-make dollars. So don't wait for the next job . . . let DEWALT finish your current work ahead of schedule and earn you more money. Furthermore . . . DEWALT equipped builders are busy builders . . . they can give more house for the money.

GET THE FACTS YOURSELF!
Make us prove these claims. Ask for an "on the job" demonstration . . . it won't cost you one cent. Write today . . . or telegraph at our expense.

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

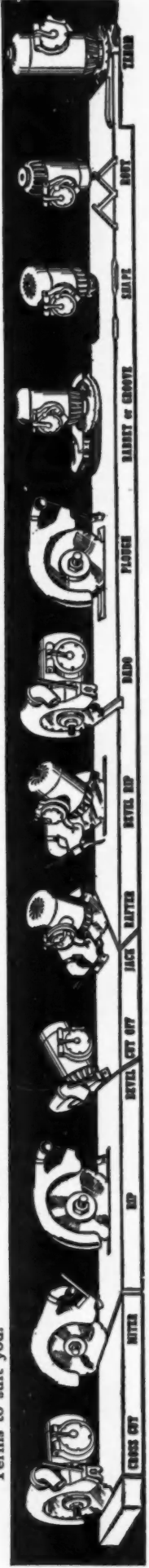
Hundreds of builders never start a job without their DEWALT because its remarkable flexibility and dependable performance saves time, money and material by handling every job . . . on the job.

SAVES 20% TO 30%
These builders know, too, that DEWALT saves 20% to 30% in fabricating costs . . . it places the facilities of a complete woodworking plant on the job. From foundation to interior trim DEWALT cuts perfectly to help build better houses. Joists, studs, headers, rafters, etc. . . . are custom cut on the spot.

SAVES TIME!
DEWALT takes the labor out of carpentry and speeds fabrication . . . one sawyer and helper keep 8 to 10 carpenters busy nailing up. DEWALT converts short pieces ordinarily wasted into close-fitting base blocks,



**PORTABLE
POWER**
For every Purpose and Pursue.
Terms to suit you.





"FIRESAFE CONCRETE HOMES"

is my policy!

Columbus builder one of many winning new profits and prestige with this fast-growing construction.

Consider the case of R. M. McCormick of Columbus, Ohio. He stepped out with a "concrete only" policy, building ten new houses last year, seven the first half of 1940 and more planned. Today he is more sold than ever on concrete's value to his clients and to his own business.

More Buyers Want Concrete's Economy and Beauty

Over 45,000 families have chosen concrete for their homes in the past four years. Prospects are quickly impressed by concrete's wide choice of pleasing textures and patterns, its adaptability to any architectural style.

Big Values at Low Cost

Concrete delivers *all* these qualities: fire-safety . . . resistance to termites, storms and decay . . . all-year comfort . . . low upkeep through decades of service . . . higher resale value. Yet the first *cost* is little if any more than for ordinary construction.

This Association is continuing the aggressive national advertising of concrete homes. Cash in on their growing popularity by building a *firesafe concrete demonstration home* now. Free information on request.

PORTLAND CEMENT ASSOCIATION
Dept. 9-3, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work.

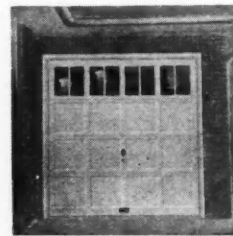


The STEEL SQUARE—

(Continued from page 57)

Fig. 3 shows a steel square laid down flat over a sectional drawing taken through the roof frame of Fig. 1 on the line S-S. The 12 foot run of the main roof is shown as 12 inches measured along the outside edge of the blade of the square and the 12 foot rise of the main roof is shown as 12 inches measured along the outside edge of the tongue of the square. The line P-O represents the line of the backs of the common rafters or the underside of the roof boarding of the main roof. The line R T S represents the line in which the backs of the ell roof rafters intersect the center of the ell roof ridge board and since this line is assumed to be ten feet above the top surface of the wall plates, distance E-S is measured off as ten inches along the outside edge of the tongue of the steel square.

It will be seen that the line R-S which is horizontal and parallel to the line P-E (the level of the top of the wall plates) intersects the line of the backs of the common rafters of the main roof (line P-O) at point T which is ten inches in the sketch (Fig. 3) to scale, but ten feet in reality above the level of the top of the wall plates represented by the line P N E. Point T, since it lies in the slope of the main roof is in the line P T O in Fig. 3, which pitches upward from point P at a slope of 12 in 12 and since the elevation of point T above the level of the tops of the wall plates (line P N E in Fig. 3) is 10, its horizontal or "run" distance from the outside edge of the wall plates (point P in Fig. 3) will be 12/12 of 10, which is again 10. If the steel square in Fig. 3 is moved back along the line P N E as shown by the dotted lines (Fig. 3) until the outside edge of the tongue passes through the point T, it will be seen that the distance P N measured



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warehouses—service
stations and markets**

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GARAGE DOORS**

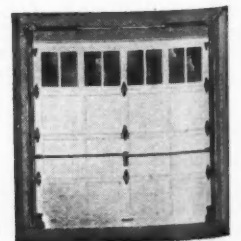
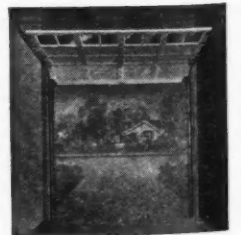
Easy to operate—attractive appearance—simple to install—weatherproof. Here is perfection in overhead door construction . . . no bulky or complicated mechanism to clutter up the interior of the building—so easy to operate women and children can easily open and close the Glideover door.

The Wagner Manufacturing Company has had many years of experience in building high speed elevator door operating equipment. This experience has been utilized in the design of the Glideover Door which accounts for the 100% satisfactory performance. Wagner Electric Door Controls may be furnished for Glideover or any other type of door.

Get the facts on Glideover Doors. Write for new bulletin giving complete details.

Wagner Mfg. Co.

Dept. AB 940, Cedar Falls, Iowa
Serving The Building Trade For Over
33 Years



along the outside edge of the blade of the square is 10 inches to scale. This means that the run of the valley rafter C in Fig. 1 is ten feet in the direction of the main roof, which may be represented by distance B E in Fig. 2, while it is eight feet in the direction of the ell roof, which may be represented by distance A E in Fig 2, therefore its actual run is 12 feet ten inches which may be represented by distance A B in Fig. 2. The rise of valley rafter C, Fig. 1, is ten feet represented by distance B F in Fig. 2A, consequently the length of valley rafter C is by measurement diagonally across the steel square from point A to point F in Fig. 2A sixteen and one-quarter feet (16'3").

The run of valley rafter B in Fig. 1 in the direction of the main roof is 12 feet, since it extends clear up to the main ridge and therefore its run in the direction of the ell roof is twelve-tenths of eight feet, which is nine and six-tenths feet, or very nearly nine feet and seven inches. This can be found by measurement with the steel square as shown in Fig. 4. The actual run of the valley rafter B, Fig. 1, can be found to be fifteen feet four and one-half inches (15-5/8 feet) by measuring diagonally across the steel square from 9-6/10 on the outside edge of the tongue to 12 on the outside edge of the blade as shown in Fig. 4. The rise of valley rafter B in Fig. 1 is the same as the rise of the main roof, which is 12 feet in this case and this rise can be laid off along the outside edge of the tongue of the steel square as shown in Fig. 5, while the run of the valley (15-5/8) is laid off along the outside edge of the blade. Then the length of valley rafter B, Fig. 1, can be found to be nineteen feet six inches (19 1/2 feet) by measuring diagonally across the square from 15-3/8 on the outside edge of the blade to 12 on the outside edge of the tongue as shown in Fig. 5.

(Continued to page 88)

NEW COMBINATION SASH BALANCE and WEATHERSTRIP



SAVES UP TO \$1.00 PER WINDOW

• Eliminates all pulleys, weights, sash cords and the old leaky, clumsy box frames. Gives greater glass area for each opening and efficiently weatherstrips the sash. Fits any size window, new or old . . . two grooves per sash is all that is required and installation is simple enough for any carpenter to do a satisfactory job. Easy operation provides actual finger-tip control. Here is an opportunity for every contractor to cut costs on the small home. Send coupon today for full information.

MASTER NO-DRAFT SASH BALANCE

DETAIL SHOWING TYPICAL APPLICATION ON 1 1/8" SASH AND GROOVING DIMENSIONS

MAIL TODAY

- Eliminates weights, pulleys and cord.
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- A "two-in-one" cost saver for small homes.

Master Metal Strip Service Inc. 1720 N. Kilbourn Ave., Chicago, Ill.

Gentlemen: I am interested in your new Sash Balance. Please send me complete information.

Name _____
Street _____
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LET THIS *McKinney* "CHECK LIST" SELL FOR YOU*

WHAT TO LOOK FOR IN A HOME

- DOES THE HARDWARE MATCH THE ARCHITECTURAL DESIGN? Hardware of incorrect design is as out of place as a high silk hat on a man in business clothes. Hardware of correct design should blend into the architecture as a whole.
- DOES YOUR INTERIOR HARDWARE MATCH? It should match the exterior hardware in design and thus "follow through" the complete architectural motif. It should be a definite part of your interior decoration.
- IS YOUR MAIN ENTRANCE A FRIENDLY DOORWAY? A friendly doorway is a picture in itself. It says welcome to guests before you do. A friendly doorway is a warm welcome to all and warrants your careful attention to quality hardware.
- DOES EVERY DOOR HAVE THREE HINGES? Large expanses of wood will warp, and a warped door can be avoided with proper hardware. One small hinge placed in the center of every door is an inexpensive safeguard against warping.
- ARE ALL OF YOUR EXTERIOR DOORS, INCLUDING GARAGE DOOR, EQUIPPED WITH CYLINDER LOCKS? Cylinder locks have flat keys that fit conveniently into your pocket or purse. Cylinder locks assure maximum security and convenience, as they can be keyed alike so that one key will open all doors—front, side, rear and garage.
- DO YOU HAVE CHROME-PLATED HARDWARE IN YOUR BATHROOM AND KITCHEN? Your bath and kitchen plumbing fixtures are chrome-plated over brass. Your hardware should match. You should insist on chrome-plated hardware to maintain its sparkling appearance indefinitely.

This check list is being mailed to 30,000 Home Prospects in 1940, as an aid to better hardware selection.



*REPRINTS AVAILABLE FOR MAILING—WRITE

McKINNEY MANUFACTURING COMPANY • PITTSBURGH, PA.

75

YEARS OF DESIGNING AND MANUFACTURING GOOD HARDWARE



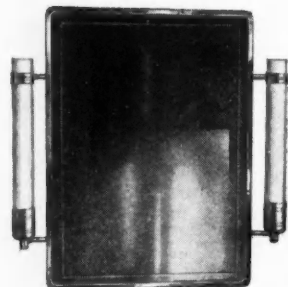
DON'T LET YOUR Bathrooms LET YOU DOWN

You don't have to go far to find bathrooms where beautiful fixtures are keeping company with cheap tinny cabinets.

This doesn't make sense. People do not want—for the sake of saving a few dollars—this element of cheapness that detracts from the beauty and harmony the architect planned.

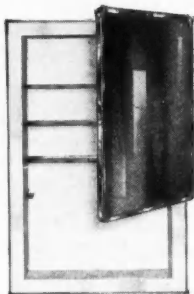
For only a few dollars more than the cost of a cheap cabinet, you can equip the average bathroom with a MIAMI Cabinet that matches beauty and luxury with any bathroom equipment, however de luxe.

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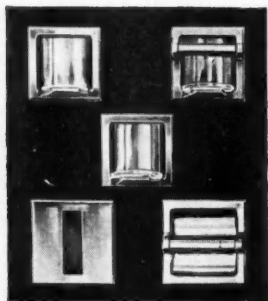
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The STEEL SQUARE—

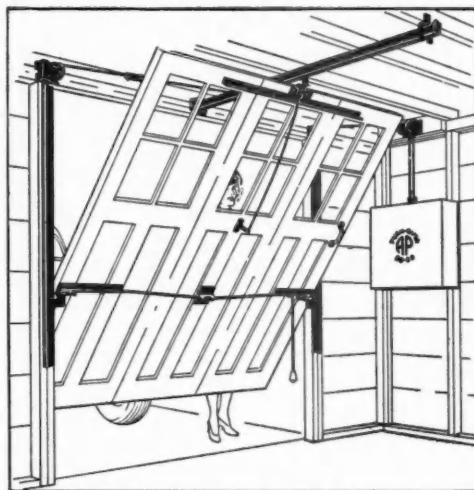
(Continued from page 87)

There will be a side cut where the valley rafter B, Fig. 1, fits against the ridge board and this can be made by means of the steel square as shown in Fig. 6 and as explained in other articles of this series in connection with side cuts on hip rafters.

Valley rafter C, Fig. 1, will not be at right angles to valley rafter B because the ell roof and the main roof are not roofs of equal pitch. There will therefore be a side cut at the upper end of valley rafter C to fit it against valley rafter B. The line for this side cut across the back of the valley rafter can be laid out with the steel square as is shown in Fig. 7 and Fig. 8, but it is not as easy and simple a process as marking off the side cuts for hip and jack rafters or for valley rafters which extend through to the ridge board of the main roof like valley rafter B in Fig. 1.

To find the inch mark to use on the tongue and blade of the steel square to mark off the side cut at the upper end of valley rafter C in Fig. 1, refer to Fig. 7. In Fig. 7 select point A on the outside edge of the tongue of the square such that its distance from the heel of the square in inches is one half as much as the run in feet of valley rafter C (Fig. 1) in the direction of the main roof. It will be (in this case) five inches as shown in Fig. 7. Then select the point F on the outside edge of the blade of the square, such that its distance from the heel of the square in inches is one half as much as the run in feet of the valley rafter C in the direction of the ell roof. It will be (in this case) four inches. Draw line ADE joining points A and F and on this line select point D just as far from point A as is the heel of the square so that distance A D equals distance A E. At point D draw line D G at right

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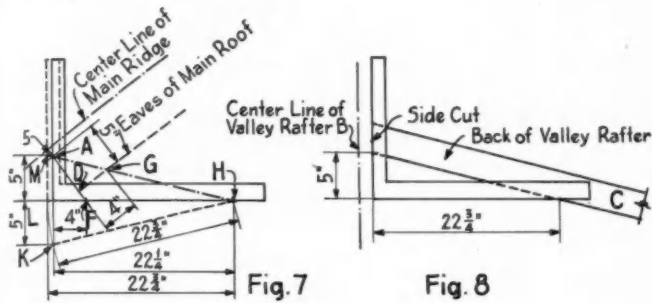
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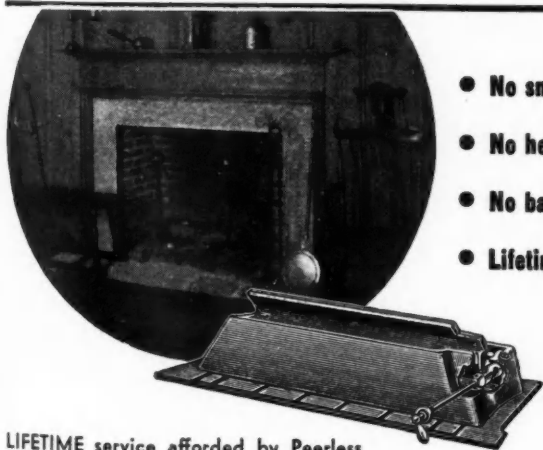
angles to line A D F and make distance D G equal to distance E F, in this case four inches, (to the scale used in Fig. 7). Then a line drawn carefully through points A and G will represent the center line of the back of valley rafter C, Fig. 1 in the plan view and can be extended until it crosses the line of the outside edge of the blade of the square at point H. The line of the outside edge of the tongue of the square (line E-A) will now correspond to the edge of the valley rafter B, Fig. 1, in the plan view, and the angle E A H will correspond to the plan view of the angle between valley rafters B and C shown in Fig. 1.



Now extend the line A-E along the outside edge of the tongue of the square beyond the point E to point K, such that distance E K equals in inches one half as much as the rise of the valley rafter C in feet above the tops of the wall plates. In this case distance E K will be 5 inches. Now measure off distance H K and lay it off along the line of the outside edge of the blade of the square (extended) from point H to point L, thus locating the point L 22 3/4 inches from point H.

(Continued to page 90)

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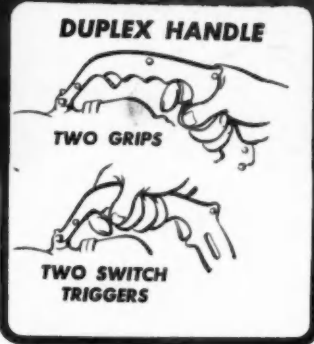
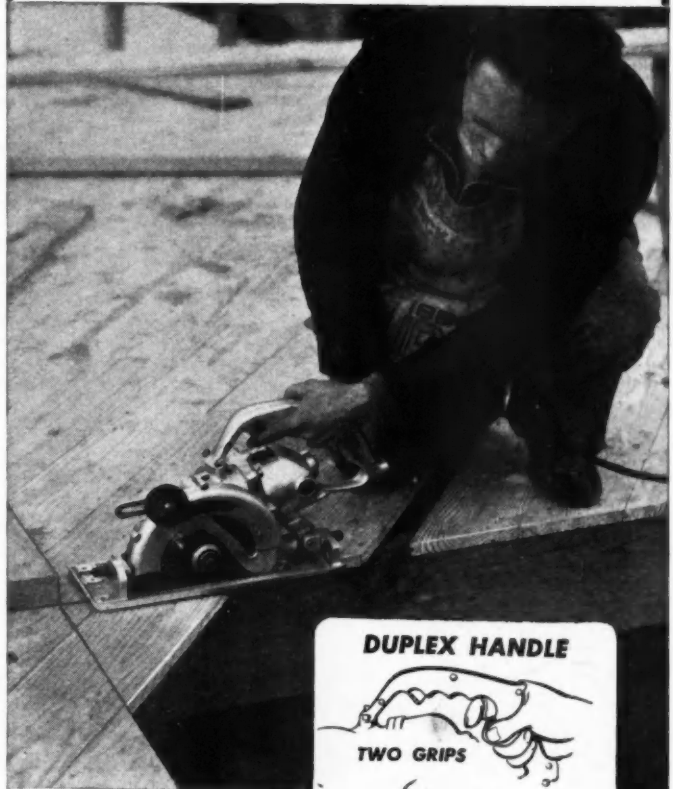
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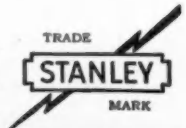
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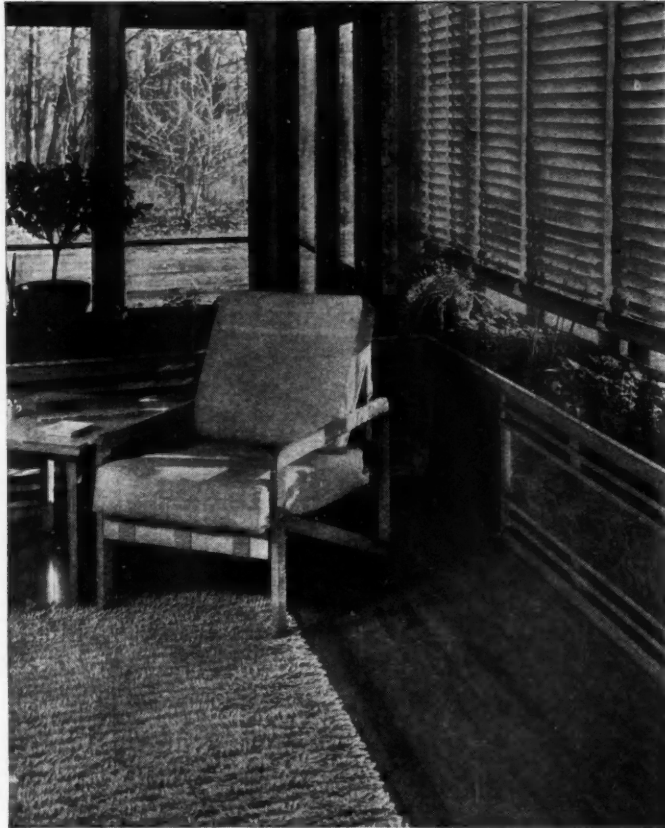
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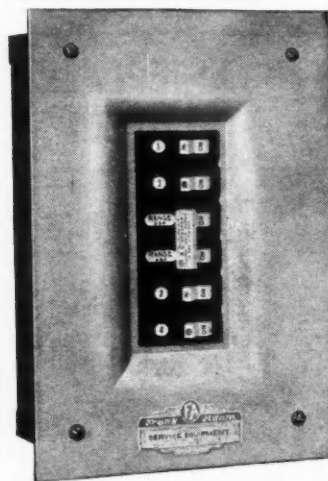
The STEEL SQUARE—

(Continued from page 89)

Draw through point L the dotted line L H parallel to line E A (the outside edge of the tongue of the square in its original position) and make distance L M equal to distance E A (in this case five inches). Then angle L M H is the true angle between valley rafter C and valley rafter B in Fig. 1 and the inch marks to use on the steel square in marking off the side cut on the back of valley rafter C are 5 on the tongue and $22\frac{3}{4}$ on the blade as shown in Fig. 8. Place the steel square on the back of the valley rafter as shown in Fig. 8, using one edge of the rafter as a measuring line with the square so placed that the 5 inch mark on the outside edge of the tongue and the $22\frac{3}{4}$ inch mark on the outside edge of the blade both rest exactly on this measuring line. Then a mark drawn across the back of the valley rafter along the outside edge of the tongue of the square will be the mark for the side cut to fit valley rafter C in Fig. 1 to valley rafter B.

Cuts for Fitting Roof Boards at Hips

In any hipped roof there is the problem of cutting the ends of the roof boards so that they will fit properly at the hip lines. The cut to be made on the face of the board on each side of the hip line depends upon the pitch of the roof and when this is known, the cut can be marked off on the end of the board with the help of the steel square. As almost all hipped roofs are roofs of *equal pitch*, only this sort of roof will be considered. Fig. 9 shows a plan view looking straight down on one corner of a hipped roof of equal pitch. The hip line and the lines of the roof boards are shown. As this is a plan view and not a direct view, the *width* of the roof boards



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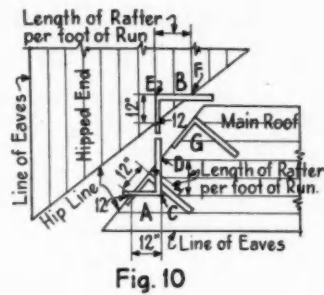
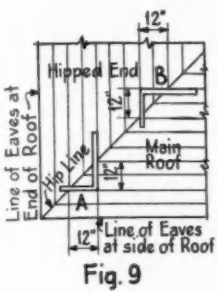


Fig. 11

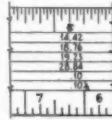


Fig. 12

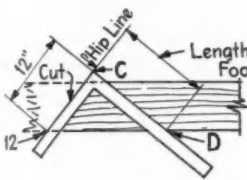


Fig. 13

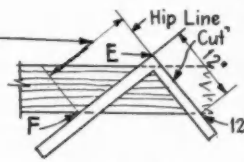


Fig. 14

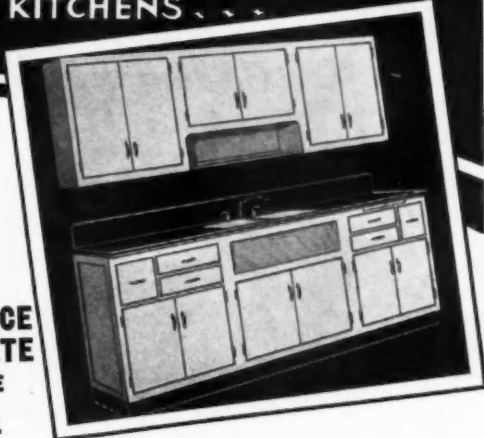
is foreshortened in each case and they appear in this view to be narrower than they actually are. Because the roof is a roof of equal pitch, the hip line in this plan view makes an angle of forty-five degrees with the line of the eaves at the side and at the end of the roof.

If a steel square were to be laid down on top on this plan view of the roof as shown at A, with the tongue

(Continued to page 92)

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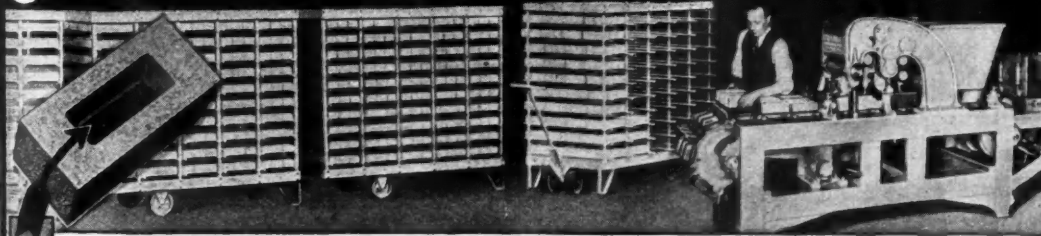
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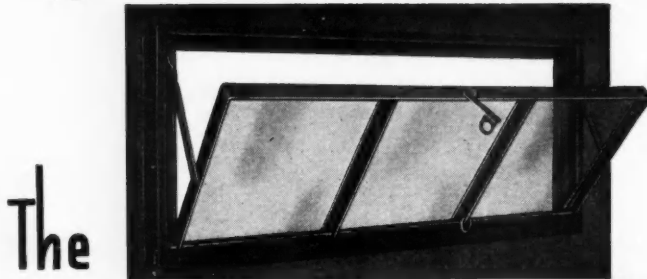
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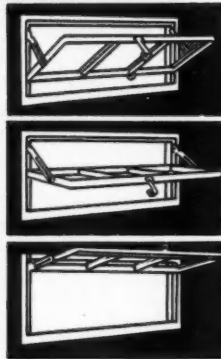


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The STEEL SQUARE—

(Continued from page 91)

parallel to the eave line of the side of the roof and the 12 inch mark on the outside edge of the tongue resting on the hip line and also with the blade or body of the square at right angles to the line of the eaves, then, because the hip line makes an angle of 45 degrees with the eave line, the twelve inch mark on the outside edge of the blade will also rest on the hip line as well as the 12 inch mark on the outside edge of the tongue. The same thing is true if the square is laid down on the plan view of the roof as shown at B, Fig. 9, where the blade or body of the square is at right angles to the line of the eaves at the end of the roof. In this plan view the 12 inch dimensions along the tongue of the square parallel to the eave lines of the roof are true dimensions, but the 12 inch dimensions along the blade or body of the square at right angles to the eave lines are foreshortened views and are less than they would be if the square were laid down on the actual slope of the roof.

Fig. 10 shows at A a view looking directly at the slope of the main roof with the square laid down on it across the hip line. At B, Fig. 10, is shown a similar direct view of the slope of the *hipped* end of the roof and the square on it with the blade at right angles to the line of the eaves. In each case the square is placed with the tongue parallel to the line of the eaves and with the twelve inch mark on the outside edge of the tongue of the square resting on the hip line. The hip line is shown in each case A and B, but in this true view it is not at an angle of 45 degrees with the lines of the eaves. The amount of this angle and the dimension on the outside edge of the blade or body of the square where it crosses the hip line—dimension C-D in Fig. 10 at A—depends

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upon the slope of the roof in each case. The dimension C-D in Fig. 10 at A, measured along the outside edge of the blade of the square at right angles to the eave line is equal in every case to the length-per-foot-run of the common rafters in the roof slope which is being considered.

This is also true of the dimension E-F in Fig. 10 at B, where the square is shown lying on the sloping hipped end of the roof with the blade or body at right angles to the line of the eaves at the end of the roof. The "length-per-foot-run" may be taken from the rafter tables on the face of the blade or body of the steel square where it is called "Length of Main Rafters Per Foot Run," (see Fig. 11) and is the first figure in the column of figures underneath the dimension in the inch line on the outside edge of the blade of the square corresponding to the rise-per-foot-run for the roof slope in which the roof boards lie. For a rise-per-foot-run of 8 inches the length-per-foot-run is 14.42 inches (see Fig. 12). After having found distance C-D in Fig. 10 at A, the next thing to do is to change the position of the square so that the outside edge of the tongue or blade will lie along the hip line so that it can be used to mark off on the roof board the cut to be made. In Fig. 10 at A, keeping the point marked 12 on the outside edge of the tongue always at the same point on the hip line, imagine the square to be swung around this point and then turned completely over so as to bring it into the position shown at A and G in Fig. 10, where the tongue is lying along the hip line. Fig. 13 shows one roof board separated out from the rest and shows the steel square in the position described above lying across the roof board with the 12 inch mark on the outside edge of the tongue held at one edge of the board and point D on the outside edge of the blade held

(Continued to page 94)



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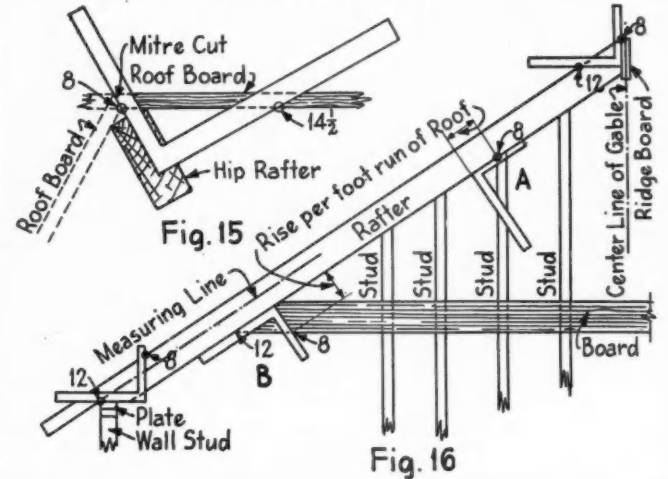
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The STEEL SQUARE—

(Continued from page 93)

on this same edge of the board. Dimension c-d measured on the outside edge of the blade of the square is equal to the "length-per-foot-run" of the common or "main" rafters on which the roof board will be placed. When the square is in this position (as shown in Fig. 13) a mark made across the face of the roof board along the outside edge of the tongue of the square will be the line of the cut to be made to fit the board to the hip line. The position of the steel square on the board shown in Fig. 13 is correct for a board in the portion of the roof slope marked "MAIN ROOF" in Fig. 10.

For the portion of the roof slope marked "HIPPED END" in Fig. 10, the same general method would be followed as shown in Fig. 14, except that the cut would



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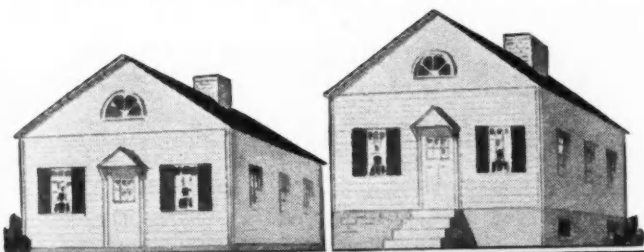
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be made at the right hand end of the roof board instead of the left hand end so that it would fit against the board shown in Fig. 13 over the hip line. To make the two roof boards fit together at the hip line another cut is necessary across the thickness of the boards. This cut is called a Mitre Cut and is shown in Fig. 15, being marked off across the edge of a board with the steel square. Using the under side of the board as a "measuring line," the square should be applied as shown in Fig. 15 with the dimension on the outside edge of the blade corresponding to the length of the common rafter per-foot-of-run ($14\frac{1}{2}$ in this case) and the dimension on the outside edge of the tongue corresponding to the rise of the roof slope per-foot-of-run (8 in this case) both on the measuring line. With the square in this position, a line drawn on the edge of the board along the outside edge of the tongue of the steel square will be the mark for the mitre cut.

Cuts for Wall Studding at Gable Ends

In Fig. 16 is shown a part of the wall framing for one half of the gable end of a building which has a simple pitch or gable roof. The rafter is shown and the end wall studs which must be fitted against the end rafter at their upper end. This roof has a rise of 8 inches per foot of run. At the extreme left of Fig. 16 the steel square is shown in the position on the rafter for making the seat cut at the eave of the roof. At the extreme right the square is shown in the position for making the plumb cut at the ridge board. The measuring line is shown and the 12 inch mark on the blade of the square and the 8 inch mark on the tongue have been placed on this line. At A is shown the way in which the square should be

(Continued to page 96)



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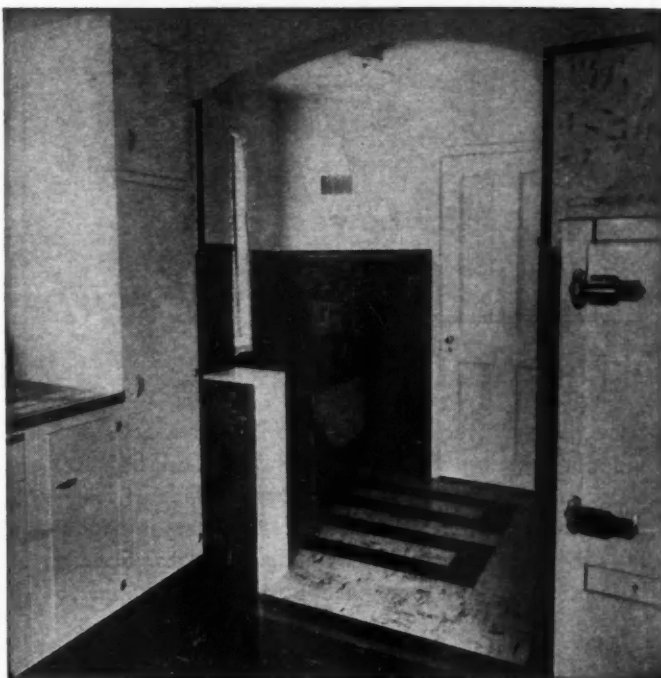
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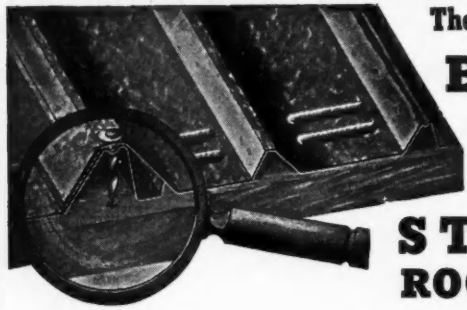
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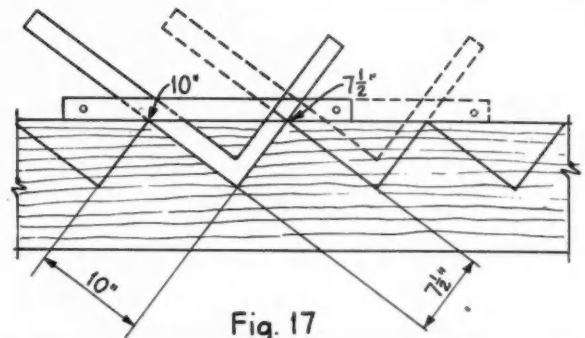
The STEEL SQUARE—

(Continued from page 95)

placed on the outside edge of the wall stud to mark off the cut to fit the stud against the under side of the rafter with the twelve inch mark on the outside edge of the blade and the 8 inch mark on the outside edge of the tongue (the rise-per-foot-run of the roof) both placed on one edge of the stud. With the square in this position a mark made across the outside edge of the wall stud along the outside edge of the tongue of the square will indicate the cut to be made.

Cuts for Wall Sheathing at Gable Ends

In Fig. 16 a wall sheathing board is shown at B, with the steel square laid on it in the proper position for marking off the cut to be made to fit the end of the board against the rafter or the under side of the roof boarding at the gable end. Using the lower edge of the wall sheathing board as a measuring line, the 12 inch mark on the blade of the square and the mark on the tongue corre-



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sponding to the rise-per-foot-run of the roof should be placed on this edge as shown in Fig. 16. Then a line drawn across the face of the board along the outside edge of the blade of the square will mark off the cut which must be made to fit the end of the wall board to the gable.

Laying Out Stair Strings

The steel square may be found to be very useful in the job of laying out and cutting the strings on "horses" for stairs in order to provide for the treads and risers. Fig. 17 shows how the square is applied to the face of the plank from which the string is to be cut. One edge of the plank should be dressed straight and true. The mark on the blade of the square corresponding to the width of the tread and the mark on the tongue of the square corresponding to the height of the riser should both be held exactly on this dressed edge of the plank. Then marks made on the side of the plank along the outside edges of the blade and tongue of the square will indicate the dimensions of the three sided piece to be cut out of the plank. If a "fence" is used on the square as shown in Fig. 17 the square can be moved along the edge of the plank as shown by the dotted lines so that the triangle for the next tread and riser can be marked off.

Ship's Ladder Stair

Very steep stairs are sometimes required to give access to attics or cellars where there is little room for the "run." These stairs have narrow treads and no risers and the treads are fitted in between two strings. Such stairs are called Ship's Ladder Stairs. The application of the steel square to their construction is illustrated in

(Continued to page 98)

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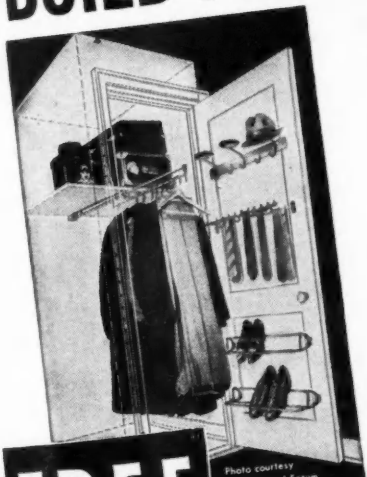


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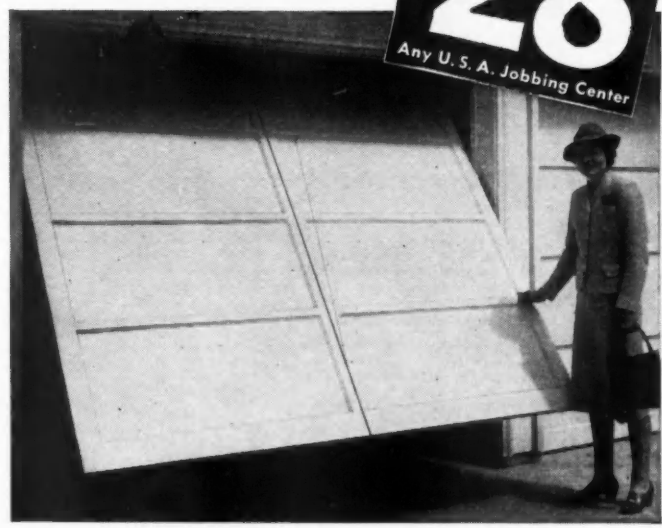
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The STEEL SQUARE—

(Continued from page 97)

Fig. 18. The height from floor to floor can be divided into a number of equal parts such that each one will be about ten inches, which is a suitable height for the riser of a ship's ladder stair. From the available length for the well hole, find out what the "run" of the ladder stair will be. Take a steel square with a wooden "fence" attached to it and adjust the fence on the square as shown in Fig. 18, so that the fence crosses the tongue of the square at the inch mark corresponding to the number of feet in the run, while the fence crosses the outside edge of the blade of the square at the inch mark corresponding to the number of feet from one floor level to the other.

When the run is quite small, as is usually the case with steep ladders, these figures can be doubled when setting the fence on the steel square. Thus in Fig. 18 the run is three feet, but six inches is used on the outside edge of the tongue of the square and the distance floor to floor is seven feet, but fourteen inches is used on the outside edge of the blade of the square. After the fence has been adjusted to the square, it can be applied to the upper edge of the plank string, near the lower end as shown in Fig. 18. A mark made on the stuff along the outside edge of the tongue of the square will indicate the cut to fit the string to the floor. The outside edge of the blade of the square will be in a vertical position and the height of the first riser (10½ inches in Fig. 18) can be measured off along this edge of the square and a mark made on the string as at B in Fig. 18. The square with its fence can then be shoved up along the edge of the string until the outside edge of the tongue is at the point B. Then a mark made across the face of the string will indicate the



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top of the first tread above the floor. Again 10½ inches (the riser height) can be measured off along the outside edge of the blade of the square as shown at "C" Fig. 18 and the process repeated, thus locating the line of the top of the second tread.

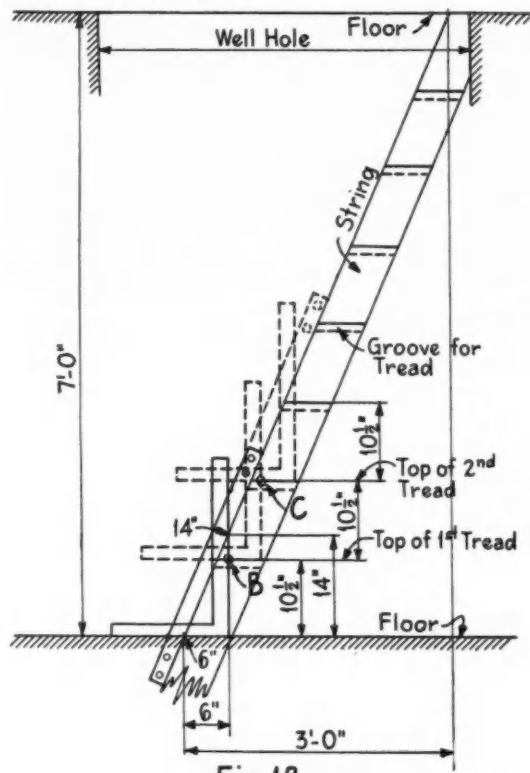
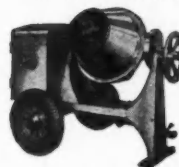


Fig. 18

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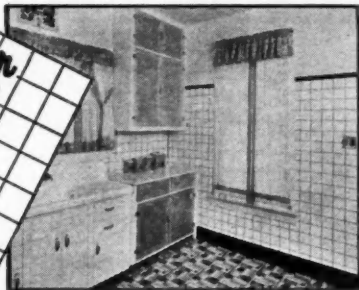
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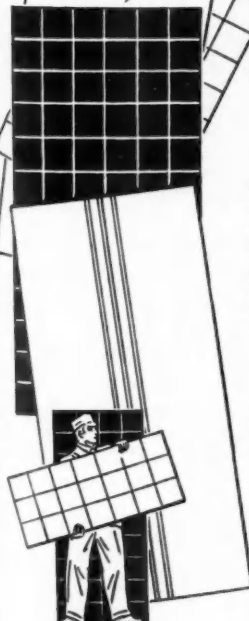
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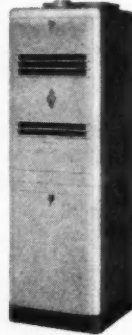
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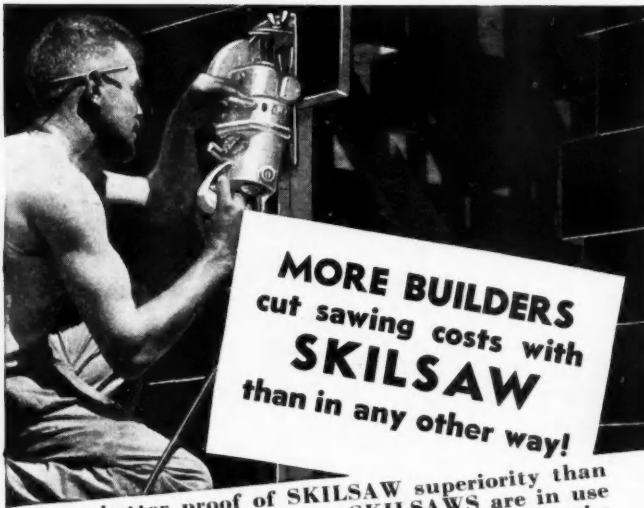


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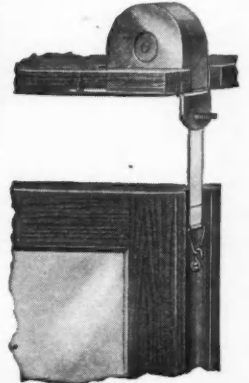
Heating equipment in the first group of houses consisted of a Duo-Therm oil heater located in a niche in the living room. While this has proved satisfactory, Fiedler is planning in the next group to locate a forced warm air oil-burning unit in a small extension at rear of house. Hot water is supplied by an American Bosch No-Tank instantaneous gas heater placed in the kitchen near the sink. Kohler plumbing fixtures are used throughout and Yale & Towne hardware. Lumber and millwork materials were supplied by the J. G. Roy Lumber Co. of Chicopee.

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(Continued from page 40)

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(Continued to page 102)

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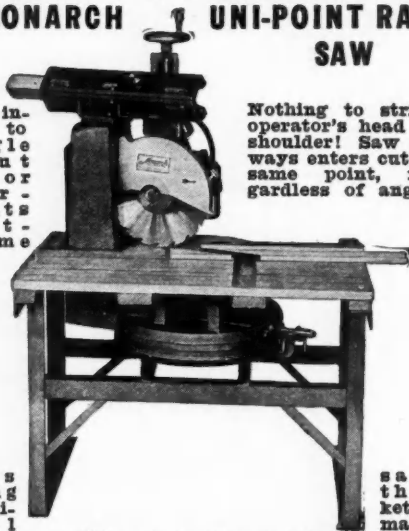
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Six-Unit Row House

(Continued from page 101)

basement ceiling copper tubes; automatic gas hot water heaters with thermostats. All fixtures enameled iron or porcelain with chrome plated trim on brass.

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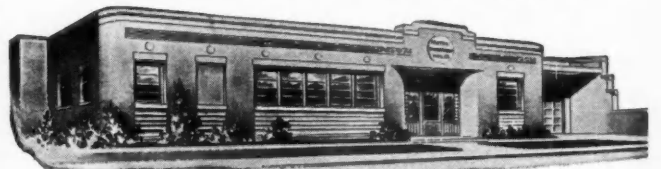
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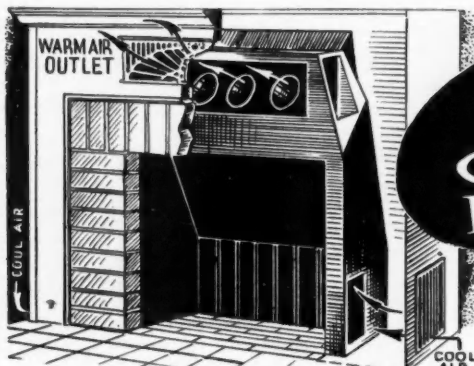


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* * *

How to Anchor Against Storm Damage

(Continued from page 45)

lowed in order by damage to the porch roofs, then the house roof, and finally, damage to the wall on the-lee side.

There probably is little chance that any particular fastening in any particular building will be stressed to its capacity during the useful life of the building, but the loss due to the omission of one badly needed fastening many many times exceeds the cost of those not sorely needed, and usually it will be found that fastenings considerably in excess of the absolute requirements will reduce maintenance costs aside from storm damage enough to justify their installation.

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"TruCost" Estimating Figures for Home Designs in this Issue



The Editors have prepared a 28 PAGE EXPLANATION of American Builder's "TruCost" system of quick, accurate estimating and offer it to anyone interested at 25 cents per copy. Please enclose payment when ordering. Address American Builder, 30 Church St., New York City.

Page 35, September: Fiedler, Bldr.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 98 lin. ft.; Outside Walls, 10.26 sqs.; First Floor, 6.00 sqs.; Ceiling, 6.00 sqs.; Roof Pitch, 6" rise per ft. run; Roof, 7.25 sqs.; Cornice, C & F, 106 lin. ft.; Partitions, 90 lin. ft.; Inside Finish OS Walls, 98 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Inside Doors and Cased Opgs., 8 opgs.; Windows and Casements, 8 opgs.; Gable Sash and Louvers, 2 opgs.; Chimney, 18 lin. ft.; Porch Floor, .18 sqs.

Page 39, September: Weber Bros., Bldrs.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 85 lin. ft.; Trench Walls, 70 lin. ft.; Basement Floor, 432 sq. ft.; Garage Floor, 183 sq. ft.; Excavation per ft. deep, 20 cu. yds.; Outside Walls, 16.00 sqs.; First Floor, 5.17 sqs.; Second Floor, with fin. flg., 4.32 sqs.; Second Floor, without fin. flg., 1.75 sqs.; Ceiling, 9.50 sqs.; Roof Pitch, 8" rise per ft. run; Roof, 9.60 sqs.; Hips and Valleys, 28 lin. ft.; Cornice, C & F, 160 lin. ft.; Cornice, 8", 16 lin. ft.; Partitions, 130 lin. ft.; Inside Finish OS Walls, 192 lin. ft.; Front and OS French Doors, 1 opg.; Rear and Grade Doors, 1 opg.; Garage Door 8 ft. wide, 1; Inside Doors and Cased Opgs., 14 opgs.; Windows and Casements, 18 opgs.; Gable Sash and Louvers, 1 opg.; Chimney, 26 lin. ft.; Main Stairs, 1; Porch Floor, .25 sqs.;



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Porch Ceilings, .12 sqs.; Porch Beam, 10 lin. ft.; Porch Roof, 30 sqs.; Porch Cornice, 20 lin. ft.

Page 50, September: Polhemus & Coffin, Archts.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Trench Walls, 350 lin. ft.; Garage Floor, 360 sq. ft.; Excavation per ft. deep, 73 cu. yds.; Outside Walls, 42.00 sqs.; First Floor, 20.00 sqs.; Second Floor, with fin. flg., 9.60 sqs.; Ceiling, 29.60 sqs.; Roof Pitch, 12" rise per ft. run; Roof, 30 sqs.; Hips and Valleys, 50 lin. ft.; Cornice, C & F, 300 lin. ft.; Partitions, 348 lin. ft.; Inside Finish OS Walls, 344 lin. ft.; Front and OS French Doors, 3 opps.; Rear and Grade Doors, 3 opps.; Garage Doors 8 ft. wide, 2; Inside Doors and Cased Opps., 32 opps.; Windows and Casements, 37 opps.; Gable Sash and Louvers, 4 opps.; 2 Chimneys, 56 lin. ft.; Main Stairs, 1; Porch Floor, 3.00 sqs.; Porch Ceilings, 3.00 sqs.; Porch Beam, 64 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, 3.60 sqs.; Porch Cornice, 56 lin. ft.

Page 53, September: Gylleck, Archt.

"TRUCOST" ESTIMATING FIGURES FOR THIS HOUSE: Basement Walls, 115 lin. ft.; Trench Walls, 52 lin. ft.; Basement Floor, 760 sq. ft.; Excavation per ft. deep, 33 cu. yds.; Outside Walls, 19.00 sqs.; First Floor, 7.60 sqs.; Second Floor, with fin. flg., 7.00 sqs.; Ceiling, 14.60 sqs.; Roof Pitch, 10" rise per ft. run; Roof, 10.50 sqs.; Hips and Valleys, 20 lin. ft.; Cornice, C & F, 195 lin. ft.; Partitions, 210 lin. ft.; Inside Finish OS Walls, 215 lin. ft.; Front and OS French Doors, 2 opps.; Rear and Grade Doors, 2 opps.; Inside Doors and Cased Opps., 18 opps.; Windows and Casements, 24 opps.; Gable Sash and Louvers, 2 opps.; Chimney, 32 lin. ft.; Main Stairs, 1; Porch Floor, 1.70 sqs.; Porch Ceilings, 1.20 sqs.; Porch Beam, 32 lin. ft.; Porch and Balcony Post and Newels, 4; Porch Roof, 1.20 sqs.; Porch Cornice, 32 lin. ft.; Porch and Deck Rail, 32 lin. ft.

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